Scientific Approaches & Benefits of Yogic Science: A Review

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Abstract

In the world of yoga there are —Eight limbs path which helps in different aspects like coordination of body and mind and helps to create positivity of mind and help the body healthy and fit by which the functioning of the body improves. In today‘s modern life various type of disease and deformity takes place most of the things takes place due to unbalanced food, & other. The mind is always wondering and being rebellious, never focusing on the moment. It is the mind job to think, it is relentlessly interpreting everything. That is seen, perceived and experienced and this pattern of habit goes through change to behavior and attitude. Many people who practice yoga do so to maintain their health and well-being, improve physical fitness, relieve stress, and enhance quality of life. In addition, they may be addressing specific health conditions, such as back pain, neck pain, arthritis, and anxiety. Basically yoga has been more effective than control and waitlist control conditions, although not always more effective than treatment comparison groups such as other forms of exercise. More randomized controlled studies are needed in which yoga is compared to active exercise groups. Having established the physical and mental health benefits of yoga makes it ethically questionable to assign participants to inactive control groups. Shorter sessions should be investigated for cost-effectiveness and for daily practice.

Key words : Yoga, Cost Effective, Disease, Deformity.

Introduction

Yoga is a philosophical system of exercise and meditation originating in what is now India 2000-4000 years ago. There are many forms of yoga which differ in specific practices, while maintaining the purpose of directing the mind and body. Common elements of many forms include postures (asanas), which are held for a certain period of time, controlled breathing exercises (pranayama) and meditation. Yoga practice has the general aim of facilitating the development and integration of the body, mind and breath to produce structural, physiological and psychological effects. Specifically, the development of a strong and flexible body which is free of pain, a balanced autonomic nervous system enabling all physiological systems to function optimally and a calm, clear and tranquil mind. The science of Yoga is a psychology of a philosophical nature. The very introduction of the system of Yoga by Patanjali is by way of an instruction that the mind has to be controlled- Yogahs-chitta-vritti-nirodhah. Patanjali does not go into the details of the philosophical background of the necessity to control the mind, the background that comes in Samkhya and Vedanta. He very simply explains that Yoga is control of the mind, restraint of the mind-stuff. Yoga is an experiential science. The most important benefit of yoga is it balances our physical and mental conditions. The aging process, which is largely an artificial condition, caused mainly by autointoxication or self-poisoning, can be slowed down by practicing yoga by keeping the body clean, flexible and well lubricated, we can significantly reduce the catabolic process of cell deterioration. To get the maximum benefits of yoga we need to combine the practices of yogasanas, pranayama and meditation. Hatha yoga is the most common form of yoga practiced in Western societies. It involves asana to develop strength, flexibility, balance and the co-ordination of the mind, body and breath, in combination with pranayama and meditation exercise to calm the mind and develop self awareness. The different styles of hatha yoga that have developed are characterized by the rate at which asanas are performed, the physical intensity and level of difficulty, the relative emphasis on body alignment and relaxation and the ambient temperature in which it is practiced. Bikram yoga is a style that was synthesized from traditional yoga methods. It is performed in a warm/hot environment (~105 degree F, at least 40% humidity) for 90 minutes and comprises a set series of 26 postures as well as breathing exercises. Although many of the asanas may be common to both systems, others have been modified or omitted according to different schools of thought and which asanas are considered to be manageable and safe to perform. Yoga as a way of life is more true to its ancient tenets. It constitutes asana, regulated breathing (pranayama), and awareness of yoga (principles) that govern the mind. Regular practice of yoga enhances awareness of mind and body, which is needed in the self management of diet and exercise plan in diabetes. According to Patanjali, yoga consists of eight steps or limbs, which are all equally important and are related as parts of a whole. The pmpose of these eight limbs is discriminative enlightenment or self-realization. But here the emphasis will be on health benefits. The eight steps or limbs of yoga are as follows:

1. Yama: Codes of restraint, abstinences, self-regulations;
2. Niyama: Observances, practices, self-training;
3. Asana: Meditation posture;
4. Pranayama: Expansion of breath and prana, regulation, control;
5. Pratyahara: Withdrawal of the senses, bringing inward;
6. Dharana: Concentration;
7. Dhyana: Meditation and
8. Samadhi: Deep absorption, meditation in its higher state, the state of perfected concentration.

Yoga Lifestyle is about two actions: "cleaning the mirror" and "spreading the Light".

The mirror is the mind and body. They have to be clean and pure to catch the light in the first place. Yoga lifestyle is therefore about purifying the mind and keeping the body healthy. Yoga lifestyle includes certain principles and values, some of which refer to the 5 rules of social conduct, the **YAMAS**:

AHIMSA = non-violence

SATYA = truthfulness
ASTEYA = non-stealing
BRAHMACHARYA = faithfulness
APARIGRAHA = non-greed

Yoga Lifestyle (Healthy Habits)

Swami Sachidananda —When you do something, do it with one hundred percent of the mind. Don't do it half way. Whatever you do, do it with full concentration. That is Yoga. It's not that you are just going into a corner, sitting with the spine erect and then doing some japa or some breathing and that is Yoga. My Yoga is everything. All that you do is Yoga. When you start doing something, do only that — one hundred percent that "Yogaha karmasu kaushalam, the Bhagavad Gita says. That means perfection in your every action is Yoga"

Aim of the Study

Yoga is now practiced widely for fitness and wellbeing in health clubs, community centres, yoga studios and schools. This popularity has created a need for well controlled research and clinical trials to evaluate its efficacy for improving general health and preventing disease, and to evaluate its role as an adjunctive or complementary therapy for the management of pain or chronic diseases. The majority of available yoga studies in the published literature have been conducted with adults, although studies of children and young adults have also been undertaken. The Aim of review study was to search the scientific literature, primarily seeking out systematic reviews, critical reviews and narrative reviews that have included studies with a focus on the health benefits of yoga in healthy individuals and clinical populations.

Relative Health Benefits of Yogic Exercise

Health Benefits of Exercise

Evidence for the use of exercise in the maintenance of optimal health and rehabilitation can be traced back to ancient cultures. As early as the ninth century B.C., the ancient Indian system of medicine (Ayurveda) recommended exercise and massage for the treatment of rheumatism and the Greek philosopher Hippocrates ('the father of medicine') acknowledged the virtues of exercise for physical and mental health in the 4th century B.C. In more recent times, a body of epidemiologic research has demonstrated inverse associations of varying strength between habitual exercise and the risk of several chronic diseases, including coronary heart disease, thromboembolic stroke, hypertension, Type 2 diabetes mellitus, osteoporosis, obesity, anxiety and depression. Additionally, a growing body of research during the last 20 years has provided 'convincing' evidence of an inverse association between physical activity and risk of colon cancer. There is also evidence of a 'probable' inverse association between physical activity and risk of other cancers, including post-menopausal breast and endometrial cancer and limited 'suggestive' evidence of a similar association between physical activity and lung, pancreatic and pre-menopausal breast cancer.

Aside from the important role it plays in the primary prevention of a range of chronic diseases, a physically active lifestyle can bring manifold health benefits to individuals who are carrying the burden of chronic disease. There is evidence that regular exercise is associated with physical and psychosocial health benefits in many chronic disease conditions and hence, keeping fit and healthy is now promoted by Government health departments as an essential element of self-care for boosting general wellbeing, improving mobility and easing of symptoms. A physically active lifestyle can have an important role in controlling or reducing the impact of a chronic disease, prolonging survival and enhancing overall health-related quality of life (secondary and tertiary prevention).

Health Benefits of Yoga

The relative health benefits of yoga in relation to disease risk and its role in the management of chronic diseases is less clearly established. Studies have investigated physiological responses evoked by yoga practice in comparison to those evoked by more conventional forms of exercise. The heart rate response to typical yoga sessions in healthy adults at normal ambient temperatures has been shown to be equivalent to low intensity walking exercise in some studies. Exercise at this intensity does not meet the currently recommended level of physical activity needed to promote health and cardiovascular fitness. However, other studies have provided conflicting evidence for healthy adults, with higher levels of cardiopulmonary stress being recorded during yoga sessions. Additionally, improvements in indices of cardio metabolic health have been observed in some (but not all) studies in healthy adults following programmes of yoga practice. A number of single group (uncontrolled) studies have reported improvements in maximum oxygen capacity, muscular strength, flexibility and blood cholesterol profile, as well as reduced physiological effort at sub-maximal exercise intensities and a lower level of perceived exertion at maximal exercise capacity. Such cardio metabolic adaptations suggest that yoga can provide a level of cardiopulmonary stress that is sufficient to achieve health benefits. Other benefits from yoga practice in healthy participants have been reported to be improved respiratory inspiratory and expiratory pressures and visual and auditory reaction times and attenuated weight gain in overweight individuals. While some studies have found no improvement in cardiopulmonary variables after programmes of yoga practice (e.g. Blumenthal and others), the actual level of physical exertion experienced during a session, and thus the stimulus for cardio metabolic adaptations, is likely to be strongly influenced by the type of yoga, the level of experience of the practitioner and the ambient temperature during the session. Yoga practice also involves a spiritual dimension and specific breathing exercises, not common to conventional forms of exercise, which may evoke other health benefits.

A recent report and comprehensive review of evidence and guidelines by the Canadian Agency for Drugs and Technologies in Health (CADTH) analyzed the quality of the evidence for yoga as a treatment for a few specific mental health disorders and provided references to studies and guidelines for each of these mental health areas. To summarize the conclusions of this evidence-review, the report found evidence supporting yoga as a treatment or adjunctive treatment for depression. However, depending the type and severity of depression, yoga may be recommended as a

second-line or third line treatment after medication and psychotherapeutics. In more severe depression where suicide is a major risk, yoga is best viewed as adjunctive to other treatments.

Role of Yoga in maintaining the Physical Health

Yoga plays a greater role in the management of physical - mental health. Yogic Intervention has been shown a significant effect on General Well Being;. Yoga might play role as a safety measure. Other study also performed in Toronto, Canada, clearly states that physically active individuals are less likely to develop hypertension than sedentary individuals. Reported in their study that there is a significant effect of Hatha Yogic Practices on Body weight of the Human subjects. Study conducted on patients with angina and coronary risk factors have showed a positive response in lipid profile after 4-14 weeks of yogic practices. A study held in Ontario, Canada also corroborate with our study and state that training increases HDL cholesterol and several studies have confirm this belief. Reported in his study that practice of Yoga cleansing (Shatkarma) lower down the serum glucose and serum cholesterol level of the Human subjects. In another study it has been seen that there is an Effect of Yogic Intervention on General Body weight of the subjects. On several parameters of general health factors practice of Yoga shows a positive impact towards Physical Health.

Role of Yoga in managing Common Disorder

Diabetes, Hypertension, Obesity and joints related problems are very common now days. There is a significant effect of Yogic intervention on serum glucose level on Diabetics. I find that people with rheumatoid arthritis who participated in a yoga program over a three-month period had greater handgrip strength compared with those who did not practice yoga. Observed in their study that there is a significant effect of Yogic Intervention in Gout Patients. It was observed that yoga practice has also significantly improved BP among people with hypertension. In another study it has been observed that there is a significant effect of Yogic intervention on Blood uric acid Level in Gout Patients.

Role of Yoga in balancing the Autonomic nervous system

Autonomic nervous system consists of two limbs; sympathetic nervous system and parasympathetic nervous system. Although individual asan and pranayam practices can selectively affect sympathetic or parasympathetic nervous system, the overall effect of yoga practice is to bring a state of parasympathetic dominance. There was also evidence of decreased autonomic arousal and psychophysiological relaxation, heart rate and respiratory rate reduction and improved somatic steadiness demonstrated by decreased errors in steadiness test.

Methodology

Most recent literature based on the effect of yoga and meditation on human health, particularly on psychological disorders (e.g., metal stress, anxiety, etc.), endocrine disorders (e.g., thyroidism, gigantism, etc.), metabolic disorders (e.g., diabetes, hyperlipidemia, cancers, etc.) and neurological disorders (e.g., Alzheimer's disease, etc.) was thoroughly reviewed. All the literature was accessed from four most popular search engines i.e. PubMed, Scopus, Web of Science and Google Scholar. The papers from the standard scientific journals were only included, in which the researches on clinical trials were mainly focused in the present review.

Conclusion

The public interest towards yoga and meditation is increasing day by day due to their beneficial effects in mental and physical health. Since the ancient time, yoga has been hypertension, obesity, anxiety, insomnia and aging The weight of available evidence suggests that yoga practice is safe and can bring many health benefits to practitioners, whether they are young, old, healthy, recovering from illness or looking for a therapeutic option to help them to manage a chronic condition. The linkage between the mind and body, particularly in reference to Yogic sciences, was widely accepted in the ancient wisdom and oriental learning, but later developed an artificial dichotomy between these two components. Modern medical science focuses, only on body as something which is apart from the mind. However psychosomatic linkages have now got its due importance by both modern medicine practitioners and therapists of Indian tradition. It has now been proved by scientific researches beyond doubt that yoga practices brings in better balance equilibrium in the autonomic function and metabolic rate at one hand and neurohumaral functions at the other hand, so that the state of both physical and mental well-being is achieved. This itself reflects that physiological and psychological conditionings go hand-in –hand and operate simultaneously.

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From 1. Q To E. Q. To S. Q. And Stability of Mind

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Abstract

We are born with innate spiritual intelligence. Spiritual Intelligence is a combination of intelligence and spirituality. Intelligence is the capacity of a person for logic, abstract thought, understanding, self-awareness, communication, learning, memory, planning and ability to solve problems. The era of adoring intelligence slowly evolved into the age of emotional intelligence. Several gaps in managing oneness as well as driving people towards standards of excellence resulted in emotional intelligence enlarging its scope for integration into a far superior tool, viz., Spiritual Intelligence. Perfection is not the destination, but a journey. In our life-journey, we moved from emotions to intelligence quotient (I.Q.) and to emotional intelligence and now we have to move to Spiritual Intelligence. Spirituality is the practical realization about our true nature, as the infinite and all-pervading soul. Its nature is existence, knowledge and bliss (sat, chit, anand). In spirituality, state of 'shunya' (not zero) is very significant. It is a state of perfect balance. It is a state of perfect balance, a state of Dhyana or Samadhi. There is neither negative nor positive thoughts, a state of thoughtlessness i.e. Shunya or a state of stable mind. Danah Zohar and Ian Marshall say that "Spiritual Intelligence" is the ability to find meaning, purpose, values in our life. Frances Vaughan, Psychologist, says "Spiritual Intelligence" is connected with the inner life of mind and spirit and its relationship to being in the world. Daniel Goleman coined the concept of emotional intelligence and Danah Zohar has coined the term Spiritual Quotient. I (2001) have attempted to give mathematical formula each for Emotional Quotient (E.Q.) and Spiritual Quotient (S.Q.).

Introduction

Intelligence quotient (I.Q.) is the measurement of intellectual potentialities. Each child is born with intellectual potentialities, which grow and develop with maturity and experience. The cognitive skills of thinking, perception, analysis, synthesis, and reasoning and are intelligence. Wilhelm Stern has given the simple arithmetic formula for intelligence quotient (I.Q.) as the ratio of Mental Age (MA) / Chronological Age (CA) x 100 (IQ=MA/CA x 100). I.Q. is a measure of our ability to solve logical problems.

Colleges Universities and management institutes equip those whom they teach with knowledge science Commerce technology and management. These organizations only sharpen the intelligence faculties (leftbrain) of individuals which control their intellectual abilities and deal with objective things. But for more precious things are centered on the right side of the brain, which deals with emotions and governs relationships with people (subjective in nature).

A group of individuals can be trained with equal capabilities in objective things by training them in technical matters, new processes and such other things, but training a group of individuals with equal managerial capabilities (which deal with managing emotions of oneself and dealing with those of others) may not possible. What distinguishes at the work place is the ability to handle people and not mere technical capabilities.

The end of the 20h century saw unparalleled scientific research in management and the findings reveal that 80% success at the work place depends on own ability to handle people while technical competence counts for only 20%. The science of ‘Emotional Intelligence’ which deals with abilities to handle people is of great significance to all of us, as it governs our success or failure. (A.R.K. Sarma, 2013)

In yesteryears, intelligence quotient (IQ) was adored as the major factor for achieving success. But when it comes to sustainable success and growth, ‘Emotional Intelligence’ plays a greater role than I,Q. Emotional Intelligence is the ability with which we understand our own emotions as well as others and deals with people positively for healthy relationships and achieving success.

Dr. Daniel Goleman a well known another, psychologist and science journalist defines : ‘Emotional Intelligence (EI) includes self mastery (self awareness and self regulation), plus social intelligence (empathy and social skills)

According to Hindu scriptures, there are seven ‘Yoga Chakras’ in our body which are the centres of ‘Prana’ (life force). These invisible vital points are part of our subtle body than the physical body. The heart chakra acts as a balance- point for other chakras. It controls our relationships and interactions with others. A balanced heart chakra indicates a person with abundance of “Emotional Intelligence’ (A.R.K. Sarma, 2013)

I have attempted to establish mathematical formula for Emotional Quotient (EQ.) For a successful career not only higher I.Q. but level of E.Q. also plays a greater part. Higher is the level of E.Q. greater is the achievement in life. Thus, I developed a mathematical formula for E.Q. as the product of wisdom (w) and IQ which can be expressed as E.Q. = w X IQ

Here in this formula wisdom (w) does not stand for any abstract knowledge, however, it is social intelligence of a person.

The era of adoring Intelligence slowly evolved into the age of Emotional Intelligence due to modern day complexities of intra personal and inter personal relationships. Still there are several gaps in managing oneself as well as driving people towards standards of excellence. As a result, “Emotional Intelligence’ is enlarging its scope for integration into far superior tools, namely “Spiritual Intelligence. (A.R.K. Sarma, 2014)

Perfection is not the destination, but only a journey. The more we walk on this journey to achieve perfection, the higher and effective ways we can discover. In our life-journey, we moved from emotions to intelligence quotient, from intelligence quotient to emotional intelligence and now we have to move from “Emotional Intelligence” to “Spiritual Intelligence”.

Each one of us is born with innate spiritual intelligence. “Spiritual Intelligence” is a combination of Spirituality’ and Intelligence’.

Intelligence is the capacity of a person for logic, abstract thought, understanding, self – awareness, communication, learning, memory, planning and ability to solve problems. Spirituality is the practical realization about our true nature as the infinite and all-pervading soul. Its nature is existence, knowledge and bliss (Sat- Chit – Anand). Individuals identify themselves with their physical body, mind and intellect and forget their true nature. The purpose of spiritual practices is to unite individuals with their true nature (GurvinderAhluwalia, 2014)

The philosophy of spiritual intelligence, develops through ‘Shunya’ (Not Zero), where there is no thought, no movement and no existence. This wonderful and unique concept given by India to the world not only in the field of mathematics, but in Spirituality as well. Developing spiritual Intelligence includes and transcends personal growth and reaches the highest level of cognitive, moral, emotional and interpersonal development.

Danah Zohar and Dr. Ian Marshal authors of “SQ,Connecting With Our Spiritual Intelligence’ say that “Spiritual Intelligence” is the ability to find meaning, purpose and values in our life, connecting our actions and lives to a wider, richer, meaning giving context. Although Zohar and Marshal coined the term Spiritual Quotient but they have not suggested any mathematical relationship for this quotient.

Deepak Chopra has given a formula for spiritual quotient in terms of Deed (D) and Ego (E). According to Dr. Chopra S.Q. = D/E. He (2006) writes : If Vedanta is right and there is only one reality, then all desires must follow the same mechanics. Desires arise and are fulfilled in our consciousness. Making yourself happy involves ------ I have a “Spiritual Quotient” Where S.Q=D/E (where D = Deeds and E = Ego). Now you can only have an S.Q. = Infinity when E= 0. If E is little even then SQ is approaching infinity (or one is close to be a ‘Great Master’ but not actually “Pure”. This appears to be very fascinating but it is highly abstract which cannot be measured experimentally, accurately and precisely. However, the formula has immense value to understand S.Q.

I too have discovered a mathematical relationship for S.Q. in the year 2001. I have used physiological parameters which can be measured, tested and verified accurately and precisely in laboratory conditions. According to this relationship S.Q. can be expressed as the ratio of parasympathetic dominance (PD) to sympathetic dominance (SD). Parasympathetic nervous system (PSNS) and sympathetic nervous system are the two parts of the autonomic nervous system (ANS) which is largely under hypothalamic control. Hypothalamus is situated very close to the sixth chakra. During the practise of meditation at sixth chakra or Ajna Chakra these centres are galvanised which has very positive effect on practitioners’ spiritual, emotional, psychological and physical well-being. This formula of S.Q. can be expressed as S.Q. = P.D. /S.D. If the value of S.Q. comes >1 (greater than one) it can be assumed that the person is moving towards self-realisation and it the value of S.Q. comes <1 (smaller than one) if can be predicted that the person is living under stressful conditions.

When human spirituality rises upward, above the line of zero disturbances, it is predominated by positive thinking, caring, enthusiasm, full of love for all, or in other wards we may say that this time the person is with his / her inner (Self/Source) (GurvinderAhluwalia, 2014.)

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Yoga: Implications And Relevance In Modern World

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Abstract

Yoga has a very long history and in terms of legacy it is as old as human civilization. The word Yoga is frequently referred in all the four Vedas. (Rig. Veda, Yajur Veda, SamVeda and Arthva Veda) Moksha is the ultimate goal of Yoga, which is well explained in upanishads. Teaching of Buddha (Arya Astangic Marg) and Jainism (five great vows) are the two pillars of yoga traditions. There is also description of yoga in shad Darshans (Sankhya yoga system). Maharshi Patanjali had codified the comprehensive system of yoga around second century B.C. Patanjali gave the concept of eight limbs of yoga called Astang yoga.

In contemporary times yoga like mobile phones have received global recognition. A great no. of studies demonstrate that meditation and yoga have been successfully employed in the treatment of mental disorders like anxiety, stress etc. whether as complimentary or main intervention. No doubt these efforts have yielded useful results but they fail to do justice to the original intention and context in which yoga as a system was developed. Thus, there is need to explore that dimension of yoga that is yoga as a psychological system as it was originally conceived in Indian Traditions. Yoga in fact is a way of life for self-transformation, to become a more refined human being and to develop one's spiritual potentialities. As a spiritual discipline it helps us to go beyond the current understanding of mind through psychology, to explore and expand the range of our psychical potentialities and awareness.

Keywords: Yoga, Yama, Niyama, Iswara Pranidhana, Asana, Pranayama, Self-transformation.

Introduction

There is a genuine interest in yoga across the world, yet few recognise the analogues relationship between the ‘inner life’ and the life on the physical plane. Most yoga teachers have extracted practices that are simple to understand and follow, from the philosophy and technique of yoga, presenting them to public as yoga teachings. Many of these practices, such as asana and pranayama, are purely physical in nature, and when separated from the essential teachings of yoga, reduce the system to nothing more than a physical culture comparable to other similar fitness system. The true purpose and meaning of yoga is lost in the process. The perception of yoga as primarily, or even exclusively, as asana or bodily poses is a modern western phenomenon with no precedent in yoga tradition. The yoga sutra attributed to Patanjali stands out as an authoritative treatise. Patanjali condenses the essential philosophy and technique of Yoga in 196 sutras, representing a marvel of systematic exposition. The text is in four sections.

1. The first addresses the question, ‘What is yoga’? Because Samadhi is the fundamental technique of yoga, it takes precedence and is referred to as Samadhi-pada.
2. The second addresses the philosophy of klesa – the impurities of mind – and serves to answer the question, ‘why should anyone practice yoga? It provides a masterful analysis of the human condition, and the challenges inherent there in.
3. In the third section Patanjali expounds on first five practices of yogic technique called Sadhana-pada, which are meant to prepare the aspirant physically, mentally, emotionally and ethically for the practice of higher yoga; and the three remaining practices of yogic technique called Vibhuti-pada, which culminates in Samadhi.
4. The final section, titled kaivalya pada deals with the nature of mind, mental perception, desire and the bondage that results; liberation and the freedom that follows it.

Objective of the Study

To cultivate awareness regarding the purpose and significance of yoga. Paper appreciates the fact that yoga is a voyage to ‘inner space’ of human beings.

Implications of Yoga

In sum yoga is the path of practice that helps unveil the truth enshrined within us through the only method available – yogic discipline. The important thing is to start somewhere and as soon as possible – now. When such a serious start is made, forces began to gather around the centre of endeavour and propel the aspirant forward. He becomes so absorbed in the pursuit of perfection that the time and distance ceases to matter. In the most important sutra, Patanjali captures the essence of yoga: yoga Chittavritti Nirodhah. It defines the essence of yoga in four words: meditation practices culminating in the attainment of state of consciousness free of active or discursive thought, and eventually the attainment of the state where consciousness is unaware of any object external to itself. Experimental knowledge rather than received wisdom is central to the profound nature of yoga. Practice is the first principle.

The practice of yoga is inextricably linked to Samkhya tradition and also draws from the Buddhist Sutras. Samkhya was the first philosophical system to emerge in the late Vedic period and has pervaded most subsequent traditions. Samkhya darshan provides the metaphysical

framework and is thus indispensable to the understanding the meaning and purpose of yoga. Yoga in essence, deals with the nature of mind and consciousness, and deals with the techniques of purification of the mind. Patanjali explains that the goal of the yoga can be attained by the grace of God: Iswar Pranidhanad. Patanjali refers to ‘Iswar’ as

the Lord who is a special self because he is not limited by time. Understanding this metaphor in its proper context is central to understanding the philosophy of yoga and its practice. In the theism of yoga, the idea of perfection: the God represents the permanent limits of human. To be human is to constantly strive to be God. All things are supported by another that is everything rests upon something else. Foundation is needed for anything to exist. Since God is the ultimate support of all things, God alone is free from this necessity. Yoga then also requires support. Patanjali very carefully outlines, the elements of support needed by aspirant, giving invaluable information on how to generate success in yoga.

The first yoga sutra says 'Now the exposition of yoga' implying that there must be something leading up to yoga in the form of necessary development of consciousness and personality. These prerequisites are known as Yama and Niyama. That is basic qualification for practicing yoga is Yama and Niyama. Yama and Niyama have nothing to with the idea of sin and virtue. Rather they are determined by a thoroughly pragmatic basis, that which strengthens our yoga practice should be observed and that which hinders should be avoided. Each one of these five Don'ts (Yama) and five Do's (Niyama) is the supporting foundation of yoga. It is not a matter of being good or bad, but of being wise and foolish. Yama means self-restraint in the sense of self mastery and consists of five elements. Niyama means observance which are also five.Ten pillars as given in Yoga Sutra.

1. Ahimsa: Non-violence, non-injury, harmlessness
2. Satya: Truthfulness, Honesty
3. Astya: Non stealing
4. Bramacharya: Control of all senses
5. Aparigraha: Non greed, non-selfishness, non-possessiveness
6. Shauch: Purity, cleanliness
7. Santosh: Contentment
8. Tap: Austerity, Practical (result producing) discipline
9. Swadhaya: Introspective self-study, spiritual self-study
10. Iswara pranidhan: offering of one's life to God

Ahimsa - denotes an attitude and mode of behavior towards all living creatures based on the recognition of the underlying unity of life.

Satya – is said to be speech and thought in conformity with what has been seen or inferred or heard on authority. Truthfulness is absolutely necessary for the unfoldment of intuition. There is nothing which clouds the intuition. and practically stops its functioning as much as untruthfulness in all its forms.

Astaya - This means abstinence from stealing which Vyas defines as 'the improper appropriation to oneself of other things.

Brahamacharya – This is restraint of senses. Basically, it is the conservation and mastery of all energy systems and powers of our being.

Aparigraha - Being possessors by possessions is a great misery and the belief that happiness comes from external things is trulya great folly. Aparigraha clears the inner eye and let us see our true "faces".

All above vows if not conditioned by class, place, time and extending to all stages, constitute the greet vow. These vows are self-sufficient as they depend on nothing else and because they cannot be mutated into something else.

Shaucha - It means purity and cleanliness within the context of attaining unobstructed clarity of consciousness. Physical cleanliness is important for it eliminates bodily toxins and prevents disease. Inner purification is important for it eliminates the mental toxins and prevents disease or inner ills. For the yogi, the most important external aspect of shaucha is purity of diet. This is because the food we eat determines the vibrations of our body and our mind. Remaining rules for regulating life are contentment i.e., one should be satisfied with whatever one has, Penance – by practicing austerities, sva-adhyaya – regular study of sacred books and Iswar pranidhana – meditation on God. Besides these other steps include bodily postures (asana), breath control (pranyama), withdrawal of senses from objects (pratyahara), fixing a mind on an object (dharana), meditation (dhyana), and samadhi.

Thus, the eight limbs of yoga are – Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi.

The practice of the first five limbs leads to last three, which ends up in samadhi.

Relevance of Yoga

Yoga is a practice that has been around for thousands of years, originating in ancient India. Today, it has become a global phenomenon, with millions of people practicing it all over the world. The relevance of yoga in the modern world is not limited to any specific region or country but has a universal appeal and significance that transcends borders and cultures. One of the main reasons for the popularity of yoga worldwide is its holistic approach to health and wellbeing. The practice of yoga involves physical postures (asanas), breath control (pranayama), and meditation. The combination of these three elements helps to promote physical, mental, and spiritual health. The physical benefits of yoga are well-known and documented. Practicing yoga can improve flexibility, strength, and balance, leading to better posture and reduced risk of injury. Additionally, yoga has been found to be effective in managing chronic pain and reducing inflammation. Yoga is also known for its mental health benefits. Research has shown that practicing yoga can help reduce stress, anxiety, and depression. It can also improve mental clarity, concentration, and memory. The meditation aspect of yoga is particularly helpful in reducing stress and promoting relaxation. Furthermore, yoga is not limited to any specific age group or demography. People of all ages and backgrounds can benefit from the practice of yoga. In fact, there are many programs and classes specifically designed for children, seniors, and individuals with disabilities. Yoga has become a global phenomenon, with millions of practitioners all over the world. In India, yoga is an integral part of the culture and has been practiced for thousands of years. In recent years, there has been a renewed

interest in yoga in India, with many people embracing it as a way to promote health and well-being. Outside of India, yoga has gained immense popularity in countries like the United States, Canada, Europe, and Australia. In fact, there are now yoga studios and classes in almost every major city in the world. This global reach has helped to spread the benefits of yoga far and wide. In addition to its physical and mental health benefits, yoga has practical applications in the modern world. Many companies have started offering yoga classes to their employees as a way to reduce stress and improve productivity. Yoga has also become a popular tool for athletes and fitness enthusiasts to improve their performance. Yoga also has a role to play in promoting social and environmental awareness. Many yoga practitioners have adopted a more mindful and sustainable lifestyle, embracing practices such as vegetarianism and reducing their carbon footprint. In conclusion, yoga is a practice that has become relevant to people all over the world. Its physical, mental, and spiritual benefits have made it a popular choice for promoting health and well-being. As more people continue to discover the benefits of yoga, it is likely to become an even more important part of our daily lives, connecting people from all over the world in a shared pursuit of health and happiness.

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Quantum Physics And Spirituality

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Abstract

The term field in quantum physics represents invisible moving forces that influence the physical world. Spirituality represents invisible moving forces that influence the physical world. Yoga arrived in the West when people were starting to explore quantum physics. Prior to this time, western people did not have a language to understand the energy and consciousness aspects of yoga. The discovery of quantum physics in last few decades has redefined the way we view the universe and has forever changed the face of science. Amazingly , a number of theories proposed in quantum physics resemble key concepts from ancient spiritual systems that provide us with parallels as to the way reality is represented and understood.

Keywords : Quantum Physics, Spirituality, Consciousness, Universe,Yoga, Energy.

Introduction

Almost over 100 years ago, Max Planck showed that some of the fundamental problems in physics can be solved by assuming that light waves were not just smooth oscillating waves as Faraday, Maxwell, and others had thought, but came in packets of energy termed *quanta*. This gave rise to the concept of duality. If light waves can behave like particles then particles should also behave like waves and hence started the quest to detect wave nature of particles.Wave nature was detected for electron showing .

These small particles in nature are not little solid bodies or corpuscles with rigid edges, the way Newton, Boyle, and Locke thought in the seventeenth century. They are more like clouds of tendencies or propensities. This led to the beginning of a new branch in physics . At that time no one knew that this new branch will change all the perspective of scientists about Universe. There was this new tool to understand the behaviour of unseen microscopic world.

This branch known as Quantum Physics is the most weirdest fundamental branch of Physics ever studied or researched, where we have some bizarre form of concepts like how can something disappear or reappear someplace else, how can we be two places at the same time, but ironically, that‘s what electrons do all the time. A gateway to subatomic world was opened by Quantum Physics that gave rise to modern day electronics, cryptography, quantum computing. So basically without Quantum Physics there would be no transistor, and hence no personal computer; no laser absolutely nothing. In essence, Quantum Physics is the study of matter and energy at a nanoscopic scale, beginning within sub atomic particles such as nuclei to atoms and molecules.

We are living in the quantum world of probabilities where everything seems to be possible. It is helping us to understand the fabric of Nature in terms of fields of elementary particles, which are not particles in physical sense but energies of different values. These different energy packets have been characterized and identified as elementary particles that are the building blocks of universe ,hence giving rise to sub-branch of physics known as Quantum Field Theory.

Yoga arrived in the West when people were starting to explore quantum physics. Prior to this time, western people did not have a language to understand the energy and consciousness aspects of yoga.

In the early 20th century European and American reception of yoga have revealed the significance of esoteric movements like the Theosophical Society in creating the modern, global phenomenon of yoga. A system of pedagogy called raja yoga was for several decades among the foremost preoccupations of one of the main global Theosophical movements, the Universal Brotherhood. Under its leader Katherine Tingley, the Universal Brotherhood strove to develop and popularize raja yoga as the solution to the social and spiritual problems of

humanity.

In 1913, Yogananda had not yet embarked on his US lecture tour, BKS Iyengar had not yet been born and Pierre Bernard (known as “Oom the omnipotent”) had just started teaching. However, a body of literature on the subject had recently been published in Europe and America. Regarding Yogananda see Shreena Gandhi (2012) and David J.Neumann (2019). On Iyengar see Joan White and Frederick M. Smith (2013). Regarding Bernard see Joseph Laycock (2013) .

The spiritual leader that influenced the West by his scientific ways of teaching Kriya Yoga, Paramahansa Yogananda (born Mukunda Lal Ghosh; January 5, 1893 – March 7, 1952) was an Indian Hindu monk, yogi and guru. He introduced millions to the teachings of meditation and Kriya yoga through his organization Fellowships (SRF) Los Angeles of USA / Yogoda Satsanga Society (YSS) of India. He immigrated to America at the age of 27 to prove the unity between Eastern and Western religions and to preach a balance between Western material growth and Indian spirituality. His long-standing influence in the American yoga movement, and especially the yoga culture of Los Angeles, led him to be considered by yoga experts as the "Father of Yoga in the West." Yogananda was the first major Indian teacher to settle in America, and the first prominent Indian to be hosted in the White House (by President Calvin Coolidge in 1927).

He published his Autobiography of a Yogi in 1946 to critical and commercial acclaim. It has sold over four million copies, with Harper San Francisco listing it as one of the "100 best spiritual books of the 20th Century". He remains a leading figure in Western spirituality. A biographer of Yogananda, Phillip Goldberg, considers him "the best known and most beloved of all Indian spiritual teachers who have come to the West".

Interestingly, many of the theories proposed in quantum physics resemble key concepts from ancient spiritual systems, providing us with parallels as to the way reality is represented and understood. In ancient spiritual traditions, especially traditions such as yoga and kriya yoga, we find complete descriptions of the nature of reality and the fundamental principles and universal laws that govern creation. We get explanations about nature of our relationship as conscious beings to the world in which we exist. Some spiritual traditions include descriptions of extraordinary concepts such as parallel dimensions, subtle realities that exist beyond the material world, and fundamental formative fields. They also include notions about the essential role of consciousness within creation. Many of these concepts do not fit into the paradigm of classical physics – the physics that describes our everyday reality, governed mostly by mechanistic laws such as Newton's laws of motion, gravity and energy preservation.

This relationship goes both ways – not only can the discoveries of quantum physics be seen to validate the concepts of spiritual systems, but the world view of spiritual systems can provide a completely different framework that can allow a deeper understanding and explanation of the extraordinary concepts of the quantum world, even providing answers to some of the greatest scientific challenges of today.

Unification and differentiation

In the past decade the progress in theoretical physics has led to a progressively more unified understanding of the laws of nature and of theories which point towards a fundamental unity behind the observable reality. The universe appears to us as being extraordinarily complex and diverse, but it is fundamentally unified. These theories identify a single universal, unified field at the basis of all forms and phenomena in the universe.

The concept of unity beneath life's diversity, is also a central theme of every major spiritual tradition. Whereas our everyday experience tells us that we are separate from one another and distinct from all the forms of reality that we interact with, altered states of consciousness, such as those experienced in profound meditative states reveal that at some fundamental level, we are united with each other and with all of reality. The deep meditation allows one to withdraw from the outwardly directed perception of the world through the senses, to experience deeper levels of mind and stillness, to move even beyond thought and mental activity and to experience the universal unity that lies at the basis of existence. Hence, we can have direct access to the unified field as theorized by quantum physicists.

Another aspect in the quantum world that is in line with the idea of unity within diversity can be seen in quantum entanglement. According to classical physics results nothing can travel faster than the speed of light. Whereas in the quantum world, two particles can be connected in such a way that information can be shared instantly between them, regardless of distance. This is known as quantum entanglement. When two particles become entangled, they remain connected irrespective of vast distances between them.

Entanglement can also occur between millions of particles and is thought to take place throughout nature, and within the atoms and molecules in living species. If hundreds of particles become entangled, they act as one unified object. These so-called many-body entangled systems describe a network of entanglement. If we also consider the big bang theory of creation, which states that the entire universe emerged from a single point of super condensed energy, then literally everything in existence has one, single united source.

Here we can draw a parallel to a spiritual vision of reality – the existence of an underlying fabric or network of connections, that unites all the apparently separate aspects of reality. A central tenet of spirituality is that of non-duality, the recognition that underlying the multiplicity and diversity of experience there is a single, infinite and indivisible reality, the nature of which is pure consciousness. All the apparently separate aspects of creation are ultimately an expression of that one Ultimate Reality.

Observation

Quantum physics relates to the unusual properties of subatomic elements. Going to subatomic level we see that the building blocks of matter are not so solid and well defined as we might expect. Subatomic elements exist as fields of probability rather than as defined particles located in known space and time. Interestingly, we find that it is the process of observation or measurement of that quantum state that defines that state – so until it is measured the particle exists in a state of superimposition, where it exists in many states simultaneously. Before it is observed, the particle of matter is not actually a particle, but an abstract probability wave – it does not have a real physical state but exists only as the possible outcome of a future measurement. When the measurement takes place, the quantum probability wave collapses to a localised particle, and becomes an object of conscious experience.

This is an interpretation of quantum behaviour known as the Copenhagen interpretation. It reveals an important aspect – that there is a relationship between the act of observation of a conscious observer and the existence of physical matter. If consciousness is so inextricably linked to matter, then from the scientific perspective, we can no longer ignore its influence.

The role of the observer in spirituality is a central aspect. Upon deep enquiry into the nature of our outer experience with the empirical world and with the inner experience of our own being, fundamental questions arise: 'Who is the one that is aware of this experience now?' 'Who is the subject of our perception and observation of our inner and outer reality?' 'What is the observed and who is the observer?'

In yogic philosophy, the waking experience involves three components, the Subject – the one that observes, the Object – that which is observed, and the Act of observation or perception. These appear to be separate and distinct, but this is only because we see them through the prism of the mind. In reality, they are all one – the Subject, Object and Act of observation are simply the consciousness fixing itself on the different components that constitute reality. In this context, consciousness is observing the object, but it is also observing the subject – the one who perceives.

In a deep meditative state, this threefold structure of the waking experience — the observer, the observed and the process of observation — are reunited into one indivisible wholeness of pure consciousness.

Parallel Worlds and Dimensions

There is another interpretation of the particle-wave duality of nature called the Many Worlds Interpretation. This theory states that the collapse of the probability wave when it is observed, never really happens, and that the wave function is the only true nature of reality. When the wave is observed we become aware of one reality, however, all other possibilities continue to exist as alternative worlds. Many, perhaps infinite worlds exist, all with different quantum outcomes. And this occurs in every moment – so frequently that the rate is practically infinite. In this vision, the wave function is the complete picture of reality and our measurement i.e., our conscious experience of the observable world, is just a fraction of it.

In addition to multiple worlds, each world contains multiple dimensions. String theory, a leading theory in quantum physics, proposes that a particle is actually made of tiny strings of vibrating energy. The way a string vibrates determines what type of particle it is. However, for this theory to be true, the existence of multiple dimensions is required, because the strings need more than just three dimensions to express all their vibrational patterns. For the mathematics of string theory to be consistent, there must be ten different dimensions of space-time!

These notions are not unlike what we find in Hindu cosmology, for example, that there are innumerable universes besides this one, and that the Supreme Universal Consciousness manifests in each and every one. More than this, each universe is made up of multiple dimensions of reality, so that existence is not just made up of the physical world that we perceive through the senses, but there are other subtle worlds, made of vibrational frequencies that are outside the range of the senses.

In Vedic philosophy the description of the Universe consists of three main worlds: the physical, the astral and the causal world, each of which is considered to be a distinct plane of existence defined by their vibrational frequency. The physical world is the dense world of solid reality that is perceived by the five senses. The astral world is the world of thought and subtle forms, and the causal world is the blissful realm of truth. The subtle realms of the astral and the causal worlds are further divided into different worlds, or planes of existence known as the upper or paradisiacal worlds, and the lower or infernal worlds. The yogic system also includes specific techniques that allow the practitioner to explore these subtle dimensions. With sufficient training, the yogi can perform conscious, astral projections, allowing a direct experience of the subtle worlds.

Energy

One highly significant revelation of the exploration into the subatomic world is that everything is made up of energy. At the most fundamental level there are quantum fields, and everything emerges from both fluctuations within and / or interactions between those fields.

We find the same essential notion expressed as a fundamental principle in various spiritual systems such as the Western esoteric tradition of Hermeticism, and the ancient system of Yogaic philosophy . The traditional Yogic vision says that the entire manifestation is made up of energy in vibration, from the lowest vibration that characterises all phenomena that appear in the physical universe, to the highest frequencies specific to the world of higher beings

This vibratory phenomenon is defined in Yoga in a universal principle called the Law of Resonance. This law describes the vibratory nature of existence, that all objects, beings, and phenomena are defined by their frequency of vibration. From this perspective everything can be understood in terms of the interactions between systems of resonance. Even complex phenomena such as human emotion, knowledge or states of consciousness can be defined and understood as specific resonances. All the various forms of yogic practice then, from bodily postures to breathing techniques and forms of meditation, are in reality methods of tuning into specific frequencies of vibration that exist in the universe.

There are also many enigmatic aspects of reality that have not yet been fully included in current scientific models. In order to explain the functioning of the universe it is necessary to take into account the presence of so-called dark matter and dark energy as well as anti-particles or anti-matter.

According to the standard model of cosmology, the composition of the universe is made up of only around 5% ordinary matter, the rest being made up of 27% dark matter, and 68% dark energy. This tells us that there are still many mysteries to be discovered and included in our quest to complete the current models of reality. In the Yogic vision, these mysterious facets of creation, yet unexplainable by modern science, can be understood in terms of resonance, as energies with specific, enigmatic, vibrational frequencies.

Conclusion

The parallels between quantum physics and the concepts found in the wise visions of universal spirituality outlined in this article provide a glimpse into the enigmatic way in which science and spirituality can be united and support each other. One should approach spiritual practice in a scientific way, that is, to understand the theory expressed as principles and mechanisms, to use known methods to experiment with the specific concepts, and to validate these truths and realities via direct experience. The models of reality offered by both modern science, in particular quantum physics, combined with those offered by ancient spiritual traditions, as well as the direct experience of these models through individual and collective spiritual practice, can greatly assist in bringing us to a deeper, more essential understanding of reality and of ourselves.

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Health and Yoga: The Science of Yoga and How It Affects Human Body

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Abstract

The practice of yoga has gained widespread recognition for its profound impact on health and well-being. Rooted in ancient Indian traditions, yoga combines physical postures, breathing exercises, meditation, and ethical principles to create a comprehensive system for wellness. This article explores the intersection of health and yoga, highlighting the benefits of yoga practice for physical, mental, and emotional well-being.Numerous studies have demonstrated the wide-ranging benefits of yoga on physical health. Regular yoga practice improves flexibility, strength, and balance, reducing the risk of injuries and enhancing overall physical fitness. Yoga also promotes cardiovascular fitness, aids in weight management, and alleviates chronic pain and joint issues. In addition to physical health, yoga plays a crucial role in promoting mental and emotional well-being. It reduces stress, enhances relaxation, and boosts mental clarity and focus. Yoga can help manage anxiety and depression, cultivating mindfulness and emotional balance. Moreover, yoga has been found to be beneficial for specific health conditions such as back pain, heart health, and sleep disorders.

While yoga is generally safe, it is important to follow precautions and safety guidelines to prevent injuries. Consulting with a healthcare professional, practising with awareness and mindfulness, and seeking guidance from qualified instructors are essential for a safe and beneficial yoga practice. Overall, the practice of yoga offers a holistic approach to health, integrating the body, mind, and spirit. Its wide-ranging benefits make it a valuable tool for individuals seeking to improve their overall well-being and lead a healthier, more balanced life.

Keywords: Physical Fitness, Mental Well-Being, Precautions, Emotional Balance, Flexibility.

The Intersection of Health and Yoga: An Introduction

The practice of yoga has gained widespread recognition for its profound impact on health and well-being. The intersection of health and yoga lies in the holistic approach that yoga takes towards improving physical, mental, and emotional health. Rooted in ancient Indian traditions, yoga combines physical postures, breathing exercises, meditation, and ethical principles to create a comprehensive system for wellness. Yoga offers a unique pathway to achieve optimal health and harmony by integrating the body, mind, and spirit.

Numerous studies have highlighted the wide-ranging benefits of yoga practice on both physical and mental health. Regular yoga practice has been shown to enhance flexibility, strength, and balance, leading to improved physical fitness and a reduced risk of injuries (Telles et al., 2016). Additionally, yoga promotes stress reduction and relaxation, helping to alleviate anxiety and depression symptoms (Damodaran et al., 2002). It also cultivates mindfulness and emotional balance, enhancing mental clarity and overall well-being (Chittaroopa et al., 2019). Furthermore, yoga has been found to have positive effects on specific health conditions such as back pain, heart health, and sleep disorders. Overall, the practice of yoga, deeply rooted in Indian traditions, offers a multitude of benefits that contribute to a healthier and more balanced life.

Understanding Yoga

Yoga traces its origins back thousands of years to ancient India. Its roots can be found in various ancient texts, such as the Yoga Sutras of Patanjali and the Bhagavad Gita. Yoga is deeply rooted in philosophy and spirituality, encompassing the belief that the body, mind, and spirit are interconnected. The philosophical foundation of yoga includes concepts such as the Eight Limbs of Yoga, which provide guidance on ethical principles, self-discipline, breath control, meditation, and attaining a state of union or enlightenment (Feuerstein, 2003).

Yoga is guided by several key principles and concepts that form the basis of its practice. One fundamental principle is the belief in the unity of the individual's physical, mental, and spiritual aspects. Another core concept is the practice of mindfulness and being fully present in the current moment. Yoga emphasizes the importance of breath control, known as pranayama, which helps to harmonize the body and mind. The concept of ahimsa, or non-violence, is also central to yoga, promoting compassion and respect for oneself and others. Additionally, yoga encourages self-inquiry, self-acceptance, and the continuous exploration of personal growth (Satchidananda, 2012).

Yoga encompasses a diverse range of practices and styles, each with its own emphasis and approach. Some popular types of yoga include Hatha Yoga, which focuses on physical postures and breath control, and Vinyasa Yoga, which links movement with breath in a flowing sequence. Ashtanga Yoga follows a set series of dynamic poses, while Iyengar Yoga emphasizes precision and alignment using props. Other styles include Kundalini Yoga, known for its emphasis on energy awakening, and Yin Yoga, which involves holding poses for longer durations to target deep connective tissues. The availability of different types and styles allows individuals to find a yoga practice that suits their needs, preferences, and goals (Swami Satyananda Saraswati, 2003).

Yoga for Physical Health

Yoga, rooted in ancient Indian traditions, offers a multitude of benefits for physical health. One of the key advantages is improved flexibility and strength (Telles et al., 2013). The various yoga poses, known as asanas, gently stretch and strengthen muscles, tendons, and ligaments, leading to increased flexibility and range of motion. Regular

practice can help prevent injuries, improve posture, and enhance overall physical performance. In addition to flexibility, yoga also promotes muscular strength. Holding yoga poses and flowing through sequences requires the engagement of different muscle groups, contributing to muscle tone and strength development (Birdee et al., 2009).

Back pain is a common ailment that affects many individuals. Fortunately, yoga can be an effective tool for back pain relief. The gentle stretching and strengthening exercises in yoga help alleviate tension, improve posture, and increase spinal flexibility, reducing the risk of back pain and promoting a healthy back. For those suffering from arthritis, yoga can provide much-needed relief. The low-impact nature of yoga combined with its focus on gentle movements and controlled breathing can help reduce joint pain, increase joint mobility, and improve overall joint function. Regular yoga practice can enhance the quality of life for individuals living with arthritis. From Yoga also offers significant benefits for heart health. An article by Hopkins media, shows that practicing yoga regularly can lower blood pressure, reduce cholesterol levels, and improve cardiovascular fitness. The combination of physical movement, deep breathing, and relaxation techniques in yoga contributes to a healthier heart and a reduced risk of heart disease.

Mental and Emotional Well-being through Yoga

Yoga, deeply rooted in Indian traditions, extends its benefits beyond physical health, playing a crucial role in promoting mental and emotional well-being (Saoji et al., 2018). One of its primary advantages is stress reduction and relaxation. The combination of deep breathing, meditation, and gentle movements in yoga activates the body's relaxation response, helping to alleviate stress, anxiety, and tension. Regular practice can lead to a calmer mind, improved mood, and a greater sense of overall well-being.

In addition to stress reduction, yoga is effective in boosting mental clarity and focus. The practice of yoga involves paying attention to the body, breathing, and the present moment, which helps cultivate mindfulness and concentration. Through mindful movement and breath awareness, yoga enhances cognitive function, memory, and attention span. This increased mental clarity and focus can have a positive impact on productivity, decision-making, and overall mental performance.

Furthermore, yoga offers valuable tools for managing anxiety and depression. The combination of physical activity, breath control, and meditation in yoga helps regulate the nervous system, reducing anxiety symptoms and promoting a sense of calmness. Yoga's emphasis on self-acceptance, self-compassion, and non-judgmental awareness can be particularly beneficial for individuals dealing with depression. It provides a safe and nurturing space to explore and release emotions, fostering a greater sense of emotional balance and well-being.

Precautions and Guidelines

While yoga is generally a safe practice for most individuals, it is important to follow certain precautions and safety guidelines to prevent injuries and ensure a positive experience. Consulting with a healthcare professional before starting a yoga practice is advisable, especially for individuals with underlying health conditions or injuries (Telles et al., 2012). Understanding and respecting one's physical limitations is crucial, as pushing beyond one's capabilities can lead to strain or injury. Practitioners should avoid overexertion and listen to their bodies, taking breaks or modifying poses as needed.

Additionally, practising yoga with awareness and mindfulness is essential for safety. Being present at the moment and focusing on proper alignment and technique can minimize the risk of injury. It is important to progress gradually, starting with beginner-level classes and gradually advancing as strength, flexibility, and experience increase. Finally, practising yoga with a qualified instructor or attending classes led by certified teachers ensures proper guidance and supervision, reducing the likelihood of incorrect form or technique. By adhering to these precautions and safety guidelines, individuals can enjoy a safe and beneficial yoga practice.

Conclusion

Yoga offers a holistic approach to health and well-being, integrating the body, mind, and spirit. Its benefits encompass physical fitness, mental clarity, emotional balance, and overall wellness. Through regular practice, yoga enhances flexibility, strength, and cardiovascular fitness, and helps manage chronic pain and joint issues. It also promotes stress reduction, mental focus, anxiety and depression management, and cultivates mindfulness. By incorporating yoga into a healthy lifestyle and following precautions, individuals can embark on a transformative journey of self-care and achieve a harmonious state of being.

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Altered Lifestyle And Alternative Strategies To Manage Deterioration of Human Health and Heritage Due to Air Pollutants

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The human vulnerabilities to air pollutants result in an alarming figure of seven million people that die prematurely every year. The harmful effects caused to human body to the polluted air depend upon the type and concentration of pollutants present in it. Man cannot survive without fresh air, it becomes our bitter enemy as and when it gets polluted, since it causes a number of diseases in our body. The pollutants primarily may cause respiratory and skin diseases. High concentrations of toxic gases like carbon monoxide in indoor pollution and methyl isocyanate released accidently during Bhopal Gas tragedy resulted in huge causalities in 1984. Gaseous air pollutants do not exist singly in the atmosphere. Therefore, researches on interactive effects of air pollutants must be encouraged to understand the role of air pollutants on human health. Responses of major primary and secondary air pollutants such as sulfur dioxide (SO_2), carbon dioxide (CO_2), nitrogen dioxide (NO_2), PAN, ozone (O_3) and aerosols have been evaluated. The concentration of pollutants is increasing due to massive industrialization, thermal power plants, and increase in number of vehicles plying on roads. While comprehensive data on pollutant emissions are analysed regularly in different cities yet the monitoring stations are far from required.Not only gaseous pollutants but also biodeteriogens like Fungi, Bacteria and aeroallergens like pollen grains of plants can cause harm to human life.

The COVID-19 pandemic has influenced air pollution because of altered human behaviour and changes in lifestyle are required. With the spread of Coronavirus the world was brought to a halt in March and April 2020, the pollution levels went down, breaking a record of several years and also of several decades in some cities. The lockdown in several countries all over the world resulted into no or very restricted activities recorded drastic change in quality of air and water. However, large causalities were recorded due to notorious zoonotic Corona virus.

Cultural heritage assets are exposed to weather and submitted to influence of environmental parameters. Physicals, chemicals and biological factors interact with constitutive materials inducing changes both in its compositional and structural characteristics. The matter transformation may occur due to the metabolic activity connected with the growth of living organisms. This activity is needed to maintain in equilibrium the “matter transformation cycles” and contribute to very important aspect of “life” such as to transform hard rocks in soft soils (pedogenesis) or to reduce the complex biological structures into simpler components. Micro as well asmacroorganisms can find a suitable habitat for their growth either on monumental buildings and archaeological remains. The living species dwelling on these materials are ranging from microscopical bacteria to the higher plants and animals. The intensity of the damage caused is correlated with: type and dimension of the organisms involved; kind of material and state of its conservation; environmental conditions, micro-climatic exposure; level and types of air pollutants.

Our heritage is of two types, ‘Tangible Cultural Heritage’ refers to physical artefacts produced, maintained and transmitted inter-generationally in a society. It includes artistic creations, built heritage such as buildings and monuments, and other physical or tangible products of human creativity that are invested with cultural significance in a society. ‘Intangible Cultural Heritage’ indicates ‘the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their Cultural Heritage’ (UNESCO, 2003). Examples of intangible heritage are oral traditions, performing arts, local knowledge, and traditional skills.

Tangible and intangible heritage require different approaches for preservation and safeguarding, which has been one of the main motivations driving the conception and ratification of the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage. The Convention stipulates the interdependence between intangible Cultural Heritage, and tangible cultural and natural heritage, and acknowledges the role of intangible Cultural Heritage as a source of cultural diversity and a driver of sustainable development. Recognizing the value of people for the expression and transmission of intangible Cultural Heritage, UNESCO spearheaded the recognition and promotion of living human treasures, ‘persons who possess to a very high degree the knowledge and skills required for performing or recreating specific elements of the intangible Cultural Heritage’. Our celebrations like Holi and Deepawali are changing their original form due to increasing pollution problems.

The National Museum has a rich collection of Chitra-pothis' - palm-leaf manuscripts of Odisha. The exquisite and colourful folios belong to BhagavataPurana, Ramayana, Mahabharata and Devi Mahatmya. Palm-leaf were used for writing even in the 18th and 19th centuries, as evident from the collection. We can learn from a beautiful manuscript dated the 18th century is **Rasamanjari** (A bouquet of delights), regarded as one of the great classics of Sanskrit literature created by Bhanudatta’s belonging to the 15th century. The first folio of the manuscript contains a verse in honour of Lord Shiva, who can be seen trying to save his left female half, beloved Parvati. The painting is rich and colourful with strong

elements of stylization. We should keep our body fit for a long time by regular exercise, yoga and making it immune for disease causing agents like our Gods and Goddesses.

Regular physical exercise is needed and we should keep our minds mentally free from stress. It is to be practised by all of us. A regular meditation exercise is required along with yoga. Use of regular walking, cycling or swimming and joining laughing clubs can do wonders. We should reduce the use of mobile and electronic gadgets and try to spend good times with family and friends.

Scientists have found that besides routine food crops like cereals and pulses the importance of other crops like millets and pseudo-cerealswas realized when crop failures were noticed. The famine conditions were recorded in Ireland (due to failure of potato during 1845-49) and Great Bengal famine (due to loss of paddy in 1770). Great Botanist William Roxburgh had suggested the road side plantation of fishtail palm (*Caryotaurens* L.) to the Governor of Bengal.As the stem pith and seeds are edible and can save the man from death due to hunger. We consume lot of coconut but leaves of fishtail act as fodder and in scarcity we can eat the stem part of fish tail palm was not known to many of us. In Indian villages people consume dried flowers of *Madhucaindica*, fruits of ber (*Zizyphus* spp.), date (*Phoenix dactylifera*L.), tamrind (*Tamarindusindica* L.), plum and peach (*Prunus* spp.) etc. A large number of spices are obtained from trees and seeds of dry fruits like charoli (*Buchnanialanzan*Spreng), chilgoza (*Pinusgirardiana*Wall. ex D. Don), walnut (*Juglansregia* L.) and almond (*Prunusamygdalus*Batsch.) and certain others are nutritious and relished by one and all. There is a need to change our food habits besides clean air and clean water to keep ourselves healthy we should include fruits, vegetables, mushrooms and micronutrients like Ca, Fe, Zn and vitamins. Healthy foods should be given priority over fast junk food. Regular utilization of seasonal fruits can save us against air pollutants. Strategies will be suggested to reduce the ill effects of air pollutants and keep ourselves healthy by the inclusion of Ayurveda system of medicine and consumption of medicinal plants like *Tinospora, Trigonella*, Turmeric, Shatavari and Tulsiin day to day life.

Effect of Yoga Practices on PPBS of Type 2 Diabetics

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Abstract

T2DM is a chronic condition that impact on procedure where human body process blood sugar. With T2DM, the body either doesn't generate sufficient insulin or it resists insulin to be produced. There are enough medical treatments for T2DM with some dietary restriction to maintain insulin level in the body. But these treatments i.e. diabetic pills or insulin injection is a lifelong method to sustain the insulin level. There may be some side effects of them and it is very bothersome process and sometime painful too. So there is also a second door to overcome from the diabetic issue which is popularly known as Yoga Practices. There are several yogic exercises and asanas that can help type 2 diabetic persons to maintain healthy level on insulin in the body and can be effective to reduce the quantity of daily doses of diabetic pills. With the modification of daily routine and food habits, not only type 2 diabetes can be control but a great health can be achieved also. To find the effect of Yoga practices on type 2 diabetic persons, a three month research was conducted with a group of 36 peoples having type 2 diabetic history from more than 5 years. People with age group from 35 years to 55 years were selected to perform daily yoga exercises. All 70 people were split into two groups. 35 people of group A (Yoga Group) performed daily one hour yoga exercises and other 35 people of group B (Control Group) didn't perform any yoga or aerobic exercise, they followed their routine as previous. Diabetic patients of both groups were advised to follow their prescribed medicine. Data collected from the statistical analysis of the result garnered in the study, it may be said that yoga helps in decreasing blood sugar level within limit. It can be accepted that yoga practices on routine basis may be considered as an add-on to medical treatment to maintain biochemical parameters within limits. This therapy also helps to reduce the doses of prescribed drug and garnish the physical and mental health.

Keywords: Type 2 Diabetes Mellitus (T2DM), Post Prandial Blood Glucose (PPBS), Standard Deviation (SD),Standard Error of the Mean (SEM).

Introduction

Diabetes Mellitus is known as abnormal blood sugar level in the body. After having meal, our blood sugar level goes up and body triggers the hormonal insulin, provided by pancreas. Insulin procreates muscles and fat cells to exclude glucose from the blood. If our body fails to regulate the blood glucose level, this condition is known as diabetes mellitus. In the country like India, the diffusion of diabetes has risen from 7.1% in 2009 to 8.9% in 2019. More than 40% of diabetics are not aware about their condition and remain undiagnosed in India. Because of high population and poor literacy rate in India, awareness for diabetes, it's diagnose and treatment rate is not up to mark. Diabetes leads to hitch like risk of kidney damage, myocardial infarction, stroke etc (4). Yoga practice is the economical and approachable way to sustain a good health condition for a diabetic person. Nearly 30% of type 2 diabetes is preventable by modifying their diet correctively, by improving their daily routine with add-on some physical activities. Yoga originated more than 5,000 years ago and it represents the way to balancing and nourishing the body, mind and emotions (2). In the yogic practices, yoga exercises are designed to strengthen the metabolic, nerves, muscular and respiratory systems. Some meditation techniques and pranayama are emphasis to breathing control and concentration. It is stipulated that direct recreation of cells of pancreas may be taking place which may improve utilization capacity of glucose in the peripheral tissues through enzymatic process (5). So the techniques can help to improve the condition of diabetic but also can help to prevent the issue. A robust life style including physical and mental exercises can play a vital role in the fight against diabetes (3). So the yoga practice can be considered as a beneficial and economical way to manage the T2DM (1).

So the main purpose of this study to calculate the effect of yoga practice and pranayama on post prandial blood glucose of type 2 diabetic patients over duration of 3 months in Jaipur.

Methodology

70 people were divided into two groups named group A (Yoga Group) and group B (Control Group). Both group having 35-35 diabetes patients. Group A performed particular yoga exercises for 3 months along with moderated diet plan. Group B didn't follow any prescribed exercise and diet plan. There was no change in the routine of group B. There were no change in the medicine schedule prescribe by the doctor for both groups. Following yoga exercises and asanas were performed by Yoga Group.

Duration	Reprise	Yoga Practice (One Hour Morning Session)
6 min	-	Warm up session { 3 min prayer+ 3 min basic body stretch }
2 min	3 times	Surya Namaskaar
2 min	5 times	Tadasana (Standing Position)
1 min	5 times	Katichakrasana (Standing Position)
2 min	5 times	Padahastasna (Standing Position)
1 min	5 times	Utakatasana (Standing Position)
2 min	-	Vajrasana (Sitting Position)
2 min	5 times	Bhadrasana (Sitting Position)
2 min	-	Yoga Mudra (Sitting Position)
2 min	4 times	Vakrasana (Sitting Position)
2 min	4 times	Ardha Matsyendrasana (Sitting Position)
2 min	5 times	Paschimottanasana (Sitting Position)
2 min	5 times	Uastrasana (Sitting Position)
2 min	3 times	Merudandasana (Laying Position)
2 min	6 times	Ardha Halasana (Laying Position)
2 min	5 times	Pavan Muktasana (Laying Position)
2 min	3 times	Setubandhasana (Laying Position)
2 min	3 times	Naukasana (Laying Position)
2 min	5 times	Bhujangasana (Laying Position)
2 min	6 times	Ardha Salbhasana (Laying Position)
2 min	3 times	Salbhasana
3 min	-	Shavasana
3 min	-	Makrasana
2 min	-	Bhastrika
2 min	-	Anulom-Vilom
2 min	-	Bhramari
4 min	-	ॐ Chanting and meditation

Analysis of Data and Result of The Study

To compare the improvement in health status between control group and yoga group, T test was used as statistic calculator. The detailed statistics i.e. mean, SD and SEM were also used for considered the central massing of the store and dispersion of scores of each group. Upper limit of significance was set at 0.05.

Enumeration Statistics of Pre and Post-Test mean scores of Postprandial Blood Glucose* levels in control and experimental (Yogic) Group before and after Intervention (After 3 months) [N=35]

Group	Test	Mean	SD	SEM	t	df	Standard error of difference
Control Group	**Pre**	307.40	26.66	4.50	.2207	68	6.071
	Post	306.06	24.07	4.06			
Yogic Group	**Pre**	302.89	34.89	5.89	6.5848	68	8.740
	Post	245.34	38.16	6.45			

1. In control group, the 'T' value was found .2207 and the P value (two tailed) is equal to 0.8260. By conventional theorem, this difference is not grantable significant. The mean of CI difference equals to 1.34 and 95% CI of this variation lies between -10.7751 and 13.4551.
2. In Yogic group, the 'T' value was found 6.5848 and the P value (two tailed) is < 0.0001. By traditional standard, this difference is considered to be highly significant according to data. The CI mean change is 57.5500 and 95% CI of this difference stand between 40.1098 and 74.9902.

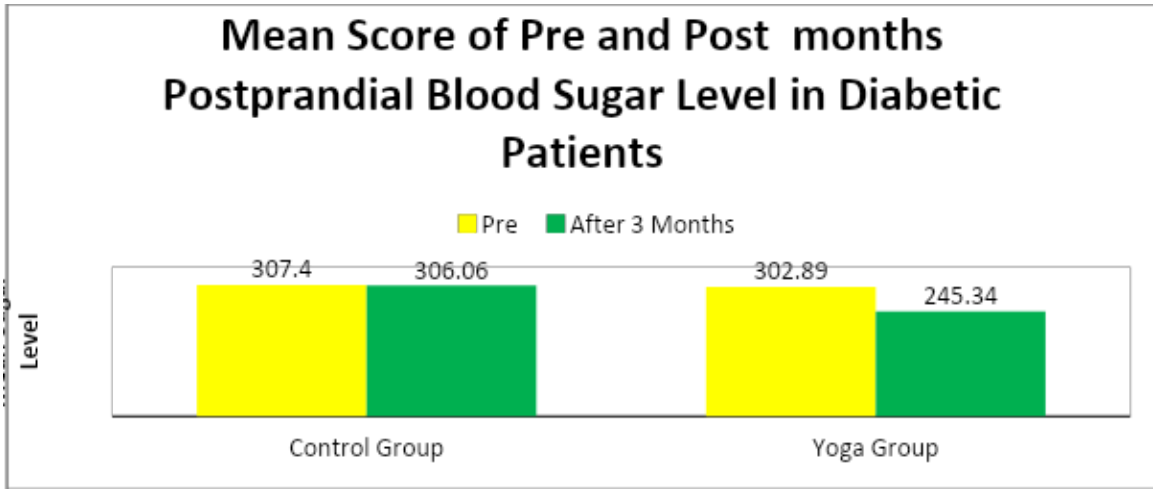

Fig. 4.1 - Graphical display of Pre and post (after 3 months) means data of Control and Yoga groups of Postprandial Blood Glucose level in Diabetic Patients.

Conclusion

Now it is very clear that the results after 3 months of yoga practice, there were noticeable corrective improvement in postprandial blood sugar. But routine practice of yoga will generate more fruitful result. So the daily yoga practice is recommendable to control the post prandial blood glucose level in T2DM patients.

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Protection of Environment From Pollution: With Green Energy Concept

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Abstract

Green chemistry, also called sustainable chemistry, is an approach to chemistry that attempts to prevent or reduce pollution. It also tries to improve the efficiency of chemical products by changing how chemicals are designed, manufactured, and used. This chemistry emphasizes the reduction or elimination of the production of hazardous substances and the development of greener solvents and safer chemicals. Greenhouse chemistry is also referred as sustainable chemistry. This is the branch of chemistry that deals with the design and optimization the production and use of toxic substances.

Green chemistry aims to reduce the negative impact of the chemicals on human health and the environment. Chemists do this by developing alternative processes and reaction media, such as solvents, which are environmentally friendly, safer design of molecules and materials, reduce the waste generated from the production process, eliminate the hazardous products to impact the environment, minimize the dangerous materials used in various methods, which leads to environmental exploitation and optimum utilization of resources. The manufacture of chemicals, such as drugs, can involve huge volumes of harmful solvents. So selecting greener solvents is a key target of many green chemistry programmes. Progress is being made towards identifying solvents that can be used in much smaller quantities, and careful selection can also increase the reaction rates and production rate.

Day by day, pollution which occurs from chemicals which are used in chemical industries or expelled from processing industries increasing constantly. To overcome this problem green chemistry is right option. By using green chemistry concepts we can reduce the effects of environmental pollutants.

In this paper we are going to focus on the key principles of green chemistry like prevention of waste, avoiding the production of hazardous chemicals, designs of safe chemicals, incorporation of safe chemistry for the prevention of accidents

Keywords: Environmental Pollutants , Green Chemistry , Green Solvents, Hazardous Chemicals , Sustainable Chemistry Etc.

Introduction

Although chemistry is the science of matter but there can be no denying that in years past, and even at present, chemistry has been misused in many respects, such as the release of pollutants and toxic substances and the production of no biodegradable materials, resulting in harm to the environment and living things, including humans. It is now obvious that chemical science must be turned away from emphasis upon the exploitation of limited resources and the production of increasing amounts of products that ultimately end up as waste and toward the application of chemistry in ways that provide for human needs without damaging the earth support system upon which all living things depend. Fortunately, the practice of chemical science and industry is moving steadily in the direction of environmental friendliness and resource sustainability. The practice of chemistry in a manner that maximizes its benefits while eliminating or at least greatly reducing its adverse impacts has come to be known as green chemistry.[1]

Environment Protection

Renewable technologies are considered as clean sources of energy and optimal use of these resources minimize the environmental impacts, produce minimum secondary wastes and are sustainable based on current and future economic and societal needs. Sun is the source of all energies. With the increasing of population, the energy source demands are also increases. The amount of energy requirement is different between the countries around the world. The developed country need more energy compare to developing country. The present people are most concern about renewable energy sources because it is pollution free, simply available and less costly and more amounts exist in the earth. In renewable energy technology we have to use the natural source of energy for example, solar radiation energy, wind energy, tidal energy, biomass energy and geothermal energy etc. This energy sources are environmental friendly in nature.

A concern for environmental protection has recurred in various forms, in different parts of the world, throughout history. Our environment faces several problems, and many of these seem to be worsening with time, bringing us into a time of a true environmental crisis. It is more important to raise awareness of the presence of these issues, as well as what can be done to reduce their negative impact. In the environmental issues the most important form of global pollution are discussed below.[8,9]

Global Warming

The emission of greenhouse gases due to human activity causes global warming, which in turn causes an increase in temperature that they leads to rising the sea levels, melting of polar ice caps, flash floods and desertification. Human activity since the industrial revolution has raised the amount of greenhouse gases in the environment. [4,14]

What Is Renewable Energy?[3,5]

Renewable energy is energy derived from natural sources that are replenished at a higher rate than they are consumed. Sunlight and wind, for example, are such sources that are constantly being replenished. Renewable energy sources are plentiful and all around us. For the most part, renewable energy sources also provide clean energy, or energy that emits few greenhouse gases or pollutants.

Out of all energy resources, we consider green power (solar, wind, biomass and geothermal) as the cleanest form of energy.

Clean energy is energy that, when used, does not pollute the atmosphere; creating little or no greenhouse gases. Once again, there are clear crossovers between clean energy, green energy and renewable energy.

Here's an easy way to differentiate between them:

Clean energy = clean air

Green energy = sources from nature

Renewable energy = recyclable sources

Fossil fuels, when burned to produce energy, cause harmful greenhouse gas emissions, such as carbon dioxide.

Benefits of renewable energy

Environmental and economic benefits of using renewable energy include:

1. Generating energy that produces no greenhouse gas emissions from fossil fuels and reduces some types of air pollution
2. Diversifying energy supply and reducing dependence on imported fuels
3. Creating economic development and jobs in manufacturing, installation, and more.

Why It Is Called Sustainable Energy?

Here are five reasons why accelerating the transition to clean energy is the pathway to a healthy, livable planet today and for generations to come.

1. Renewable energy sources are all around us
2. Renewable energy is cheaper
3. Renewable energy is healthier
4. Renewable energy creates jobs
5. Renewable energy makes economic sense

Renewable Energy Sources

Which are available in abundance all around us, provided by the sun, wind, water, waste, and heat from the earth – are replenished by nature and emit little to no greenhouse gases or pollutants into the air.

Renewables are now cheaper in most countries, and generate three times more jobs than fossil fuels.

Here are a few common sources of renewable energy:

Solar Energy[12]

Sunlight is one of our planet's most abundant and freely available energy resources. The amount of solar energy that reaches the earth's surface in 1 h is more than the planet's total energy requirements for a whole year. Although it sounds like a perfect renewable energy source, the amount of solar energy we can use varies according to the time of day and the season of the year as well as geographical location.The rate at which solar energy is intercepted by the earth is about 10,000 times greater than the rate at which humankind consumes energy.

Solar technologies can deliver heat, cooling, natural lighting, electricity, and fuels for a host of applications. Solar technologies convert sunlight into electrical energy either through photovoltaic panels or through mirrors that concentrate solar radiation.The cost of manufacturing solar panels has plummeted dramatically in the last decade, making them not only affordable but often the cheapest form of electricity. Solar panels have a lifespan of roughly 30 years, and come in variety of shades depending on the type of material used in manufacturing.

Although not all countries are equally endowed with solar energy, a significant contribution to the energy mix from direct solar energy is possible for every country.

Wind Energy[2,6]

Wind is a plentiful source of clean energy. Although domestic or 'off-grid' generation systems are available, not every property is suitable for a domestic wind turbine. The wind energy is generally derived from air flow using turbine. The wind energy is transformed mechanical energy from turbine into electric energy. Wind energy is another cleaned energy source. Wind is actually a form of solar energy. Winds are caused by the heating of atmosphere by the sun, the rotation of earth, and earth's surface irregularities. Wind energy harnesses the kinetic energy of moving air by using large wind turbines located on land (onshore) or in sea- or freshwater (offshore).

Many parts of the world have strong wind speeds, but the best locations for generating wind power are sometimes remote ones. Offshore wind power offers tremendous potential.

Geothermal Energy

Geothermal energy is a renewable energy source because heat is continuously produced inside the earth. People use geothermal heat for bathing, to heat buildings, and to generate electricity. The geothermal field, however, the temperature of geothermal reservoir or the fluid pressure in the reservoir may decrease over time as fluids are produced and energy is extracted.

The geothermal energy is one of the lower costs, easily available, sustainable, trust worthy and cleans energy. Geothermal energy utilizes the accessible thermal energy from the earth's interior. Heat is extracted from geothermal reservoirs using wells or other means.

Reservoirs that are naturally sufficiently hot and permeable are called hydrothermal reservoirs, whereas reservoirs that are sufficiently hot but that are improved with hydraulic stimulation are called enhanced geothermal systems. Once at the surface, fluids of various temperatures can be used to generate electricity. The technology for electricity generation from hydrothermal reservoirs is mature and reliable, and has been operating for more than 100 years.

Hydropower[11]

As a renewable energy resource, hydro power is one of the most commercially developed. By building a dam or barrier, a large reservoir can be used to create a controlled flow of water that will drive a turbine, generating electricity. This energy source can often be more reliable than solar or wind power (especially if it's tidal rather than river) and also allows electricity to be stored for use when demand reaches a peak. Like wind energy, in certain situations hydro can be more viable as a commercial energy source (dependant on type and compared to other sources of energy) but depending very much on the type of property, it can be used for domestic, 'off-grid' generation. The tidal energy is a generally form of hydropower, it convert the energy obtained from ocean tide to electrical energy. The tidal energy shown is obtained from earths oceanic tides. This is one of the cheaper, easily available and environmental friendly energy.

Hydropower currently is the largest source of renewable energy in the electricity sector. Hydroelectric energy is by far the most prevalent, accounting for 83% of the world's electricity generation from renewable sources.

Ocean Energy

Ocean energy derives from technologies that use the kinetic and thermal energy of seawater – waves or currents for instance - to produce electricity or heat. Ocean energy systems are still at an early stage of development, with a number of prototype wave and tidal current devices being explored. The theoretical potential for ocean energy easily exceeds present human energy requirements.

Bioenergy

Bioenergy is produced from a variety of organic materials, called biomass, such as wood, charcoal, dung and other manures for heat and power production, and agricultural crops for liquid biofuels. Most biomass is used in rural areas for cooking, lighting and space heating, generally by poorer populations in developing countries.

This is the conversion of solid fuel made from plant materials into electricity. Although fundamentally, biomass involves burning organic materials to produce electricity, and nowadays this is a much cleaner, more energy-efficient process. By converting agricultural, industrial and domestic waste into solid, liquid and gas fuel, biomass generates power at a much lower economic and environmental cost. The biomass is organic matter derived from the leaving materials or organisms. Modern biomass systems include dedicated crops or trees, residues from agriculture and forestry, and various organic waste streams.

Energy created by burning biomass creates greenhouse gas emissions, but at lower levels than burning fossil fuels like coal, oil or gas. However, bioenergy should only be used in limited applications, given potential negative environmental impacts related to large-scale increases in forest and bioenergy plantations, and resulting deforestation and land-use change.

Hydrogen Energy

Hydrogen energy is a key role for energy generation and replacing fossil fuels. It is gaining more attention in the future energy source. This is a simple and clean energy source. Hydrogen is expected to play a key role as an energy carrier in future energy systems of the world. As fossil-fuel supplies become increases therefore the environmental pollution is also increases, hydrogen is likely to become the major chemical energy carrier. When most of the world's energy sources become non-fossil based, hydrogen and electricity are expected to be the two dominant energy carriers for the provision of end-use services. A transition era will bridge the gap between today's fossil-fuel economy and hydrogen economy, in which the non-fossil-derived hydrogen will be used to extend the lifetime of world's fossil fuels by upgrading the heavy oils. In future the hydrogen energy demand is gradually increased .

Current Scenario Of Green Energy In India[7,10,13,15]

India is one of the largest coal consumers in the world and imports costly fossil fuel. Close to 74% of the energy demand is supplied by coal and oil. Therefore, there is an urgent need to find alternate sources for generating electricity. In this way, the country will have a rapid and global transition to renewable energy technologies to achieve sustainable growth and avoid catastrophic climate change. Renewable energy sources play a vital role in securing sustainable energy with lower emissions.

India has an enormous renewable energy sources. This is the first country around the world to set up a ministry of non-conventional energy sources in early 1980s. In india the renewable energy capacity is (excluding the large hydro) has reached 33.8 gw. In these renewable energy sources 66% comes from wind, solar energy participative 4.59% along with biomass and small biomass. India is the 3rd largest energy consuming country in the world.India stands 4th globally in renewable energy installed capacity (including large hydro), 4th in wind power capacity &4th in solar power capacity (as per ren21 renewables 2022 global status report).

The availability of renewable energy sources is different from each state in India. Tamil nadu is one of the largest sources of wind energy in India .Bhopal: **Sanchi**, a world heritage site located in the Raisen district of MadhyaPradesh.**Bihar** is set to become the country's first state to have two green energy efficient towns in Rajgir and BodhGaya. The towns will start getting solar energy through the first-of-its-kind renewable energy project from 2023.

Top 5 states in India for solar installations

Rajasthan: cumulative solar installation as 16353.07 mw. …

Gujarat: cumulative solar installation as 8747.42 mw. …

Karnataka: cumulative solar installation as 8018.60 mw. …
Tamilnadu : cumulative solar installation as 6497.32 mw. …
Telangana: cumulative solar installation as 4657.18 mw.

India develops first solar park at **Charanka village .** Rajasthan has topped in the installed capacity of solar energy in India with 7737.95 mw [ministry of new and renewable energy (mnre)].

The 50-mw solar thermal power plant was set up in **Naukh village** located in the Jaisalmer district of Rajasthan.Adani green switches on India's first hybrid power plant .This plant in **Jaisalmer** is, the first ever wind and solar hybrid power generation plant in India. Black & Vetch was appointed by developer as solar as the owner's engineer for a 15 megawatt solar photovoltaic (pv) plant located at **Charanka village** in Gujarat, India.

The Vindhyachal thermal power station in the Singrauli district of MadhyaPradesh, with an installed capacity of 4,760 mw, is currently the biggest thermal power plant in India.

Five largest solar power plants in India

1. **Bhadla solar park, Rajasthan**
2. **Kurnool ultra mega solar park, AndhraPradesh**
3. **Rewa ultra mega solar, MadhyaPradesh**
4. **Pavagada solar park, Karnataka**
5. **Np Kunta ultra mega solar park, AndhraPradesh**

The ministry of renewable energy provides financial support up to 50% of the cost to the state government implementers' agency for the development of tidal energy project. The cost of establishment of wind energy generation machine is high but the operating cost is also low. In India has a huge coastline with the gulfs and estuaries where the tides are strong enough to move turbines for the production of electricity. In India first geothermal energy power plant was established in **Chhattisgarh Bal Rampur** district under the connection of national thermal power corporation (ntpc) and Chhattisgarh renewable energy development agency (creda).

Conclusion

Although the conventional energy resources like oil, gas and coal are very important for the improvement in economical conditions of the country. All the factors like emission of greenhouse gases, availability of resources, land requirements, water consumption, social impacts and price of power generated are taken into consideration for the classification of renewable energy sources. Energy security, economic growth and environment protectionary the national energy policy drivers of any country of the world.Power generation from many types of renewables are 100% efficient in international energy statistics, while fossil power plants achieve only 25–85% efficiency.

There is an urgent need for the transition from fossil fuel energy systems to renewable resource energy systems to decrease reliance on depleting reserves of fossil fuels and to mitigate global climate change. As we know covid-19 has a huge negative impact on the entire world but a positive note is that it has optimized the prospects of renewable energy sectors. The crisis has refocused the attention of the indian government and policymakers to fight climate change and localize energy supply. Both these factors play to renewable power's advantage. Investors in conventional energy, suffering huge losses due to reduction of output and lower prices, are expected to accelerate the shift towards renewable power. Lastly, valuable lessons have been learned by grid managers in coping with increasing variability in power demand supply.

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College Students' Environmental Consciousness And Responses To Urban Dwelling

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Abstract

The young generation is the future's hope for a better environment and for achieving environmental sustainability. They, as a community, will become a dominant force for a sustainable environment through their consciousness and willingness to accept environmentally good policies. A brief study was undertaken on college-going students' environmental consciousness, responses, and health. The goal of this study was to investigate diverse environmental profiles among higher education students through the communication of parametric investigation that required the students' role in environmental awareness and participation. It sought to ascertain the students' level of environmental knowledge and awareness, their attitudes toward the environment, and their level of participation in environmental conservation and development. For this, a research method was created to record the student's environmental consciousness and awareness level. According to the findings, most students are ecologically oriented, have solid environmental knowledge, and have positive attitudes towards the environment, but have a poor level of awareness about environmental health issues. According to the findings of this study, students are environmentally conscious and behave responsibly. College students demonstrate this by turning off computers or electrical appliances after classes or lectures or practicals when they are not in use to save energy, decreasing single-use plastic consumption, utilizing alternatives to polythene such as jute or paper bags, and participating in environmental seminars and workshops. Following the discovery of different environmental attitudes among students, the given research methodology and findings can help build environmental programmes, as well as grow students' dynamic participation in environmental preservation and development events.

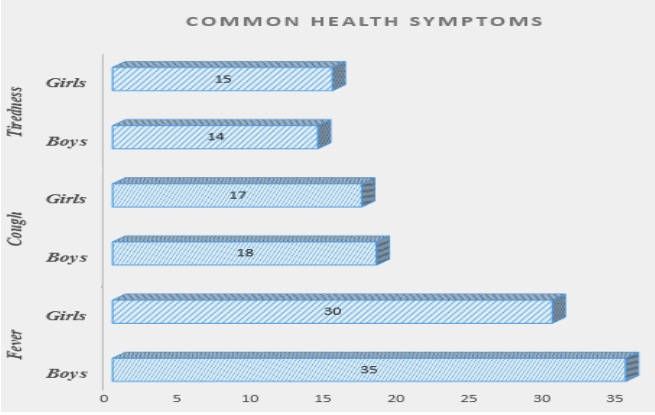
Keywords: College Students**,** Environmental Consciousness, Student Health.

Introduction

The term "environment" refers to the surroundings or circumstances that influence growth and development. It is a mixture of dead and living constituents. It is the physical and biological environment that surrounds us and that we can smell feel, hear, see, and touch. A clean environment is not polluted by hazards and pollutants. It may hurt the natural environment and the activities of living things. We use the environment's resources such as air, land, and water to suit our requirements. Improvement also involves attending to the needs of individuals. As we strive to meet ever-increasing demands, the environment suffers. There is a need to raise 'awareness' about the need for environmental consciousness and its protection. It is the responsibility of every citizen especially the younger generation as they are the future of the coming world to use our environmental resources responsibly and protect them from damage. We must explore the meaning and causes of environmental deterioration, as well as the importance of environmental conservation. The effects of environmental difficulties are felt locally and have become a global issue. Many industrial and manufacturing advances, urbanisation, automobile emissions, electronic wastes, anthropogenic activity, and other factors have wreaked havoc on the natural environment, resulting in serious health consequences (Massey et al., 2009). With the advancement of knowledge and technology, many countries are attempting to find solutions through a variety of creative technologies to reduce the consequences of pollution. As a result, in response, younger generations should be educated on how to make the best use of our natural resources and energy to protect our environment. As a result, environmental consciousness and awareness become critical. Environmental Consciousness can be defined using the characteristics of an environmentally literate person-someone who possesses: Knowledge and understanding of a wide range of environmental concepts, matters, and problems. A. Awareness: To help individuals acquire an awareness of and sensitivity to, the total environment and its related problems. B. Knowledge: To help individuals gain a variety of experiences, and acquire a basic understanding of the environment and its associated problems. C. Skills: To help individuals acquire the skills for solving environmental problems. D. Participation: To provide individuals with an opportunity to be actively involved at all levels in working towards the resolution of environmental problems. Also a set of cognitive skills and aptitudes and a set of affective characteristics and the appropriate behavioral strategies to apply; such as awareness and understanding to make sound and effective decisions in a range of environmental situations (Lange and Dewitte, 2019). Education is one method for raising awareness and implanting sustainable ideals to safeguard the environment. With environmental consciousness environmental education also plays an important role. Environmental education is defined as a collection of processes and actions that foster an understanding of the environment and the development of caring and committed reactions (Pillai, 2012). Emotion, knowledge, attitudes, emotions, feelings, and values are all involved (Porzig-Drummond et al., 2009). Environmental education can assist raise awareness and attitudes toward environmental issues, while also reducing the harmful impact of human activity on the environment (Ningrum and Herdiansyah, 2018). Furthermore, incorporating education within the concept of sustainable development might ultimately induce changes in environmental consciousness (UNESCO, 2005). Environmental education and consciousness play an important role in this case because educational institutes teach young generations who are expected to be future leaders in a variety of fields and are a prominent part of a growing group that recognises the need to protect the environment (Leiserowitz, 2005).

With this, there is also a great need and responsibility to encourage and properly spread awareness, attitudes, and environmental behaviour among the younger generation. Environmental behaviour involves adopting attitudes and behaviours aiming to minimize any adverse effects on the natural environment (Paco, 2018). Existing environmental behaviour must emerge without being promoted just by the surrounding conditions and the policy's tenacity. However, this behaviour should originate from the community's intrapersonal ideals, which include this young generation. As college students with appropriate skills and information, they can play an important role in creating sustainable behaviour and environmental challenges, as well as finding potential solutions to current ones. Environmental awareness is equally crucial when it comes to environmental behaviour. Environmental awareness is described as understanding the environmental consequences of human behaviour (Kollmus and Agyeman, 2002). Environmental awareness is defined by Li and Chen (2014) as the creation of cognition in memory through the processes of sensory stimulation, notice, identification, and perception. Environmental behaviour refers to human actions to protect the environment (Fu et al., 2017), whereas environmental awareness refers to people's understanding and awareness of the environment and related issues (such as waste disposal, noise and air pollution, water pollution, soil pollution, ozone layer destruction, greenhouse effect, and acid rain) (Brehm et al., 2013). According to Kaiser et al. (2007), environmental behaviour is comprised of six (6) indicators: (1) energy savings, (2) mobility and transportation, (3) waste prevention, (4) recycling, (5) consumption, and (6) conservation behaviour. These six indicators can be used to assess how 'excellent' or 'bad' each person's environmental behaviour is. Environmental attitudes of young people are also critical for environmental conservation, therefore identifying facilitating variables is critical. Promoting positive development in young people may enable them to actively contribute to their surroundings through positive attitudes and behaviours. The natural environment is typically healthy and pure, and it is the man who damages the purity and cleanliness of the environment by his hostile attitude towards the environment. Environmental attitude is defined as an acquired tendency to respond consistently favorably or negatively to the environment, and pro-environmental behaviour is defined as "actions that contribute to environmental preservation and conservation" (Kaiser et al., 1999). Statistical analysis was used to differentiate between boys and girls students based on environmental knowledge, awareness, and attitude (KAA) toward environmental perception. There was no statistically significant difference in environmental knowledge outcomes between boys and girls students when equal variance was assumed (t (500) = -1.673, P = 0.201, P>0.05). Similar to the research finding of Lasso de la Vega (2004) also supported this reasoning that gender had no significant impact on environmental knowledge. In terms of respondents' environmental awareness level, two independent sample t-tests revealed no statistically significant difference between boys and girls (t (500) = -1.521, P=0.275, P>0.05). According to the findings of Aminrad et al., (2010) and Sengupta et al., (2010), there is no significant difference in environmental awareness levels between the sexes. There was no statistically significant difference in environmental attitude ratings between boys and girls students, according to the T-value test (t (500) = 0.496, p = 0.836, P>0.05). Among the total factors influencing respondents' environmental attitudes, i.e., the gender of the respondents had a merely minimal impact. As a result, we may conclude that boys and girls had no significant effect on respondents' knowledge, attitude, and level of awareness regarding environmental concerns and related issues.

Further to investigate students' knowledge, perception, and attitude towards environmental hazards. A health-based diagnostic reaction was also recorded and documented to have a better understanding of the students' environmental health challenges. Environmental health refers to the characteristics of human health, such as quality of life, that are influenced by physical, biological, social, and psychological components in the environment. It also refers to the theory and practice of measuring, correcting, managing, and preventing environmental conditions that may hurt the health of current and future generations. The findings in Figure 1 revealed that participants had a significant lack of general awareness about environmental health risks and what they could do to recover. According to the survey, the common health-related symptoms were fever (35% of boys, 30% of girls), cough (18% of boys, 17% of girls), and tiredness (14% of boys, 15% of girls) respectively and not so common or some serious health issues were headache (50% of boys, 46% of girls), eyes irritation (41% of boys, 43% of girls), cold and flu (27% of boys, 28% of girls), allergies (20% of boys, 22% of girls), skin problems (13% of boys, 10% of girls), sinus (10% of boys, 7% of girls), mental fatigue (6% of boys, 5% of girls), nausea and dizziness (6% of boys, 7% of girls) respectively. In response, it can be argued that pupils have a limited understanding of environmental health.



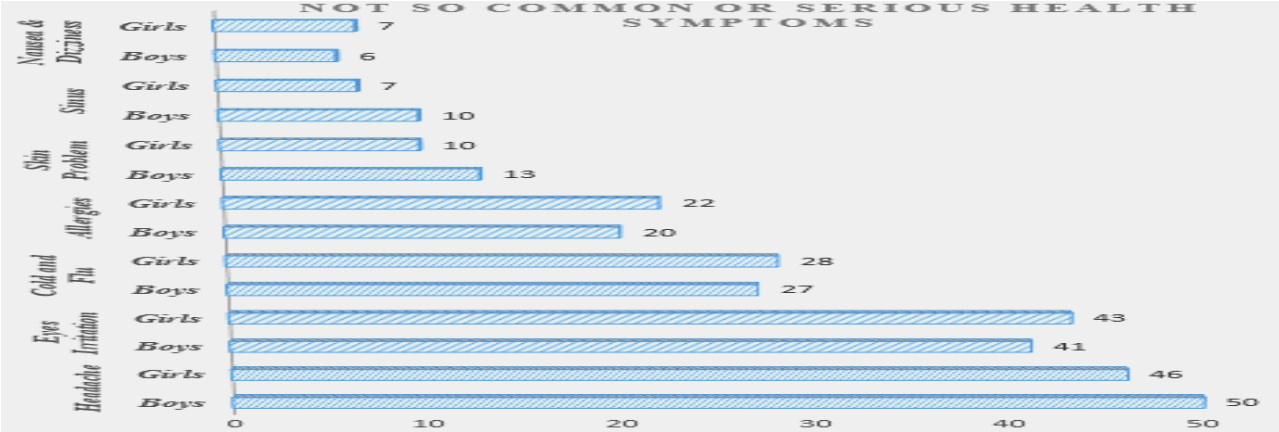


Figure 1. Common and Serious Health Symptoms are presented in a percentage format.

Table 1. Shows an independent sample test for comparing male and female students' knowledge, awareness, and attitude (KAA).

Dependent variable	***Sex Male (280) Female (220)***	***Mean***	***Std.Deviation***	***t-value***	***df 500***	***p-value***
Knowledge	*Male*	12.84	4.64	-1.673		0.201
	Female	11.52	4.86			
Awareness	*Male*	51.89	14.45	-1.521		0.275
	Female	50.68	15.49			
Attitude	*Male*	53.06	11.42	0.496		0.836
	Female	52.39	10.56			

KAA = Knowledge, Awareness, and Attitude

These facts eventually translate into slightly disregarded behaviours in terms of self-protection from environmental threats and risks. People are more prone to incorporate health and environmental issues into their behaviour when they are exposed to them repeatedly. Environmental health, which has a well-established function within the individual health concept, has also been linked to the COVID-19 pandemic via a variety of direct and indirect channels in today's time. Modern lifestyle, temperature change, environmental degradation, chemical exposure such as endocrine disruptors, and psychological stress factors all hurt human health. As a result, many people are in an unfavourable situation and face the pandemic with an already compromised immune system as a result of their exposure to environmental health threats (Agarwal et al., 2021). As a result, while responsible behaviour is the desired outcome, there is an urgent need for improved environmental health education and health.

Conclusion

Our research shows that participating in an environmental education programme can increase an individual's environmental attitudes and knowledge. Environmental education appears to be effective for changing attitudes and promoting pro-environmental behaviours that lead to long-term development. Respondents had greater knowledge and awareness of environmental and related issues. Improving students' environmental literacy and health literacy is an endeavour toward long-term growth. Government sectors and non-governmental organisations (NGOs) can collaborate to assist the expansion of environmental education programmes in the study region. Furthermore, all stakeholders should work together to improve community environmental education through training, conferences, extension services, and mass media. A thorough awareness of environmental challenges should be implemented in institutions from the start. Environmental education/awareness should be accessible not only within institutions but also across society.

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Relevance of Spiritualism in Modern World

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Abstract

Man is having a hard time managing the stress and worry that have now become an unwelcome but necessary part of his everyday life in this modern age of technology and social media. As the definition of human relations is changing along with the idea of society, he has drifted so far from himself that he has almost forgotten who he really is and what he is worth. His attachment to the outer materialistic world has grown to be stronger than ever. The rise of social media has undeniably improved human interaction, but it has also caused insecurities to grow because of people constantly comparing their lives to those of others. Many of us are preoccupied with showing others a fake happy and successful version of ourselves, ignoring the harsh realities of life. The moment truth grasps us we find ourselves in turmoil. The only way out is spirituality. Spiritualism is not religion. It is not about remembering God by practicing rituals or performing ceremonies in holy places such as temples. It is a state of mind where man believes in the existence of a supreme form of consciousness which is omnipresent. His purpose in life is to connect with this higher consciousness through self-realization. Spiritualism works as a source of inner strength to those in misery. In today's world spiritualism as a way of life can help people overcome stress and anxiety so that they are able to lead a life full of positivity. This article explores the role of spiritualism in overcoming negative emotions and inspiring a life of higher purpose and values.

Keywords: Spiritualism, Stress, Anxiety, Materialistic World, Religion.

Introduction

Spirituality or spiritualism is not a new concept in India. Since ages, Vedas and Upanishads have guided man through different paths towards what is believed to be the sole purpose of life 'moksha' or 'liberation'. Hindu scriptures have always advised man to follow his 'dharma' or 'religion' firmly if he is to be liberated from the cycle of life and death. In the 'ashram vyavastha' the fourth ashram called as 'vanaprastha', man was to leave his household responsibilities and spend his rest of life in the service of God in a far-off place such as forest. Such ways allowed man to attain spirituality through religion. Spirituality is, however, not religion. It is a broad term to define the state of mind where man believes in the existence of a supreme consciousness that is universal in nature and continuously makes efforts to become one with it. A religious person is required to follow certain rituals which are same for everyone. Unlike religion, spirituality has a different meaning for every individual. According to a study by Gall et al., 2011 religion is an external means of acquiring spirituality, and spirituality is primarily described as a basic aspect of self and the individual's learning of the supernatural. ((Gall et al., 2011) spiritual person does not necessarily follow a religion. Spirituality is reflected in his thoughts and actions. A spiritual person seeks the true meaning of life through ways that connect him to the higher divine consciousness. For him, materialistic things hold no value, and the real pleasure lies in detachment. His aim in life is not to run after materialistic comforts but to find contentment through his spiritual progress.

Spirituality has been defined in different ways and there is no consensus on what spirituality is. According to Tanyi, 2002, spirituality is a subjective, intangible, and multidimensional aspect of being human. (Tanyi, 2002) Spirituality is thus a subjective experience and depends on how a person feels connected to God and the way he expresses this connection. Some people believe in serving humanity while others indulge in ways to gain personal growth through spirituality. Jacob., 2013, has mentioned that the Judeo-Christian tradition is where the idea of spirituality developed in the West. Spirituality was then always considered in connection with Jewish and Christian religion. Religion and spirituality have only recently been separated. (Jacobs, 2013)

Spiritualism and Materialism

The world has always been divided into two sections, materialists and spiritualists. Materialists give importance only to material things such as physical comforts and the means to possess them is only money. That's why money holds the utmost importance in their lives. Sometimes to gain wealth they ignore moral and social values and follow unethical ways. A spiritual person on the other hand knows that true happiness lies in being one with the higher consciousness and materialistic things hold little or no value for him. It's natural for a normal human being to be ambitious in life. All his desires are materialistic in nature such as related to acquiring wealth, fame and status in society. He works all his life to gain these worldly pleasures. The fulfillment of one desire often leads to the birth of a new one. Thus, the chase is never ending. When his desires are not satisfied, he feels disappointed, angry or sad. Such negative emotions lead to stress and anxiety. Even if his desires are fulfilled, he might not feel happy and at peace. The dread of losing what he has accomplished may prevent him from feeling like a winner and he may not be able to enjoy the fruits of his labor. Thus, he is not content with his life in any scenario. A spiritual person on the other hand knows that ups and downs are a part of life and handles his failures in a mature way. He gains strength and knowledge from his spirituality.

A spiritual person is an asset to society who is compassionate towards his fellow beings. He feels connected to nature and wildlife and respects their existence and refrains from harming them in any way. Spiritual people understand the importance of protecting the nature and may be said to possess environmental consciousness. They may play an important role in spreading awareness in society thus making people realize their duty towards mother nature. Spiritual associations are helpful in running large scale campaigns such as to plant trees, to make environment plastic-free and to promote recycling of garbage. Spirituality is not just a practice but a way of life. Spiritual values should be taught as part

of the curriculum both at the school and college level so that young generation realizes the true meaning of life and fulfills its responsibilities towards the society and mother nature.

Social Media and Its Effects

In this modern age of technology and social media, people are gripped with many new kinds of fears. Social media connects people all around the world and also provides an opportunity to seek into the lives of others, often leading to comparisons. One may feel stressed and compelled to showcase a happier and better life. Often people build a fake world around themselves and prefer to live in a comfortable lie rather than facing the harsh reality. The fear that one day the truth will come out makes them feel anxious all the time. Besides, when people see the successful lives of others on social media, they may feel disappointed, jealous and angry. Such negative emotions change their attitude towards life and a person may become dissatisfied and depressed. The youth of today's world are easily affected by social media, often in a negative way.

Use of social media may affect the well-being of adolescents. According to a study by Pantic*et al.,* 2012 it was found that the use of social networking is positively correlated to depression among high school students. (Pantic, I., Damjanovic, A., Todorovic, J., Topalovic, D., Bojovic-Jovic, D., Ristic, S., & Pantic, S. (2012). Association between Online Social Networking and Depression in High School Students: Behavioral Physiology Viewpoint. Psychiatria Danubina, 24(1), 90–93., n.d.) In another study by Woods and Scott, 2016 it was found that the frequent use of social media by adolescents both overall and during night and also emotional investment in social media lead to poorer sleep quality, lower self-esteem and higher levels of anxiety and depression. (Woods & Scott, 2016) Barry, Sidoti, Briggs, Reiter, and Lindsey (2017) in a study in the United States found that the number of social media accounts is moderately correlated to adolescent-reported loneliness and fear of missing out along with parent-reported hyperactivity/impulsivity, anxiety, and depression.(Barry et al., 2017) To prevent the negative effects of social media, spirituality might provide the solution. Spiritualism connects one to his own self and a person who knows his innerself well remains uninfluenced by the illusions of the outer world.

Spiritualism, A Solution To Modern Day Problems

Social media is not the only innovation we encounter in today's world. The present is changing faster than we can imagine and the future looks more uncertain than ever. Since reality might be difficult to grasp in such unsettling times, more people are developing mental illnesses. According to World mental health report 2022 by WHO, mental health issues are very commonin all nations. Around one in eight persons worldwide suffer from a mental illness. (World Mental Health Report: Transforming Mental Health for All. Executive Summary. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO., n.d.) People who are spiritual are in general mentally strong and therefore adjust more easily to changing circumstances such as illness or trauma. Several studies have been done to explore the role spirituality plays in managing and copingillnesses such as cancer. For example, in a study by Hamilton et al., 2007, African American breast and prostate cancer survivors believed that God helped them on their quest for recovery. (Hamilton et al., 2007) A pilot study by Bowie et al., 2003 on African American prostate cancer patients imply that incorporating spirituality and religion into healthcare may be advantageousfor men with prostate cancer. (*Bowie, Janice et al. "Spirituality and Care of Prostate Cancer Patients: A Pilot Study." Journal of the National Medical Association Vol. 95,10 (2003): 951-4.*, n.d.) In another study, Holt et al., 2012 evaluated the influence of spirituality in African Americans' ability to cope with cancer. (Schulz et al., 2008)

The beneficial effects of spiritual well-being, existential well-being, and spiritual orientation on depressive moods in reaction to life stress were demonstrated by Fehring, Brennan, and Keller in 1987. (Fehring et al., 1987) In a study by Anye et al., 2013 in a sample of college students, SWB (Spiritual well-being) significantly improved HRQL (Health-related quality of life). To enhance young people' quality of life, campus health programme designers should take this link into account. (Anye et al., 2013) Spiritual well-being and mental health are significantly correlated, according to a 2010 study by Jafari et al. that looked at the association between the two in a sample of 223 university students. (Jafari et al., 2010) Studies by Shaw et al., 2005 and Knapik et al., 2010 have shown that spirituality helps in the healing of trauma and sexual violence victims respectively. (Shaw et al., 2005)(Knapik et al., 2010)

Embracing spirituality in life may also help promote spiritual health which in turn improves physical and mental health. The majority of participants in a study by Ghaderi et al., 2018, stated that spiritual health is distinct from spirituality and that spiritual health is indicated by four types of connections: connections with God, oneself, other people, and nature. Physical, mental, and social health are all impacted by spiritual health. (Ghaderi et al., 2018) Morgan et al., 2006, in a pilot study on African American women with breast cancer under treatment, found that a significant relationship exists between spiritual health and the quality of life. (Morgan et al., 2006) A study by Heidari et al., 2015 reveals that spiritual health promotes quality of life. (Heidari et al., 2015)

Conclusion

Spiritualism has become a popular concept nowadays. Many people are embracing spirituality to gain peace and well-being in their lives. Modern world innovations although improved the standards of living but at the same time gave rise to other problems. People living in urban areas often feel disconnected and alone. Social networking sites may provide the platform to connect with people living faraway places but people often hide their real identities and act fake. Spirituality is a way to connect with one's true self and discover the real nature of human soul. Spiritual people do encounter problems in life but they handle the stressful situations in a better way. They are mentally and emotionally strong and face the adversities of life using their spiritual power to heal themselves. They follow the religion of humanity and care for the needs of other people and mother nature. Spiritualism is thus very much relevant in today's modern world and spiritual values should also be made a part of curriculum both at the school and college level.

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Environment in The Poetry of Satendra Nandan

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Abstract

Contemporary poets while portraying environment in poetry tend to write about nature more broadly than their predecessors, focusing more on the negative effects of human activity on the planet. Nature is no longer a rustic retreat; it is now a question of survival. Environmental poetry explores the complicated connection between man and nature, often written by poets who are concerned about human impact on the natural world and vice-versa. Satendra Nandan is one amongst such poets. His poetry creates a virtual environment. Poetry and environment become entwined in his works and we realise that how vital is nature to human healing and survival. Nandan realizes the fact that it is essential to preserve the sacred relationship with nature and all living things. And this awareness comes through poetry. Nature has inspired scores of poems, and it's awe-inspiring. His poems remind us that we're just a small part of a greater world. From beautiful flowers to sunshine to rainstorms, nature's many facets find a prominent place in Nandan's works.

Keywords: Nature, Environment, Plants, Animals, Fiji, Scapes Etc.

Introduction

"And if we can make our children love the little gardens in their schools, trees on their streets, streams, lagoons, rivers, to take care of, we may yet save our planet. And its pulsating membrane from asphyxiating plastics. That is where it begins: with ourselves."

- Satendra Nandan

Nandan emphasizes the profound interconnectedness of human societies with their environments. It reminds us that our species is one of many stakeholders in a worldwide ecosystem. Nandan has a lot to teach the world when it comes to consistently weaving the eccentricities of the environment into the literary narrative. We find many instances in the works of Satendra Nandan where the interconnection between environment and literature has galvanised societal concern and change. Being a Fijian writer, Nandan has profoundly mentioned the Fijian scapes in his prose and poetry.

Fiji has a set of beliefs that is practiced by the indigenous people of the country. In Fijian mythology, it is believed that the serpent God Degei is the first and ever-living God who created the Fiji Islands and the people related to the islands. According to a myth, in the beginning, there was water and twilight everywhere. Only an island existed. It was the island of the Gods which floated somewhere at the edge of the world and was visible during sunrise. The only living creature on the island was the female hawk named Turukawa. She was dumb and would only fly around the earth. With the passing time, she started gathering leaves and grass to create a nest. Eventually, two eggs were created. God Degei took these eggs to his house and kept them warm with his body. When these eggs hatched, two tiny human beings came out. They were God Degei's children. A shelter was built for them by God Degei. He also gave them knowledge about the secrets of nature. These children could only eat the fruits which could be eaten raw as they did not know about fire and the art of cooking. When they grew up, they asked God Degei to teach them how to harness the power of fire. God Degei taught them but after some time they left God Degei and went to live their independent life and had their children. Degei wasn't upset since he knew that his children and their children would worship him as their God.

According to this myth, the village that Degei landed on was Lautoka where he established the village of Viseisei. This myth about the Serpent God is quite strange because historical records reveal that Fiji had no snakes. At the same time, this story is somewhat similar to the myth of the snake Kaliya. Hindus believe that the snake that the Fijians call Degei is Kaliya. Lord Krishna had ordered Kaliya to leave the river of Vrindavan and go to a beautiful island, in the middle of the ocean, called Ramaneek Dweep. When Indians first came to Fiji, they believed that the island was the same Ramaneek Dweep where Lord Krishna had sent Kaliya. There is a Krishna Kaliya Temple in Lautoka which was built by the International Society for Krishna Consciousness (ISKCON). The Fijians believe that the Serpent God Degei lives in a cave in the Nakavadra mountain range in Viti Levu. Nandan observes in his book Fiji: Paradise in Pieces:

Only Bougainville (French explorer Louis Antoine de Bougainville), who knew his classic, called the island a New Cythera, after the Greek island where Aphrodite, goddess of Love, had been born out of the sea. This was the new Arcadia, "Nouri-shed by the fruits of the earth under the most beautiful skies, the people free from vice and sin and prejudice and spoke of a language of noble simplicity in which the workings of the soul, the beatings of the heart", were one with the movements of the lips. Tahitians knew "no other god but love, every day is consecrated to it, the whole island is a temple, all the women are its idols, all men its worshippers. (p. 93)

Many species of plants and animals are indigenous to Fiji. Several mountains are cone-shaped, covered with dense vegetation of tropical plants. This feature adds to the country's blissful ambiance. Most species of flora and fauna originated in South East Asia. These species headed eastward across the Pacific, by natural distribution or in the company of humans. About half of Fiji's total area is forested, especially, the islands of western Fiji are home to the dry forest. The western areas of the island have dry grasslands. Flora changes according to the topography of the island. The mountainous island possesses a great variety of plants. Coconut palms, breadfruit, taro, paper mulberry, pepper, and bananas, which were brought by the ancient settlers, are generally found in the inhabited areas of Fiji. Flowers like, Bougainvillea, hibiscus, allamanda, poinsettia (flame tree), croton, frangipani (plumeria), Ixora, canna, and water lilies

give testimony to the love of Fijians for flowers. Frangipani is used as a perfume owing to its sweet aroma. Other Fijian native trees include African tulip, Flame tree, Plantain, Pandanas, Stinkwood, Chinese Lantern Tree, Milo, Ironwood, Beach Almond Tavola, Beach Laurel or Beauty leaf, Fish-poison Tree.

Fiji has a wide variety of land and sea animals. The Fijian fauna is made up of bats, skinks, iguanas, and geckos. One can see fruit bats or flying foxes and a lot of geckos and skinks. There are around 27 species of reptiles and 162 species of birds. The species of birds include owls, hawks, doves, parrots, terns, boobies, herons, petrels, noddies, and others. There are around 26 species of birds that are native to Fiji, such as the barking pigeon, red-headed parrot finch, and giant forest honeyeater. One can easily trace insects like butterflies, sphinx, spiders, stick insects, mud dauber, wasps. Fiji has rich sea life too, including colourful reef fish, great white sharks, paua clams, deep-sea tuna, crabs, humpback whales (migrate to the islands from June to October), sea turtles, and a plethora of tropical fish. The exotic landscapes, serene seascapes, and picturesque ambiance make Fiji a paradisiacal beauty.

The best way to know a country is to know its landscapes and the land. It is a blessing to live and feel life amid the landscapes of one's country. For Nandan, Fiji is not just about land, mountains, and rivers. He goes beyond the physical features when dealing with the scapes of Fiji. The poem "Gift from the Sea" from his collection The Loneliness of Islands reflects this aspect of Nandan's poetic art:

On the edges
Of an open sea
I tread, tremble – for ever;
Waves from other shores
Lap away
The days of our lives
Like footprints of forgotten intimacies;
Only the heart's vulnerability,
Caught in the radiance
Of a dying sun,
Beats against the sea's insouciance.

Nandan is probably referring to the river Nadi. He treads on the bank of the river. While spending time by the river he recalls his past. He beautifully deploys a simile to compare the past days with the footprints on the seashore that are washed by the receding waves. It is only the vulnerable heart that beats, in the radiance of the setting sun, despite the indifference of the sea. He further writes:

Memories ripple
In my oceanic mind
In a distant glowing
Of the sea, the sky,
Made one by a darkening day!

The memories flow spontaneously in the ocean of his mind. Using a metaphor, he has compared the mind with an ocean. He recalls the dusky evening when the sea and the sky seemed to be one while viewing the horizon. The sea and the sky again split into two separate entities. Only the sea-bird resonates with the vibrations of life.

The poet takes another walk on the seashore and this time he observes a blackbird splashing in water "Caught like a mermaid / In sea-weed, rise / As an angel from paradise:". Using a couple of similes Nandan describes the angelic beauty of the bird and its activities. He feels some momentum in the silence of his heart. He could feel the seashells below his feet. He concludes the poem on an emotional note:

I scrabble again over sea-shells
On the beaches
Of lost memories.
The sea swells
Like your bosom
With a loved loveliness.
An ache tides in me
From some subterranean shore:
Let my soul touch the sea,
Your spirit, O sea, sing in me. (pp. 140-141)

It seems as if Nandan wants to unite with the sea to seek relief from the sense of nostalgia. He gets lost in the memories of the past while viewing the movements of the sea. The memories arouse ache within him as they bring back the painful experiences of his past days. His desire to be one with the sea heightens the note of escapism.

The river looks like a sacred dream with sparkling waves creeping towards the sunless sea. For Nandan, it is a haven where he can retreat from all his strains and stresses. It is a paradise where his soul finds solace. The river is like a shell that encapsulates his priceless memories. Nadi has become the river of his imagination, the river of his childhood and youth. Nandan was aware of the sacredness of Indian rivers but he failed to find any connection between the holy rivers of India and the Fijian river Nadi. But after decades he finally wrote the poem "Voices in the River" to give some grace and definition to a fragmented but real-world and to establish a connection between the Nadi and the sacred Indian river the Ganges.

Nandan has incorporated the scapes of Fijian Airport in his poetry also. In another fine poem "The Journey"from the collection The Loneliness of Islands, Nandan has minutely described the setting of Fiji's Airport. He

observes the green fields of Sugar City. The windows of houses are barred and doors are twice locked. The street is thatched with rain trees. He could see Japanese cars moving on the streets. Black smoke is emitted by the sugar mill and "The vast chimney puffs like a bhoot". The smoke from the chimney has made the city dirty. Nandan then invokes William Blake and expresses the need for the brightness of the tiger. Viewing the sea, he writes:

The sea-waves glitter
The sun blends us all.
The ships sail on
Beyond Vuda Point,
Where Dearest Doc is buried.

The sea glistens under the Sun that shines equally for everyone. The ships sail beyond the Vuda Point, where Dr. Timoci Bavadra was buried. The village is cut off from the road and he could see some ships of foreign countries that seem to be wounding the native sea of Fiji. He describes the street scene where he could see vendors selling fish, lobsters, and crabs. The airport shines brightly in the sun. Nandan remarks:

Green fields, volcanic hills,
Dark vegetation, dyed hair on darker skulls.
Freedom shrinks in economy class.
The rainbow trout soars
The spirit is heavy laden,
Like that fat fellow
Who cannot fasten his seatbelt.

Nandan observes the scenic beauty around the Nadi Airport. The green fields, hills, and vegetation capture his attention. The rainbow trout, a vibrant fish, soars high as if seeking a new and better life full of hope. Using a simile, he compares the stout fish with a fellow traveller who is fat. He further discerns:

The island vanishes:
The sky is vast
Paradise dissolves in pumpkins,
In clouds of memories…
White, blue and black waves.
Between the churning seas
The turning plane
The world falls apart. (pp. 65-67)

As the plane goes higher into the sky, the island disappears and he can see the vast sky. The paradisical Fiji goes out of sight and remains a part of his memories. The waves keep variating and the world changes for Nandan forever as the plane takes him away from Fiji. The use of colour imagery is remarkable in the description of the waves. His dreaming heart longs for a vision and a new peaceful world which he could claim as his own.

Nandan is a keen observer of the natural scapes of Fiji. Nature in its serenity is quite imitational for him. Things incredibly intricate, beautiful, and vast all create connectivity with his past and present. They light up the corners of his mind as he comprehends the entirety of what he sees. This illumination results in lots of memories, ideas, and thoughts flowing all at once and finding a place in Nandan's works. Nandan portrays the beauty of Fiji in his lucid style. The island looks stunning when it turns pearl white at dawn; when it is clothed in powder-blue during the day and washed in silver-grey at night. The variant colours of nature paint the magnificent scapes of Fiji and make it look like a paradise.

The people of Fiji are used to Nature's disasters. They witness hurricanes, cyclones, and floods that destroy the entire settlements. Cyclones can occur throughout the year accompanied by strong winds, heavy rains, floods, landslides, and road closures. Fijians have become so normal with the ever-occurring natural disasters that after each stroke of cyclone or flood one can see people coming out of their broken homes, wishing each other and digging holes for new posts for a new home on another spot. Nature has its tricks to play and the Fijians have their ways to face these tricks.

Nandan's description of Fijian scapes is never merely empirical rather it encodes the concerns and interest of not only himself but also the readers. He often draws his lines on account of the natural and untouched landscape that exists outside of a human point of view. His landscape poetry is closely tied to visual art. He sees beyond the physical limit of a terrain. His portrayal of the landscape is visual and aesthetic as well as moral and political. His works draw our attention to the moral and the metaphysical as much as to the physical world. The intensity of natural disasters is artistically displayed by Nandan. He symbolically brings out the pathos of the homeless and displaced people. Literature is a form that shapes our place, consciousness and moulds our particular way of thinking. Nandan too finds refuge in literature, to give shape to his vision, views, and emotions.

In the literary works of Nandan, the Fijian scapes function as a background of place and time and also a theme. The scapes in Nandan's poems and prose are truthfully living characters that construct his identity in the land of his imagination and the land of his existence. Landscape and seascape become the medium of symbolic exchange between him and nature, the self and the other. He can frame an account of his life, to demonstrate his land, and with the aid of literary allusion make the landscape a contentious theme. For him, Fiji will always remain a place that is a paradise on earth, where he'll always stay free from the drudgery of life.

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Challenges and Opportunities for Higher Education in India: A Comprehensive Analysis

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Abstract

Education is one of the significant factor instruments to development of a country. It should be transformed to the needs of the time and changing scenario of the world. India needs more efficient and educated people to drive our economy forward.Challenges in higher education are no longer only nation centric. They Have already attained global dimensions, particularly after trade in serviced has been brought under the pervious of the WTO regime. The Indian higher education system is one of the largest such system in the world.

This paper is mainly focused on the overall performance of higher education system inIndia and it aims to identify emerging issues and challenges in the field of high educationinIndia.

Keywords:HigherEducation,Issues.

Introduction

Higher education is very important for all countries and mainly for a developing country like India and it is encouraging to increasing human development. India has produced scientist, engineers, technologist, doctors, teachers and managers who are in great demand all over the world.

Higher education provides opportunities to the people to reflect on the critical social, cultural, moral, economical and spiritual issue facing humanity. The education commission 1964-66 described the role of education in social and economic transformation through a statement-the density of a nation shaped in its class room. Education creates human capital which is the care of economic progress and assumes that the externalities generated by human capitalcare the source of self sustaining economic process.

"Our university system is, in many parts, in a state of disrepair… In almost half the districts in the country, higher education enrollments are abysmally low, almost two-thirds of our universities and 90 percent of our college are rates as bellow average on quality parameters… I am concerned that in many states university appointment, including that of vice-chancellors, have been politicized and have become subject caste and communal consideration, there are complaints of favoritism and corruption."

- **Former Prime Minister Manmohan Singh in 2007**

Higher Education in India

The table 1 reveals that there has been appreciable growth of higher education since 1951. Number of university level institutions and colleges have grown up from 28 to711 and578 to 40760 respectively from 1951 to 2015. As a result, the number of teachers as well as students has also increased significantly. Rise in enrolments and institutions at school level, there is mushrooming growth in higher education institutions at the end of 2015 there were 711 Universities and 40760 colleges in India. The table 1 shows that our education system is improving not only in number of colleges and universities but also in enrolment. Most of these universities have affiliated colleges where undergraduate courses are approved and taught.But Still,if we compare this improving start with increasing population, then we have to rethink,is it still improving.

Table 1

Growth of Higher Education Institutions and Their Intake Capacity in India

Year Institution & enrollment	1951	1961	1971	1981	1991	2001	2012	2015
No. of University	28	45	93	123	177	266	574	711
No.of College	578	1816	3227	4738	7346	11146	35539	40760
No.of Teacher (in000")	24	62	190	244	272	395	733	1261
No. of Students (in000")	174	557	1956	2752	4925	8399	22328	26586

Source: UGC Reports

Table: 2

Type wise number of Universities/University level Institution and Colleges On 31.03.2015

S.No.	Type of Institution	No. of Institution
1	CentralUniversity	46
2	StateUniversity	329
3	StatePrivateUniversity	205
4	Institutions Established Through State Legislation	3
5	Institutions Deemed to be Universities	128
	Total	**711**
6	**College**	**40760***

Source: UGC Reports

Graph -1
Type wise number of Universities/University level Institution and College

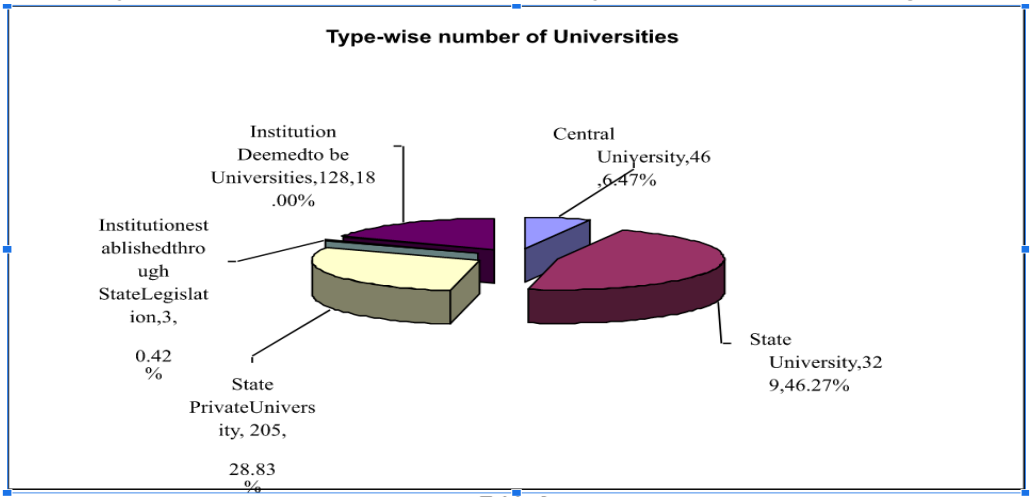


Table 3
All India Growth of Students Enrolment 1984-85 to 2014-15

Year	Total Enrollment	percentage
1984-85	3404096	2.9
1991-92	5265886	6.9
2001-02	8964680	6.7
2011-12	20327478	8.9
2014-15	26585437	**11.87**

Source: UGC Reports

Graph -2
All India Growth of Students Enrolment 1984-85 to 2014-15

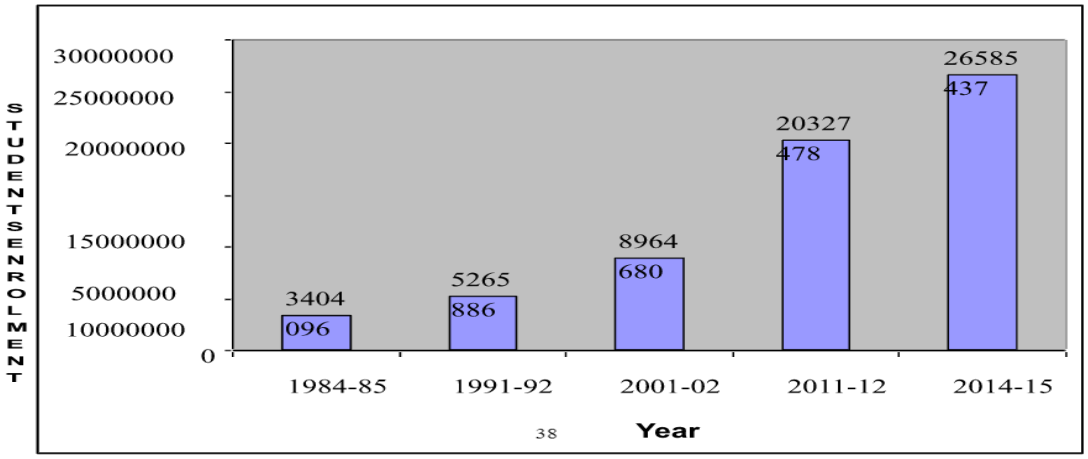
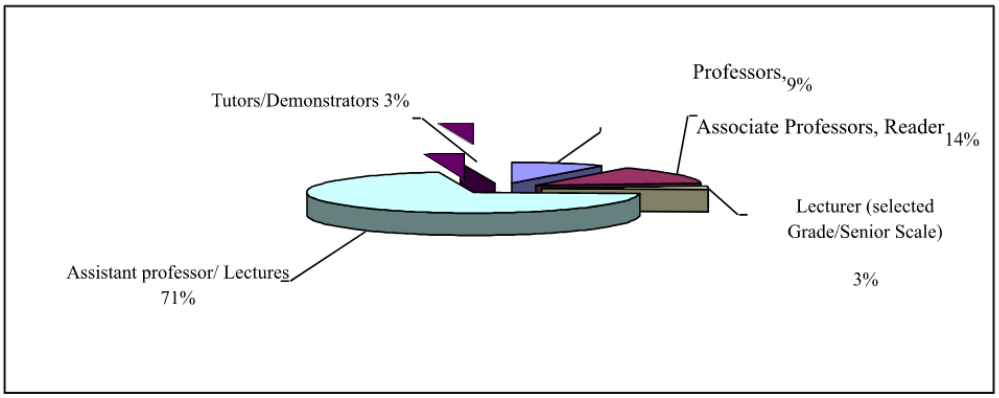


Table 4
Designation-wise Distribution of Teaching Staff* in Universities and Colleges:2014-15

Designation	Number
Professors	116268
Associateprofessors/Readers	176705
Lecturer(selectedGrade/SeniorScale)	34478
Assistantprofessor/Lectures	890809
Tutors/ Demonstrators	43090
Total	**1261350**

Source:UGCReports

Graph -3
Designation-wise Distribution of Teaching Staff* in Universities and College



Issues in Indian Higher Education

The present system of higher education does not serve the purpose for which it has been started. In general education itself has become so profitable a business that quality is lost in the increase of quantity of professional institutions with quota system and politicization adding fuel to the fire of spoil system, thereby increasing unemployment of graduates without quick relief to mitigate their sufferings in the job market of the country.So, the drawbacks of the higher education system underscore the need for reforms to make it worth while and beneficial to all concerned.

According to a study only 25% of engineering graduates are directly employable (Infosys,an IT giant, last year sorted through 1.3 million applicants only to find that around two percent were qualified for jobs.)Quality of education delivered in most institutions is very poor. While India has some institutions of global repute delivering quality education,such as (Indian Institute of Management) IIMs and (Indian Institute of Technology) IITs,we do not have enough of them.It has very narrow range of course options that are offered and education is a seller‟s market, where is no scope of incentive to provide quality education. There is clearly a lack of educated educators and teaching is not an attractive profession

Quantity And Quality in Indian Higher Education

“Report to the Nation 2006” of the National Knowledge Commission which concludes that there is “a quiet crisis in higher education in India that runs deep”(NKC,2007). TheIndian Prime Minister, Manmohan Singh, expressed concern over the fact that only 7 percent of India‟s18 to 24 year olds enter higher education (compared to 21 percent in Germany, and 34 percent in the US), announced plans for the government to setup at least one “central University” in each of the 16 (of India‟s 28) states that do not currently have one,and at least one degree-granting college in each of the 350 (of 604) districts that are without one. The “central universities” are to become “a symbol of excellence, a model of efficiency, and an example in terms of academic standards and university governance for other state universities emulate”(CHE,2007).

At the same time, the Prime Minister severely criticized in a recent speech the serious qualitative deficiencies in Indian higher education while at the same time announcing plans for a major expansion of the system. Reflecting on the findings of a confidential report by the National Assessment and Accreditation Council, which is affiliated to theUniversity Grants Commission (UGC), he expressed his concern over the fact that twothirds (68%) of the country‟s universities and 90 percent of its colleges are “of middling or poor quality” and that well over half of the faculty in India‟s colleges do not have the appropriate degree qualifications (CHE, 2007).

Staffing Higher Education

One of the key prerequisites is a large and highly capable pool of scholars who can provide academic leadership in teaching and research. Many of these scholars already exist or are moving into the ranks of the professoriate at the better Indian (and foreign) Universities; many more will be needed to satisfy the growing demand and to take the place of the large numbers of college and university faculty who are not up to the standards of an internationally competitive system of higher education (Sinha 2002).

To judge from the existing analyses of the situation, the achievement of this goal appears to require a combination of several different strategies, including

1. A change in the criteria for academic recruitment and promotion,
2. Significant improvements in the economic condition of the academic teaching profession,
3. A very ambitious program for the identification, training, support and placement of young scholars,and
4. A major effort at repatriating success ful Indian scholars from abroad (NKC2007).

None of these measures is easy; all of them will have to overcome deficits where standards for academic recruitment have been rather lax or arbitrary(Khemani et al,2006), where the remuneration of teaching in higher education has been rather dismal (compared to opportunities both abroad and in the private sector) (Khemani et.al,2006), where graduate and doctoral programs have been short on capacity, academic rigor,and financial support (NKC 2007), and where the increasingly intensive efforts to bring Indian scholars back from abroad havesofarmet with only limited success.

Now there is an urgent need to work for the development of the educational sector to meet the need of the emerging opportunities, increasing younger generation population and challenges of the 21st century. According to Prime Minister of India Dr. Manmohan Singh„ The time has come to create a second wave of institution building and of excellence in the fields of education, research and capability building". We need aneducational system that is modern, liberal and can adapt to the changing needs of achanging society, a changing economy and a changing world. The thrust of public policy for higher education in India has to be to address these challenges. However, one university can"t make much difference.If the government welcomes more such initiatives, the future will be ours. We will be able to match and compete with other countries and the dream to be the world's greatest economy won"t be difficult to achieve.

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Determination Of Genetic Diversity In Some Citrus Species By Molecular Markers

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Abstract

Markers are any trait of an organism that can be identified with confidence and relative easy, and can be followed in a mapping population on another hand markers be defined as heritable entities associated with the economically important trait under the control of polygenes. Application of molecular markers, have now been increasingly adopted to address the problems in Citrus taxonomy. Compared to morphological data, molecular tools provide abundant information, highly efficient and are insensitive to environmental factors. Molecular markers has provided an ideal means for identifying genotypes, estimation of relatedness between different accessions and following inheritance of economically important characters. In Citrus, a wide variety of DNA based markers has been used in order to study their genetic variation as well as phylogenic and taxonomic relationship among different genera. RAPD markers provide a fast and easy approach for taxonomic classification and cultivar typing of Citrus fruits. SSR have proven to be the marker of choice in Citrus breeding research, because of their variability, ease of use, accessibility of detection and reproducibility. ISSR, SRAP, CAPSSNP, AFLP are also used to study the genetic diversity of Citrus throughout the world.

Keywords: Citrus, Genomics, Molecular characterization, Molecular markers, AFLP, ISSR, RAPD, SSR, Polymorphism, Genetic diversity.

Introduction

The genus Citrus L. belongs to the subtribe Citrineae, the tribe Citreae within the subfamily Aurantioideae of the Rutaceae family[1]. The Aurantioideae is one of seven subfamilies of Rutaceae which consists of two tribes and 33 genera. Each of tribes Clauseneae and Citreae is composed of three subtribes. Many of Citrus cultivars are very closely related, apparently having diverged by mutations that alter specific horticultural traits. In addition, many Citrus cultivars produce apomictic seedlings and nucellar seedlings that differ in horticultural traits. Similarly, the level of difference in relation to species status in Citrus is uncertain. Consequently, there has been no consensus among the taxonomists as to the actual number of species that constitute the genus Citrus. In addition, taxonomic characterization leading to unambiguous identification of Citrus species and their genetic resources are essential requisites for Citrus breeding. To this end, molecular markers based on DNA sequences are being widely used in studying polymorphism between species or in populations. The application largely depends on the type of markers employed, distribution of markers in the genome, type of loci they amplify, level of polymorphism and reproducibility of products[2-3]. Use of molecular markers has more advantages than that of morphologically based phenotypic characterization, because molecular markers are generally unaffected by external impact. It is possible to compare accessions of a collection at any time of year using molecular markers, while phenotypic characteristics can be influenced by environmental or cultural affects (The Citrus and Date Crop Germplasm Committee, USA, CDCGC, 2004). Regarding to germplasm management molecular characterization has a number of applications such as relationships between accessions, characterizing newly acquired germplasm, monitoring shifts in population genetic structure in heterogeneous germplasm, exploiting associations among traits of interest and genetic markers and genetic enhancement.

These molecular markers include: (i) hybridization-based markers such as restriction fragment length polymorphism (RFLP), (ii) PCR-based markers: random amplification of polymorphic DNA (RAPD), amplified fragment length polymorphism (AFLP) and microsatellite or simple sequence repeat (SSR), and (iii) sequence-based markers: single nucleotide polymorphism (SNP). The majority of these molecular markers has been developed either from genomic DNA libraries (e.g. RFLPs and SSRs) or from random PCR amplification of genomic DNA (e.g. RAPDs) or both (e.g. AFLPs). These DNA markers can be generated in large numbers and can prove to be very useful for a variety of purposes relevant to crop improvement. For instance, these markers have been utilized extensively for the preparation of saturated molecular maps (genetical and physical). Their association with genes/QTLs controlling the traits of economic importance has also been utilized in some cases for indirect marker-assisted selection (MAS)[4-5].

Materials and Methods

Plant Material

Plant material for genomic DNA isolation was collected from identified populations of *Citrus species*. Leaves were brought in the laboratory in liquid nitrogen and stored at - 20ºC in zip lock bags. The leaves were subjected to the extraction of genomic DNA by minor modifications in CTAB method [6].

DNA Isolation Protocol

Fresh green leaves weighing 0.5 g were de-veined and grinded to a fine powder in mortar pestle using liquid N2. A 60 ml homogenization buffer stock was prepared by adding9ml 150 mM Tris-Cl, 3 ml 25mM EDTA, 18ml 1.5 M NaCl (all at pH 8.0) to 30 ml of DDW, and warmed at 65ºC. 2.1g CTAB and 1.8g PVP was added to the pre-warmed solution, 180 µl Beta Mercaptoethanol was added prior to the process of homogenization. The fine leaf powder was then suspended in 3 ml of pre-warmed CTAB solution. This 3 ml suspension was transferred to a sterile centrifuge tube & 20 µl of RNase was added to it.

The solution was incubated for 45 minutes at 65ºC with gentle inversions. The tube was then cooled to room temperature & 3 ml of Chloroform: IAA ratio (24:1) was added to it. The tube was inverted gently 20-25 times to form an emulsion. The emulsion was centrifuged at 10,000 rpm for 10 min. at RT. The upper aqueous layer was pipette out, transferred into sterile centrifuge tubes without disturbing the interphase. 3 ml of 3M NaCl was added to the aqueous phase and once again subjected to centrifugation at 10,000rpm at RT. 0.6 volumes (1.8 ml) Isopropyl alcohol was added to the aqueous phase, mixed well and incubated for 30 min. at RT.

The solution was centrifuged at 10,000 rpm for 15 min. at RT.

The supernatant obtained was gently poured off. The pellets obtained were washed thoroughly with 750 µl of 70% ethanol & spun at 10,000 rpm for 5 minutes. The supernatant was discarded and the white pellet obtained was air dried (~45 min), & then re-suspended in 30 µl of TE (10 mM Tris HCl+ 0.1 mM EDTA; pH 8.0) at 4ºC. 3M sodium chloride solution was again added to the T.E. Buffer + DNA solution and reprecipitation was done with ethanol.

The sample was centrifuged at 10,000 rpm for 15 minutes and pellet was redissolved in TE buffer. The process was repeated three times. This method allowed recovery of good quality DNA, suitable for complete restriction digestion was amplified in PCR as compared to other methods.

Data Analysis

The data was scored as “1” for the presence and “0” for the absence of band for each primer sample combination for ISSR analysis. A dendrogram was constructed using the unweighted pair group method with arithmetic average (UPGMA) with the SAHN model of the NTSys-PC software to show a phenotypic representation of the genetic relationships as revealed by similarity coefficient [7].

Results and Discussion

Assessment of Genetic Diversity based on ISSR primers

The genomic DNA extracted from all the sample populations was subjected to analysis using the ISSR primers, which yielded maximum reproducibility. The data obtained from the agarose gel electrophoresis of these ISSR profiles were then analyzed in the NTSYS-Pc (Numerical Taxonomy and Multivariate Analysis System) and the results were obtained as cluster analyses based on UPGMA and Jaccard’s Similarity Matrices that varied for each primer involved.

Cluster Analysis of ISSR primer AG8YC GD

A dendrogram is a branching diagram that represents the relationships of similarity among a group of entities. The horizontal axis of the dendrogram represents the distance between clusters. Each joining (fusion) of two clusters is represented on the graph by the splitting of a horizontal line into two horizontal lines. The horizontal position of the split, shown by the short vertical bar, gives the distance (dissimilarity) between the two clusters. The row dendrogram in Fig. 1 has been constructed using un-weighted pair group method with arithmetic averages (UPGMA) with a SAHN module of NTSYS- software for pc. It shows a phenetic representation of genetic relationships as revealed by the similarity coefficient.

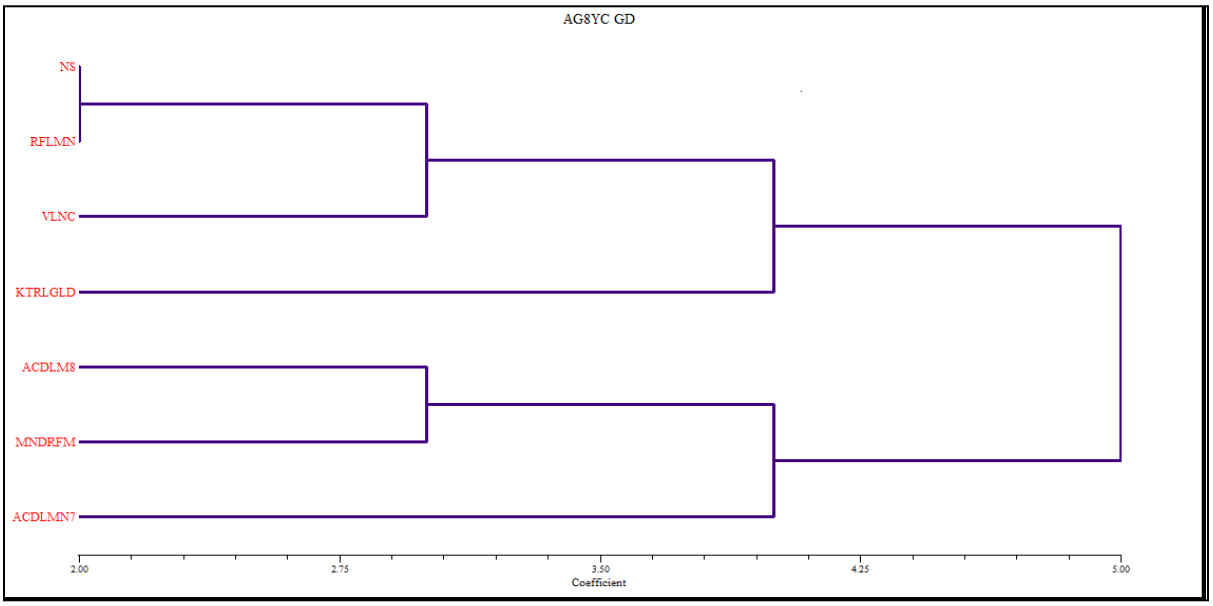

Figure 1 Dendrogram generated using un-weighted pair of group method with arithmetic average analysis (UPGMA)

Cluster Analysis of ISSR primer GA8YG

The cluster constructed through NTSYS software presented in the form of dendrogram in Fig. 2 illustrates the overall relationship among the various populations using the patterns generated by ISSR primer GA8YG. It shows a phonetic representation of genetic relationships as revealed by the similarity coefficient.

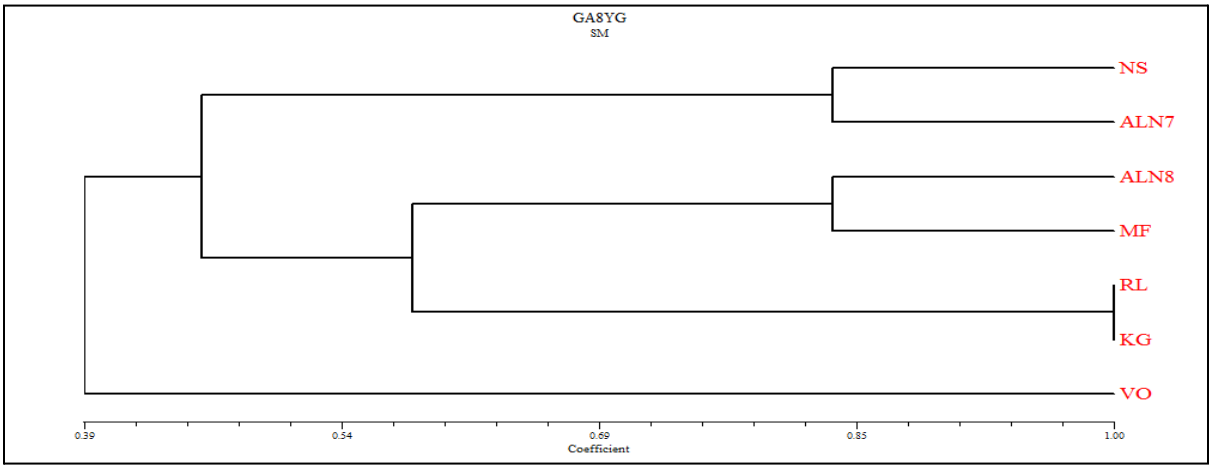

Figure 2 Dendrogram generated using un-weighted pair of group method with arithmetic average analysis (UPGMA)

Table 1 Similarity matrix for Nei and Li's Coefficient 8 Species of *Citrus*

	NS	VLNC	ACDLM8	RFLMN	KTRGLD	ACDLM7	MNDFM
NS	1.00						
VLNC	0.33	1.00					
ACDLM8	0.33	0.33	1.00				
RFLMN	0.33	0.33	0.66	1.00			
KTRGLD	0.33	0.33	0.66	1.00	1.00		
ACDLM7	0.83	0.50	0.50	0.50	0.50	1.00	
MNDFM	0.50	0.50	0.83	0.50	0.50	0.66	1.00

Jaccard's pair-wise similarity coefficient values among all the populations of *Citrus species* using all the ISSR primer profiles generated vary between 0. 55 and 1.00 as shown in table 1 similarity which happens to be the least in terms of similarity coefficient data for all ISSR profiles has been observed. The highest similarity coefficient of 1.00 or 100% similarity is observed between RFLMN and KTRGLD.

Based on the phylogenetic analysis with RAPD and ISSR Almost all of the cultivated citrus belong to the subgenus *Citrus*, and Barrett and Rhodes (1976) suggested that they should be derived from 3 true species[7] . Our results support this hypothesis since citron, pummelo and

mandarin can be placed into three distinct clusters. A hybrid origin of citron and mandarin was found for Rough lemon and Rangpur lime, but 5 and 7, respectively, "extra markers" present in the 2 genotypes imply that one or both direct parents were not included in the present analysis.

Clementine was previously assumed to be a hybrid between mandarin and sweet orange [8].Here, data on this genotype, together with Tankan and Satsuma, supports this assumption. The uncertainty of sweet or sour orange as a parent of Murcott and King could be caused by the insufficient number of mandarin or orange accessions analyzed. In the above 5 genotypes, most of their markers were in common with mandarins, but about 70–80% of these markers were also present in orange. This may be a result from backcross events between orange and mandarin.

Conclusion

In summary, the combination of different kinds of molecular markers proved to be a powerful tool in carrying out a more complete analysis of citrus phylogeny and origin. Obviously, if more genotypes, especially wild types, were included in the study, it would have been possible to determine more precisely the parents of these selections.

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Neurotransmitters Such as Endorphins Elevates Quantitatively Through Yoga to Manage Stress Levels of Body

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The discovery of Electronics followed by its implications in day to day life has speeded up the working culture of humans to a very large extent. The world is moving at fast pace and people observe lots of worries and difficulties in handling life. To cope up with current scenario, the age old stress releasing strategies are at their retrials and we are getting more familiar to yoga. Practicing Yoga provides stress-free body with rise of happy moods. Yoga triggers brain to release specific chemicals called neurotransmitters- Endorphins being one of them. Endorphins secreted by Pituitary gland and Hypothalamus are chemicals or hormones that are released when our body feels pain or is heavily stressed. Yoga, massage, exercise, sight of good food or act also helps in release of Endorphins. These make us feel happy. The chemistry within our mind works in such a way so as to improve the lower level of mood to elevated one. The neurotransmitters and some hormones help our brain to understand, evaluate and communicate. Many hormones such as serotonin, Dopamine, Endorphin, Oxytocin are also said to be happy hormones as they manage our happiness levels. They promote healthy social interactions and feeling of being well. The proper functioning and release of such chemicals and hormones can be controlled through Yoga which can lead to a decline in depression cases being observed throughout the world.

Keywords: Endorphins, Yoga, Neurotransmitters, Pituitary.

Introduction

There is still a paucity of information regarding management of neurotransmitters within body as a whole. Enough documentation is not available related to release and effect of neurotransmitters. Endorphins[2] (contracted word from endogenous morphine) are peptides produced in the brain that block the perception of pain and increase feelings of wellbeing.These are produced and stored in the pituitary gland of brain.These are endogenouspainkillers rather inhibitors which are often produced in the brain and adrenal medulla during the course of physical exercises and inhibits pain, muscle cramps, and releases stress. Researches have demonstrated that meditation by trained individuals or Yoga Experts can be used to trigger Endorphin release. Laughter improves mood .It may also stimulate endorphin production and elevate one's pain holding threshold. Similarly acts of power-walking/brisk walking, swimming, dancing, hiking, and other power packed acts release endorphins.Endorphins are boosted by exercising, eating, sexual activity,massaging and other feelgood acts that puts oneself in a positive state of mind.These relieve pain and stress levels. Endorphins are creations of pituitary and hypothalamic glands located in brain. Endorphins attach to brain's reward centres (opioid receptors) and carry signals across the nervous system.

Working of Endorphins

The research on Endorphins suggest that the opiate –like peptides may be playing a role in global response of the organism to stress. Endorphins and ACTH may be functioning in parallel in peripheral target organs and in brain. The co-ordinated action of Endorphins and ACTH allows production of adaptive behaviour towards stress.[5]

Endorphins[1] are all synthesized from precursor protein, propiomelanocortin. These contain a Met-enkephalin motif at their N-terminus:Try-Gly-Gly-Phe-Met

Endorphins bindμ-receptors[3] of peripheral nerves, which block their release of neurotransmitter substance –p. This essentially turns off pain- feeling, and allows oneself to continue functioning/ working even in pain full and stressed conditions.The mechanism in C.N.S. is similar but works by blocking a different neurotransmitter Gamma-amino butyric acid (GABA). In turn inhibition of GABAincreases the production and release of Dopamine, a neurotransmitter associated with reward learning.The three different major types from almost twenty different types of Endorphins are-

Alpha(α)-Endorphins: Sequence is
Tyr-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Pro-Leu-Val-Thr-OH

These are found in anterior and intermediate pituitary

Beta (β)-Endorphins: Sequence is
Tyr-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Pro-Leu-Val-Thr-Leu-Phe-Lys-Asn-Ala-Ile-Ile-Lys-Asn-Ala-Tyr-Lys-Lys-Gly-Glu-OH

It shows affinity to opiate receptors and is said to be primary endorphin released from pituitary. These make us feel relieved from stress and pain.On a molar basis ,Beta endorphins are 18-33 times more potent than morphine and its action are blocked by the specific opiate antagonist, naloxone hydrochloride.

Gamma(ϒ)-Endorphins
Tyr-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Pro-Leu-Val-Thr-Leu-OH

This is similar to alpha type except for Leucine added to alpha sequence

Discussion

Relating to a case study[4] of twenty five year old woman who had consumed her grandmother's anti hypersensitive medication(A 25-year-old, Hispanic woman with no significant medical history took approximately 90 tablets of her grandmother's antihypertensive medication Tribenzor™, a combination antihypertensive product that

contains olmesartan, amlodipine, and hydrochlorothiazide (40/10/12.5 mg).reported by Celine Zhong* , Charles F Seifert Department of Pharmacy Practice, Jerry H. Hodge School of Pharmacy, Texas Tech University Health Sciences Center, 1718 Pine Street, Abilene, Texas, USA) which led to dip in blood pressure 100/50,rise in Heart and respiratory, Oxygen saturation and other complications -as reported in paper "The patient presented to the Emergency Room (ER) 2 hours after ingestion. On first evaluation, the patient was alert with a Blood Pressure (BP) of 100/50, Heart Rate (HR) 113, Respiratory Rate (RR) 18, oxygen saturation (O2 Sat) 96% on 4 liters of oxygen. The patient's BP progressively declined and she was intubated for airway protection and started on assist control mode for ventilation. The ER course of treatment consisted of gastric lavage, 2 grams of intravenous calcium chloride, 50 g of activated charcoal through orogastric tube, 4 liters of normal saline boluses, norepinephrine infusion (15 mcg/kg/min titrated up to 150 mcg/kg/min while in the ER), and an insulin drip (8 units/hr, titrated up to 30-40 units/hr). A dextrose infusion was initiated to maintain euglycemia. Normal saline boluses and a norepinephrine infusion were both started for blood pressure support. After two hours, she was transferred to the Medical Intensive Care Unit (MICU) for further management "This patient exhibited decreased mentation and was hemodynamically unstable requiring intubation for airway protection. Refractory hypotension was initially treated with fluid boluses, and then treated with intravenous calcium, high dose insulin infusions, dextrose, glucagon and vasopressors. Administration of intravenous calcium is a standard treatment option but its clinical efficacy has not proven to be consistent and specific dosing recommendations are not known [1,10]. Close monitoring of the serum or ionized calcium concentration every two hours and serial ECGs are necessary to avoid clinically significant hypercalcemia. Concluding remarks were-Calcium Channel Blockers are being increasingly used for treatment of hypertension and are often combined with other antihypertensive medications in a combination pill. CCB overdose may cause severe hypotension along with bradycardia, pulmonary edema, renal failure and other signs of heart failure. After almost 13 days admission to hospital, patient could recover to get discharged.

Conclusion

Endorphins are mood boosters, and work elevators.These help reduce depression which is a matter of deep concern nowadays. The stress and anxiety levels are also decreased. The good working and good responsive behaviour in our surroundings improves our compatibility with peer members and creates a sense of self- esteem. Healthy mood keeps a check on healthy eating so extra Gourmetous (eating high caloric and unrequired food) behaviour is avoided and we eat balanced amounts and remain healthy with check on weight as well. People who do not produce enough Endorphins show signs of Depression (which leads to self-injuries and suicides in extreme cases), anxiety, body aches (chronic pain throughout body is referred to as Fibromyalgia),loss of sleep. Doing acts of one's choice helps improve endorphin level such as gobbling dark chocolates, making art,playing/singing/watching favourites. Endorphins provide pain relief and stress management.

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Social Forestry

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Abstract

Forests and wildlife are essential for ecological balance of an area. Forests are an important renewable natural resource. Forest contributes substantially to the economic development of a country by providing goods and services to the people and industry.

Degradation of forest resources aggravated further the problem of poverty, unemployment and security of food, fuel, timer etc. among society. This felt a need to undertake free plantation programmes involving these rural poor, mainly to meet their own needs from the forestry not only helps in rehabilitation of degraded land but also provides opportunities of employment to rural poor. According to FAO (1978) Social (community) forestry is the programme which intimately involves the local people in afforestation.

Keywords : Forest, Wild Life, Social forestry, Fodder, Afforestation.

Introduction

The protection and conservation forest resources are not only desirable but also necessary for the economic development of a nation and maintenance of ecological balance at national and global levels. The National Forest Policy of India for proper management and conservation of the forest resources of the country as follows

1. Classification of forests according to functional aspects into protected forests, reserved forests, village forest etc.
2. Expansion in the forest covers by planting trees in order to ameliorate the physical and climatic conditions for the welfare of the people.
3. Provision for ensuring progressive increasing supplies of fodder for animals and timber for agricultural and domestic uses and firewood to local inhabitants nearer to the forests,
4. Opposition to reckless extension of agricultural land at the cost of forest land,
5. Extension for forest area by massive plan of tree plantation on a large-scale at war footing so as to bring 33 percent of the country's geographical area under forest etc.

The traditional forestry is mainly involved in the protection, where as social forestry is concerned to welfare of the society particularly the rural poor who depends for most of their livelihood needs on forest Community forestry or social forestry thus not only helps in rehabilitation of degraded land but also provides opportunities of employment to rural poor, according to FAO (1978) Community forestry is the programme which intimately involves the local people in afforestation, irrespective of the pattern of land ownership.

The first and fore most task to conserve forests is to protect the existing by greedy economic man. This task legislation and by are using public interest in the importance of the forest resources since ancient times forest have been a substantial support to rural economy of India. Over 60% dependent on forests for fuel, fodder, food, fibre, timber and medicines etc. moreover, forests also provide job to roughly 20 million people round the year through collection of non-wood forest products (NWFP) and for over 50-60million people, forests are a part of their culture and a natural way of life.

In India the traditional Communities had been living comfortably in perfect harmony with the forest using them judiciously to meet their needs following proper management practices. However with increasing growth of human and livestock population unable to meet their basic needs from agriculture many unemployed and poor families turned to forests not for fooden and fuel, but also to generate cash income through sale of wood out other forest products. Vested interests also took this opportunity to exploit forests for commercial purposes.

A part from biotic pressure the following factors also contributed deforestationresources GOI. 1984)

1. Increase in human and livestock populations;
2. Poor management of forest soils;
3. Inadequate scientific and technical inputs;
4. Inadequate skills and training of the staff to play their expected new roles;
5. Poor investment on forest development;
6. Damage caused by mining, irrigation projects, industries, roads and jhum cultivation.

The abuse of forests continued unchecked till mid-1970s, when the ill-effects of deforestation were prominent in the form of fodder and scarcity, loss of precious flora and fauna and climate change.

The rural poor, particularly the women, who are primarily responsible for fetching water, fodder and fuel, were faced with severe drudgery. The community felt that while it was the responsibility of the Forest Department to manage the forests, it was their inherent right to collect fodder, fuel and other products from the forests, without any obligation. Planting of trees for fodder and fuel was never considered by the farmers as a necessity. Meanwhile, faced with shortage of biomass, many village communities resisted the extraction of wood from the forests for commercial purposes. This led to the involvement of rural communities in forestry development programmes in India.

In 1976, the National Commission on Agriculture in India introduced the concept of social forestry to encourage those who were dependent on fuelwood, fodder and other forest products, to meet their own needs through various activities, in order to reduce the burden on forests. This concept was further refined by FAO in 1978, by defining community forestry as the programme which intimately involved local people in afforestation, irrespective of the pattern of land ownership.

Scope and Future of Social Forestry

Community forestry programmes include a wide range of activities such as growing trees on farm bunds and roadsides, developing woodlots on common properties and collection, processing and management of forest products by involving local communities. Realising the problems of poverty and unemployment closely linked with denudation of natural resources, scarcity of fuel, fodder and timber, the government of India in their Sixth Five Year Plan (1980-85) aimed at generating rural employment through social forestry and thereby reducing property from 48% to 30%. It was also intended to produce adequate fodder and fuel to meet the needs of the poor, particularly in forest deficit areas.

Various activities of social forestry programme are as follows:

1. Creation of woodlots in the village commonlands, government wastelands and panchayat lands.
2. Planning of trees on the sides of roads, canals and railways. This, along with planting on wastelands is known as 'extension' forestry, increasing the boundaries of forests.
3. Afforestation of degraded government forests in close proximity to villages, which have experienced the unauthorized harvesting of biomass
4. Planting of trees on and around agricultural boundaries, and on marginal, private lands, constitution farm forestry, or agro-forestry, in combination with agricultural crops.

The social forestry programme must focus on the following:

1. Enhancing the productivity of natural resources, while augmenting the basic needs of the community.
2. Empowering the local communities to initiate the process of planning and programme implementation at the micro-level to promote afforestation for income generation and ecological conservation.
3. Improving productivity of private land through agroforestry. Since over 70% of our crop land depends on rainfall, yields are very low. Tree based farming must be promoted to improve land equivalent ratio and crop yield. Planting of fruit trees and NWFP may give higher income than timber and industrial wood plantation.
4. Wood production should continue to be the priority. For good quality wood, priority should be to promote cultivation of timber and industrial wood on degraded agricultural lands and community wastelands.
5. A part from producing fuelwood as a by-product in commercial plantations, fast growing fuelwood species of short gestation can be introduced on field bunds and as mixed crops with commercial wood species.

Effects of Deforestation on Environment

Deforestation has also increased the rate of Aeolian erosion through deflation and desertification through desert spreads. Many of the tribal areas of the forested land of India have lost the forest stands in their immediate surroundings and thus are facing the acute problem of fuels and fodder. The destruction and alteration of habitats due to deforestation caused ecological imbalance in the region concerned.

Deforestation gives birth to several problems encompassing environmental degradation through accelerated rate of soil erosion, increase in the sediment load of the rivers, siltation of reservoirs and river beds, increase in the frequency and dimension of floods and droughts, changes in the pattern of distribution of precipitation, intensification of greenhouse effects, increase in the destructive force of the atmospheric storms etc; economic loss through damages of agricultural crops due to loss through damages of agricultural crops due to increased incidence of floods and droughts, decrease in agricultural production because of loss of fertile top soils, decrease in the supply of raw materials to the industries and building materials (timber) to the urban and rural areas, marked decrease in fodder to animals etc. and social problems in the form of economic poverty, crimes and increased legal litigation.

As already stated forests are natural umbrella for ground surface because these protect the ground surface from erosion caused by falling raindrops and control radiation balance of the earth and the atmosphere by consuming increased amount of carbon dioxide released from everincreasing 'human volcanoes' (chimneys of the factories) and thus prevent the earth from becoming too hot. Removal of forest cover exposes the ground surface to the atmospheric processes. It may be pointed out that forests intercept falling raindrops and thus split them and reduce their (of raindrops) kinetic energy. Intercepted rainfall reaches the ground surface slowly in the form of 'aerial streamlets' through the leaves, braches and stems of trees. Thick leaf litters on the ground surface after decomposition provide humus content to the soils and also make the soils fertile. Thus the ground surface allows maximum infiltration of rainwater and minimum surface run off.

Various social forestry schemes launched in different parts of the country become apparent. The Social Forestry Departments had great difficulty in mobilizing local participation.

Conclusion

The forestry programmes of 1980s infect generated a lot of awareness among the local people. Several programmes proved successful at micro-level and motivated the rural people in large scaled due to increasing demand of wood for fuel, industry, housing and agriculture every year. Thus biomass production deserves high priority in social forestry. Realsing this need, emphasis was laid on joint forest management which involves peoples organizations to launch tree plantations both on forest and non-forest lands.

Thus success of social forestry programme was also influenced by political commitment, correct assessment of local needs, appropriate technology, and system of providing incentives, suitable local organizations and support services for finance management, research and extension. Thus Govt. of India emphasized that social forestry programmes had good potential to support the rural economy.

A Study of Cultural Aspects in Vikas Sharma's Novel *498A: Fears and Dreams*

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Abstract

A collective set of beliefs, values, norms, customs, etc. that defines how we behave and what we are, may be called culture. It is the way of living in any particular region, society, and continent. Culture encompasses the social behaviour, institutions found in human society as well as the knowledge, convictions, arts, laws, capabilities, and habits of people. Men acquire culture through the learning processes of enculturation and socialization, which is shown by the diversity of cultures across societies. *498A: Fears and Dreams* (2022) is a novel by Vikas Sharma, one of the emerging authors in the present era. The novel deals with various cultural aspects and issues existing in modern-day society. The plot of the novel is set in India and America; hence it includes cultural trends with similarities and contrast of both countries. This paper examines the cultural aspects prevailing in Indian and American society through various characters like Jatin, Tanvi, Sophia, and Joseph of the novel. Moreover, it also studies the dynamic nature of culture and society.

Keywords: Culture, beliefs, customs, socialization, knowledge, society, etc.

Introduction

Culture is the thoroughfare of biding in any exclusive region or society. It has been asunder in various countries in pursuance of the geographical and topographical conditions. Beliefs, convictions, rituals, languages, cuisines, etc. transmogrify across the globe. People enjoy their own trends and traditions with great enthusiasm and want to intersperse that approach as much as they can. Way of living defines culture and traditions in societies that's why advanced and developed regions have different cultures and undeveloped and backward areas are orthodox in their own cultural identity. Kluckhohn and Kelly defines it-

"*A Culture is a historically derived system of explicit and implicit designs for living, which tends to be shared by all or specially designed members of group."* (web)

A debate always exists in the intellectual world about the supremacy of culture. Endeavours have been made for centuries to prove the supremacy of a culture over others. But it is well acknowledged that there is nothing good or bad but mind-set makes so. In literature, writers have consistently been dealing with cultural aspects of every region that exists within the globe.

Main Text

Vikas Sharma, an emerging author of India, has delineated the cultural aspects of Indian society in many of his novels. *498A: Fears and Dreams* (2022) is a novel that deals with several social issues with an exceptional focus on the dowry system prevalent in Indian society. It is an evil that hollows the roots of Indian society like termites. The story of the novel deals with this issue of dowry and misuse of the Indian legal system through article 498A of the Indian Marriage Act. The story contemplates around the marriage of Jatin and Tanvi, the main characters of the novel. Jatin belongs to the small town Khatauli and his parents live unpretentious life due to their limited resources. His father, a lecturer, is able to endow enough education to his children but he cannot afford luxurious life. Jatin is ambitious and wants to do something extraordinary to support his family economically. He is a believer of Indian culture and traditions and agrees to get married in accordance with the wish of his parents. It apparently endows a tidings that he esteems Indian values and rituals. The marriage of Jatin with Tanvi, an ordinary girl, is performed with Hindu tradition. The marriage ceremony is arranged by both the family of the boy and the girl. Besides, the author has knitted a few more marriage ceremonies of minor characters which again show the significance of culture in Indian society. After all, marriage is a social as well as family responsibility and both partners must have respect for each other. At the same time, there is no wisdom in leading a cat and dog life. Quite often the white lady gets married to a black young man and then curses the day when she decided to marry him. (P-12) Such a phenomenon happens in common life but in this novel, it is a different matter. Jatin, who gets divorced from Tanvi after a few months of their marriage, settles in America and adapt to its culture accommodatingly. He, there, gets married to a white American girl, Sophia who has a charming body with high intellect. Jatin and Sophia mingle with each other's culture readily. On the one hand, Jatin becomes curious about learning the English language in American tunes, other hand Sophia enthusiastically engages herself in various activities which can favour Jatin's heart. The character of Jatin explicates how Indian values, tradition, and culture can be continued even after being on a foreign land. Although Jatin converts himself into Joe Beverley there still have faith in cultural identity.

In India, it is very usual to arrange a marriage of boys and girls. It is our value in India. Several characters,who get married, in *498A Fears and Drams,* carry this trend of Indian culture. In America, most of the marriages are love marriage in accordance with the choice of boys and girls. The scenario is completely different in western countries. In the novel, this aspect of culture has been depicted aptly. Sophia, the wife of Jatin or Joe Beverley carries the dreams of Joseph, her uncle who died of a heart attack. Joe and Sophia collectively set shoulder to wheel to fulfil the last wish of Joseph. The last dream of Joseph was to build an educational institution in America. To fulfil their dream, Joe and Sophia make endeavours to establish a university and medical college. This courage and wish to achieve the dream of

parents is an inseparable part of the culture in many countries including India and America. Both characters never misprise their parents teachings and values in the stride of attaining fame and recognition.

Language, values, customs, and art are also significant components of culture. Without arts, it is unaccomplished to discuss cultural aspects. In this novel, this aspect of culture attains more curiosity. Jatin, who completed a diploma to get a job, settles in the USA and there also acquires knowledge while asked by his father in the later part of the novel. When Jatin discusses the expansion plan of Degree College and University with his father from America to India through a phone call, the latter warned him:

> *You are untrained in the field of education. Look before you leap. Always consult your seniors if any. Leave much for Sophia as she has taken Masters Degree from New York University. Also, pay attention to American manners as modern guys rarely bother for university degrees.*(p,123)

These statements explain how the father of Jatin is concerned about the cultural values of both countries. On the one side, he suggests his son to follow the rules and regulations of American society, on the other hand, also respects the artistic and literary values of Sophia as she is a well-educated and aware local system in the United States.

The discussion between Jay, who is in the United States to pursue his M.Sc. in Nano Technology, and Procne, sister of Sophia has some cultural aspects as well. While discussing about India, Procne curiously interrogates Jay, "*What are the worth seeing places in India if I happen to visit your country?"* Jay, without wasting time replies:

> *You may enjoy seeing the Red For in Delhi, and Agra, the Taj Mahal, the Jama Masjid, the Qutub Minar, the Hawa Mahal of Jaipur, Falls on Mount Abu, Gometeshwar Temple, Mysore Palaces, Gwalior Palaces, Tomb of Chand Bibi in Aurangabad, etc.* (135).

This statement of Jay represents the beauty of Indian culture. Having asked about the sightseeing, Jay mentions several places of historical significance along with the name of temples and royal palaces. Above-mentioned places are the symbols of Indian culture and heritage. Through temples, Masjids, royal places,pageants of Indian culture can be enucleated, hence Jay suggests these cultural places to Procne, an American beautiful young girl, who is also curious about Indian culture. She also asks Jay to prepare something to eat because she feels hungry. In this way, shewants to calibrate whether Jay know how to do kitchen work or not. But Jay politely accosts that he would put all endeavours to prepare a fantastic coffee for her. Through this conversation, the author wants to state that India has a splendid cultural legacy and we just need to preserve and protect it. Through the character of Jay, he promotes and exposes the significance of Indian culture.

Fredrick, the wealthy son of a textile mill owner in Indonesia joins the same University with Jay. He takesthe admission for fun and frolic. After a few days of admission, Fredrick begins to enjoy life fully as many pleasures were available in the streets of New York. He believes that you get life only once. *Why not to enjoy it?* (128). Jay is dedicated to his study while Fredrick keeps on enjoying life in cities with wine and girls. When Jay asks him to study and tries to stop him from lavish life, he replies, "*Books can't be applied in daily routine. Experience counts in job and not bookish knowledge."* (128). This indicates the mind set of Fredrick who actually representsa modern dynamic society where youths lag from cultural ties in compliance of the blind race of modernization. Now a days, it has become a trend to enjoy life without thinking and troubling about values and traditions. Fredrick represents this one side of cultural diversities while Jay who refrains himself from wine and women during his study span, represents the other one.

The gun culture of the United State of America has been delineated aptly in the novel. This culture has been hazardous for years in America and other western countries. Due to easy availability of guns, hundreds of people are killed in various gun fire in the United States every year. This culture causes immense soreness to in-numerous families every year. The death of Sophia, Ford and his accomplices are befallen just because of effortless availability of guns in the hands of mentioned character of the novel if they would not have guns, their life might have saved. It is very easy to acquire the license of guns for common people in America unlike India. The author aptly depicted the concerns of increasing gun culture in western culture. It also draws our attention towards decreasing patience in youth. In the age of industrialization and modernization, youths easily get fascinated towards illegal and harmful acts. The character of Ford and Frederick represent the dark side of system. They do all illegal and harmful activities to enjoy their life which has become a trend now days.

Conclusion

Cultural differences between India and America have immensely been depicted. The beauty of Indian culture through values, traditional beliefs, convictions, historical places, religious places that explain its fabulous heritage, etc. has been described in a way that can fascinate people. The influence of Westernization and modernization on cultures also takes considerable attention.Various approaches, depending on cultural and social teachings, to life have been elucidated through various characters. Thus, it can be concluded that *498A: Fears and Dreams* profoundly examine the cultural aspects of Indian and American society along with other social issues prevalent in society. Dynamic changes in culture through the characters of Sophia, Joe, Procne, Ford, Frederick etc. have been depicted which represent cultural contrasts and similarities existing in Indian culture and Western culture.

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Environment and Society

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The history of man and human society can be vividly described as been characterized by continues interaction between man and his environment. It is interesting to note that this interaction between man and the environment has been enduring over time and the nature of this interaction has been changing as the human society changes in its organization, structure and advancement in technology (Sibiri 2009). The human society does not exist in a vacuum but within a physical environment, hence the importance of this dyadic relationship is underscored in the sense that man‘s survival is entirely predicated on the environment‘s capacity to sustain his welfare needs (food, shelter and clothing). The sustainability of the environment on the other hand is also tied to man‘s prudent use of the physical environment and its numerous resources, which ensures and guarantees the true source of man‘s continued existence (Okaba 2005). However as human population increases, with associated urbanization and technological advancement, man has not been prudent with the use of the environmental resources (food, water, energy, mineral resources, forests and wild life) over time, as he struggles to satisfy his basic and developmental needs he encroaches on the environment in effort to meet the increasing demands of a larger society.

Hence, the relationship between man and his environment is measured and can be summarized by defining the functions of the environment. Thus, Schaefer and Lamn (1986) pointed out three basic functions of the environment which are basic prerequisite for human lives these include: (a) that the environment provides the resources essential for life (air, water and raw materials); (b) that the environment also serves as a waste repository, e.g. body waste, garbage and sewage; (c) it houses man and other living organism. Therefore, as highlighted above, man‘s interaction with the environment is predicated on the environment‘s ability to provide these three basic functions to man and his society. Acute concern is now widely expressed over deforestation of boreal and tropical forests, the degradation of grass, lands and wetlands and desertification. Such destruction of natural ecosystems has led to a reduction in biodiversity, and impoverishment of soils, in attempts to counter the deleterious effects of land misuse in areas, exotic plants and animals are being carefully monitored & encouraged.

Human impact on the soil has also caused some considerable damages, commonly because of poor agricultural practices, excessive water extraction, poor irrigation, and compaction by heavy vehicles and animals. The cumulative effects of these can be disastrous to countries whose economics are heavily dependent on agriculture. The amelioration of these poor practices and the improvement of soil quality require an understanding of the chemistry of the soil and nutrient supply cycles. The oceans and the seas cover more than two third of the earth‘s surface. It is believed that life almost certainly evolved from the seas and there is more species diversity in the sea than anywhere else on earth. Many of the food chains and food webs start with organizations inhabiting the seas and oceans. The ocean–atmosphere system regulates the global climate. It is a sensitive thermostat. The seas and the oceans are rich with food and mineral resources. The exploitation of Earth‘s resources inevitably produces waste, some of which may be hazardous or toxic.

Until the past few decades, much of the waste has been disposed of without any real concern for the damage to ecosystems and frequently under the auspices of ―not in my back yard‖. Evidently, this society-environment interaction which is anthropocentric (human-centered) in nature has led to what is known as contemporary global environmental changes (Wordu 2010) and they are manifested in the following: depletion of ozone layer, global warming, and climate change. The concept climate change refers to any change in climate overtime as a result of either of both natural variability and anthropogenic factors.

The UN Framework Convention on Climate Change (UNFCCC) (1992) in its Article 1, defines climate change as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods‘‘ (Onuoha 2008). These changes in global climate portend both environmental and social implications for human society. Loss of biodiversity has deleterious effect on cultural knowledge amongst local groups/societies etc.

There are basically two approaches to the sociological study of environmental issues. Environmental sociologists according to King and McCarthy (2009:12-13) often draw a distinction between the ―realists,‖ who prefer not to question ―the material truth of environmental problems‖, and the ―constructionists,‖ who emphasize the creation of meaning―including the meaning of ―environment‖ and ―environmental problems‖― as a social process. Social constructionism emphasizes the process through which concepts and beliefs about the world are formed (and reformed) and through which meanings are attached to things and events (King and McCarthy 2009). This school of thought holds that the environment and environmental problems are socially constructed hence one needs to understand the social, political and cultural processes by which certain environmental conditions are defined as unacceptably risky, and therefore, contributory to the creation of a perceived ‗state of crisis‘ (Hannigan 2006).

This implies that all environmental problems are, in part, socially created or 'constructed' by groups of people. Nature never does 'speak for itself', but people do speak on its behalf. Therefore, social constructionists are interested in investigating how some environmental issues are seen to be more significant than others. . According to Giddens (2009), in modern industrial societies, consumption is linked to economic development; as living standards rise, people are able to afford more food, clothing, personal items, leisure tie, holidays, cars and so forth. They consume what they don‘t necessarily need and are hooked to what he termed the 'romantic ethic' i.e. (pleasures of purchasing goods and

not minding the use value); such culture of mass consumerism is disastrous. Hence, global industrialization, capitalism and consumerism threaten the environment at a large scale

This implies that in the risk society the unknown and unintended consequences of technological and economic advancement come to be a dominant force in history and society and industrial societies are slowly dissolving as environmental problems build up (Beck 1992). In fact, Beck (1999) argue that we are, in effect moving into a 'world risk society' - a new type of society in which risk consciousness and risk avoidance are becoming the central focus – because environmental pollution does not respect national boundaries as a result of globalization.

Buttressing this point, Giddens (ibid) posits that until quite recently, human societies were threatened by external risk - dangers such as drought, earthquakes, famines and storms that spring from the natural world and are unrelated to the actions of humans. Today, however, we are increasingly confronted with various types of manufactured risk - risks that are created by the impact of our own knowledge and technology on the natural world. These risks are a testament to the failure of social institutions, most notably science, to control new technologies. Such risks transcend both space and time, extending well beyond the geographic source, and temporally, beyond the present generation. Largely risks today are said by Beck to be largely invisible to lay people, identifiable only through sophisticated scientific instrumentation.

Ecological modernization theory, unlike the previous theories earlier highlighted (which perceives economic growth to be antagonistic with environmental well-being) provides some degree of optimism in the society and environment relationship. This theory deals with the practicability of attaining environmental improvements through transformation of production and consumption patterns with environmental friendly technologies (Barret and Fisher 2005). Ecological modernization according to Spaargaren and Mol (1992:334) mean an ecological switch of the industrialization process in a direction that takes into account the maintenance of the existing sustenance base. The model is based on the work of the German writer, Huber (1982; 1985 cited in Hannigan 2009) who analyses ecological modernization as a historical phase of modern society. In Huber‘s scheme, an industrial society develops in three phases: (1) the industrial breakthrough; (2) the construction of industrial society; and (3) the ecological switchover of the industrial system through the process of ‗super-industrialization‘, made possible by a new technology: the invention and diffusion of microchip environment friendly technology.

Barret and Fisher (2005:4) suggests that there are two major components of the theory: firstly, the theory explicitly describes environmental improvements as being economically feasible; indeed, entrepreneurial agents and economic/market dynamics are seen as playing leading roles in bringing about needed ecological changes. Secondly, in the context of the expectation for continued economic development, ecological modernization depicts the emergence of coalitions of political actors promoting the political feasibility of environmental protection. These two components are associated with the growing independence (or loosening of the restraints) of the ecological sphere from the political and economic spheres in state and industrial policy-making (Spaargaren and Mol 1992).

This was due to the atmosphere of opportunity and rising expectations that accompanied the new availability of land. Nature was seen as an obstacle that society had to tame and overcome in order to make progress, as the popular ideas of nature 'in the raw' or nature 'red in tooth and claw' suggest. According to Giddens (2009: 157) for a minority of people, nature and society were seen as distinct, but nature was not seen as in need of taming.

The concept of sustainable development is in agreement with the wise-use of resources attitude propagated by the conservationists. This implies that development processes should in essence not only guarantee today‘s environmental security but future generations. It advocates for environmental friendly technologies that doesn‘t cause harm to the environment, in this regard environmental sustainability is synonymous with not just resource conservation but the principles of ecological modernization.. The Sustainable Development Goals include:

Goal 1: No Poverty;
Goal 2: Zero Hunger;
Goal 3: Good Health and Well-Being;
Goal 4: Quality Education;
Goal 5: Gender Equality;
Goal 6: Clean Water and Sanitation;
Goal 7: Affordable and Clean Energy;
Goal 8: Decent Work and Economic Growth;
Goal 9: Industry, Innovation and Infrastructure;
Goal 10: Reduced Inequalities;
Goal 11: Sustainable Cities and Communities;
Goal 12: Responsible Consumption and Production;
Goal 13: Climate Action;
Goal 14: Life Below Water;
Goal 15: Life on Land;
Goal 16: Peace and Justice Strong Institutions;
Goal 17: Partnerships for the Goals.

Conclusion

The attention of scientists, scholars, governments and international organizations has grown over the years concerning the rising environmental crises the world is faced with as evident in global warming and climate change with its attendant environmental consequences, water stress, energy crises etc. According to the United Nations Environment Programme world leaders have signed 500 agreements on environment and climate change in the past 50

years, including 61 atmospheres related; 155 biodiversity related; 179 related to chemicals, hazardous substance and waste; 46 land conventions and 196 water conventions (Vidal 2012). The most recent Cop 21 Paris Climate Conference held between 7th and 8th December in France is an effort in propagating a road map for a better environment for humanity. These international agreements are most times politicized as the will to reduce greenhouse gas emission by the developed countries is not strong enough because this will imply reduction of the treadmill of production. For instance, some governments in developing countries argue that there is no parallel between the 'luxury emissions' produced by the developed world and their own 'survival emissions' in relation to global warming, as industrial countries currently account for only about one- fifth of the world's population, yet they are responsible for over 75 per cent of the emissions that serve to pollute the atmosphere and hasten global warming. In essence, they submit that pressurizing developing countries to reduce emission means stagnation of their own economic survival and growth. This has led to introduction of several principles such as polluter pays, climate finance, carbon trading etc. whatever the case is, governments should put their political and economic interests aside and focus their energy on saving our planet. Planet earth from the space view is like a ship sailing in space and if the ship sinks we all are doomed irrespective of national, racial, ethnic, political, religious affiliations and differences.

In 1992; more than 1600 scientists, including 102 Nobel Laureates, underscored this point by collectively signing a ―warning to Humanity‖. Their warning stated in part that ―a new ethic is required, a new attitude towards discharging our responsibility for caring for ourselves and for the earth….this ethic must motivate a great movement, convincing reluctant leaders and reluctant governments and reluctant peoples themselves to effect the needed changes‖ (Enger and Smith, 2006). In response to this, considering mechanisms of environmental improvement, Buttel (2003 cited in Hannigan 2009) proposes four potential channels: environmental activism/movements (he judges this to be the most fundamental and promising), state environmental regulation, ecological modernisation, and international environmental governance. More so, for such a new successful global effort to lighten humanity‘s load on the earth would need to directly address three major driving forces of environmental decline: the inequitable distribution of income, resource consumptive economic growth and rapid population growth. This will definitely redirect technology and trade to buy time for this great change to occur.

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The Environmental And Literary Impact Of The Materialistic Society

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Abstract

This relationship between modern environmentalist thought and the sciences has been fraught with contradictions and reversals. Environmentalism relies on science as the basis of its arguments about the state of nature, but has also held scientific reifications of nature partially responsible for current environmental crises. Ecology has sometimes been perceived as an alternative to normal science, but climate change denial, particularly in the US, has led to a return to science as a firm foundation for environmental and literary claims. In the nonfictional and fictional literature on environmental crises, nonetheless, science plays a varying role. Whereas texts and films concerned with climate change tend to endorse science, works that address pollution and toxicity often criticize the inability or the reluctance of scientists to forecast or diagnose the effects of toxins on human bodies.

Formally, tropes and themes from speculative fiction have increasingly migrated to environmental nonfiction as a way of conveying environmental science to a broad public. The outcome of such thetoric remains to be seen, as nonfiction writers typically underestimate the reinterpretation of scientific facts and figures as merely symbotic in the context of fictional narrative.

Key Words : Environmentalism, symbolic, nonfictional, environmental, crises, nonetheless, underestimate, speculative.

Introduction

This relationship between modern environmentalist thought and the sciences has been fraught with contradictions, paradoxes, and reversals. From Rachel Carson's popularization of scientific insights about environmental toxins in the 1960s (Silent Spring, 1962) and Donella and Dennis Meadows' forecasts of resource shortages in the 1970s (The Limits to Growth, 1972) to contemporary arguments about climate change, ocean acidification, and biodiversity loss, environmentalist arguments about the state of the world rely on the sciences.

The powerful strains in environmentalist thought have also envisioned science as part of the problem to be solved rather than as the solution. In this view, the scientific reification of nature and its technological manipulations have crucially contributed to contemporary ecological crises. The idea that humans stand apart from the rest of the natural world and have the ability, the right, and perhaps even the duty to explore and reshape it have led to our collective underestimation of ecological complexity, our neglect of other species' needs and rights, and an overestimation of our own knowledge and skills. Still, up until the early 1990s, many environmentalists hoped that ecological science might provide the foundations of a new ethie by allowing them to distinguish between right and wrong ways of living in nature.

The Ecological science, conceived of as synthetic rather than analytical in its basic orientation, seemed to authorize an understanding of ecosystems as homeostatic and balanced feedback loops, which in turn helped to sustain the idea that humans could maintain or restore an originary, undisturbed state of nature. But over the course of the 1990s, the gradual realization that ecology had itself become a highly specialized, analytical, and mathematically oriented science, that ecosystems change dynamically over time even without human intervention, and that many claims of the environmentalist movement were shor through with cultural and political assumptions all unsettled this understanding of the relationship between scientific and environmentalist claims.

The Ecological science, as a result, no longer offered a firm foundation for "morality and causality", as the environmental historian Richard White has pointed out : "Historians thought ecology was the rock upon which they could build environmental history; it turned out to be a swamp" (1990: 1113, 1114). The same could be said of the environmentalist movement at large in its realization that ecological science can provide a sketch of what nature currently is, but not of what it should be. The increasing animosity between scientists and their cultural critics on the left in the early 1990s that led up to the Science Wars also contributed to the unsettling of science as a basis of environmental ethics.

Many environmentalists, of course, did not embrace poststructuralist forms of epistemological skeptieism in the way leftist cultural critics did. In their view, poststructuralism with its understanding of claims about "nature" or "biology" as mere ideological screens for particular groups' Neverheless, analyses of science as a social construction and the consequent alienation between scientists and the political left, especially but not only in the US, did not leave environmentalism unaffected.

By whom is ecological knowledge produced and funded. The interests do ecological science and environmental conservation serve? Are the meanings of "nature", "biology", or the "wild" defined by scientific insights or social practices. These were not questions that the environmentalist movement in North America and Europe could ignore, especially when it saw itself confronted with vigorous criticism of its own practices from the emergent environmental justice movement. Environmental activists in the developing world highlighted the first-world, white, and middle-class social interests that underwrote a great deal of environmentalism such as it was then understood in Europe and North America; "People are making rules to protect animals that white people want to see in parks that white people visit", as Raymond Bonner pointedly summarizes some Africans' skepticism vis-à-vis conservation efforts in their countries quoted in Guha and Martinez-Alier.

These parallel questions about the sociocultural foundations of science and the sociopolitical origins of environmentalism might have left the sciences with a more attenuated role in environmentalist thought and activism than they occupied prior to the 1990s. But the climate change crisis changed all that – or, more precisely, climate change denial did. During George W. Bush's two successive terms in office, scientists saw themselves confronted with a federal government that did its utmost to discredit science that it perceived as misaligned with its own interests, and environmentalists faced a government hostile to any attempt at regulation that might constrain economic growth in favor of conservation.

The conservative resistance to environmental management and to science, in particular climate science, led to a gradual bridging of the gap that had opened up between scientists and leftist political activists (including many environmentalists). And it put in question the political impulses that had animated the critique of science a decade earlier. The deliberate cultivation of uncertainty on the American political right so as to preclude rapid action in response to climate change led even the doyen of science studies, Bruno Latour, to wonder in 2004.

Was I foolishly mistaken? Have things changed so fast? In which case the danger would no longer be coming from an excessive confidence in ideological arguments posturing as matters of fact – as we have learned to combat so efficiently in the past – but from an excessive distrust of good matters of fact disguised as bad ideological biases!

While we spent years trying to detect the real prejudices hidden behind the appearance of objective statements, do we now have to reveal the real objective and uncontrovertible facts hidden behind the illusion of prejudices? (227, original emphasis) At the level of environmental practice, as well, the pendulum has swung back to trust in science over the last decade. At the conclusion of their analysis of how climate denialists emphasize the uncertainties of climate science, Naomi Oreskes and Eric M. Conway argue that "it comes to this: we must trust our scientific experts on matters of science, because there isn't a workable alternative" (2010: 272). They emphasize: "Blind trust will get us into as (sic) least as much trouble as no trust at all. But without some degree of trust in our designated experts – the men and women who have dedicated their lives to sorting out tough questions about the natural world we live in – we are paralyzed" (2010: 273). Many environmentalists today tend to emphasize the dire, even apocalyptic, consequences of climate change for most human populations, and climate science becomes the hub around which the environmental ethic of the future must be constructed.

In a certain sense, therefore, the relationship between environmentalism and science has reverted back to where it was before ca. 1990; not in all areas of environmental concern, of course, as I will show shortly, but in an important sense large sectors of the environmentalist movement once again rely on science to provide the ethical guidelines for how to live in nature.

How have these reversals affected environmental writing? Environmental literature forms part of long traditions of writing about nature that reach back to such authors as Virgil and Lucretius. But one can argue that the precursors of explicitly environmentalist thought and writing emerged with the first wave of industrialization in Europe at the turn of the 19th century and the perception that, for the first time, nature might be pervasively threatened by humans, rather than the other way around, and that it therefore might need protection and restoration. British environmentalist writing is usually thought to have emerged with Gilbert White's Natural History of Selborne (1789) and in the writings of Romantic poets such as John Clare, while American environmentalist writing is often traced back to Henry David Thoreau's Walden (1851)

These writings, of course, predate the emergence of ecology as a concept and a scientific discipline, but they record detailed observations of the natural world, its changes, and a fear that humans might degrade it that later writings take up as a way of integrating ecological science into environmentalist writing. The fact that both White's and Thoreau's texts belong to the genre of nonfiction prose already points to a peculiarity of environmental literature that has perpetuated itself to the present day.

In the Anglophone context, "environmental literature" means, on one hand, poems and novels that express a sense of the natural world at risk; on the other hand, nonfictional writings – and for the period after 1950, one might include documentary films – that engage with the natural world and environmental crisis. While both types of literature have integrated ecological science to varying degrees, it is arguably nonfiction prose and documentary film which have most emphatically sought to convey the insights of ecological science to the public. And one could argue that it is also nonfiction texts and films that have played a far greater role in mobilizing environmentalism as a political movement than have novels or poems: from Thoreau's Walden and Rachel Carson's Silent Spring to the essays of Arundhati Roy and Al Gore's An Inconvenient Truth (2006), documentary rather than fictional modes have galvanized environmental action – in part because they proved effective means for translating ecology from field work and lab to the public sphere.

Three central themes have dominated in American environmental literature of the last 50 years, specially in nonfictional texts but also in environmentally oriented narrative fiction and poetry.

Environmental toxins and their often subtle but destructive impacts on the human body have given rise to one constellation of texts and films: on one hand, nonfiction texts from Silent Spring (1962) to Lois Gibbs's Love Canal: My Story (1982), Theo Colborn's Our Stolen Future (1996), Sandra Steingraber's Living Downstream (1997), and Susanne Antonetta's memoir Body Toxic (2001); on the other hand, fictional texts and films such as Don DeLillo's White Noise (1984), Ruth Ozeki's My Year of Meats (1997), Richard Power's Gain (1998), Todd Haynes's Safe (1999), Zaillian's A Civil Action (1999), and Soderbergh's Erin Brockovich (2000). Most of these texts explore how exposure to small amounts of toxins over long time periods changes and stickens human bodies (as well as animal ones) with the rhetorical devices that Lawrence Buell has described as characteristic of what he calls "toxic discourse"; the protagonist's awakening to the reality of environmental danger, the perception of a totally polluted world from which there is no escape, the passion of the weak and politically repressed against the strong and politically powerful, and the

description of bodies and landscapes by means of gothic tropes (2001: 35-45). Frequently, these texts are ambivalent in their relation to science.

They rely on medical diagnosis and scientific testing as ways of discovering and highlighting the effects of environmental toxins, but, as Stacy Alaimo has shown in detail, they also confront the scientific difficulty of conclusively proving etiological and casual chains that link environmental toxins to human or animal pathology (2010:113-14).

As a consequence, they sometimes forcefully assert causal links that the scientists are more hesitant to commit themselves to, and criticize the scientific and medical establishments for ignoring, understating, or even obfuscating the causes of environmental illness. A second cluster of texts has revolved around animals and plants endangered by human activities, and since the 1970s, around the possibilities of a new mass extinction of species. Cultural concern and writings about individual engangered species, especially iconic ones such as the American buffalo and the passenger pigeon, reach back to the late 19th century. I But it was when pale biologists raised.

The specter of a new mass extinction of species in the 1970s and 1980s that fears of a much more large-scale transformation of the natural world entered environmentalist discourse and writing 2 It would be impossible here to enumerate the countless books, paintings, and films that engage with particular endangered or extinct species such as the passenger pigeon, the ivory-billed woodpecker, the gray wolf or, in Australian writing, the ethylamine.

In the US, nonfiction books that often adopt the general structure of travel writing seek to capture the global scope of species extinction, in books such as Diane Ackerman's The Rarest of the Rare (1995), Richard Leakey and Roger Lewin's The Sixth Extinction (1995), David Quammen's The Song of the Dodo (1996), E.O. Wilson's The Future of Life (2002) or Elizabeth Kolbert's The Sixth Extinction (2014), while others focus on particular taxa such as birds, as Chris Cokinos does in Hope is the thing with feathers (2000). Biodiversity science is evoked in all of these books as the basis for worries about the consequences of species loss. Yet what is striking about the arguments that even and especially scientists such as E.O. Wilson propose is how far short they fall of making a persuasive case for preserving almost all biodiversity.[2]

The usual scientific arguments that greater biodiversity enables greater ecosystem resilience and that it holds resources for the future we may not even be aware of quickly give way to aesthetic arguments about the inherent beauty and desirability of diversity, and appeals to ecological reason mingle with appeals to affect. 3 Given the difficulties of making the argument for biodiversity simply and unambiguously even in popular scientific books, it is no surprise that the literary texts often focus centrally on the meaning of nonhuman species for humans. Numerous poets have taken up endangered and extinct species, as the anthology Dire Elegies: 59 Poets on Endangered Species of North America (2006) demonstrates, as have novelists from William Burroughts and T.C. Boyle to Lydia Millet and Jonathan Franzen in texts such as Ghost of Chance (1990), A Frience of the Earth (2001), How the Dead Dream (2008), and Freedom (2010).[3]

Even though the spectrum of science fictional modes of expression has become immensely more varied since the innovations of the New Wave – one of the reasons that the term "speculative fiction" seems more appropriate today than the older idea of "science fiction" – the majority of texts in the genre remains firmly anchored in realism. Kim Stanley Robinson's science fiction provides one of the most salient examples of the simultaneous commitment to a radical reinvention of the world, to science as a privileged mode of knowledge, and to a novelistic language that almost aggressively resists ambiguity and irony.[4]

The difference between the nonfictional books and the more specifically literary texts here is more pronounced than in the case of the works concerned with toxicity: Whereas the nonfiction works seek to trace the outlines of a slowly progressing global crisis that is hard for average citizens to perceive or understand, the literary works focus far less on the science of conservation biology in and of itself than on the attitudes and affects, from mourning and melancholy to neurotic obsession, that accompany individuals' engagement with extinction.

References

1. I Mark Barrow has traced the history of concern over endangered species in the United States in his book Nature's Ghosts.
2. David Sepkoski traces the transition from concerns over individual endangered species to fears of a new mass extinction in Rereading the Fossil Record, Ch. 3
3. For a detailed account of biologists' varied and often not entirely scientific arguments regarding biodiversity, see Takacs. The philosopher Donald S. Maier has delivered a scathing analysis of the paradoxes and contradictions in these arguments in What's So Good About Biodiversity?
4. This is particularly true of Robinson's Science in the Capital and Mars trilogies, but somewhat less so of his more recent 2312, which does incorporate high-modernist experimental forms of narrative.
5. Considering the relative scarcity of texts on climate change, the term "eli-fi", coined by the freelance journalist Dan Bloom to refer to climate change fiction as a genre, seems premature.

Study of The Impact of The Internet/Technological Gadgets Use on Physical And Mental Health: A Survey of College Students

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Abstract

Today's young generation is being considered to be the centre and the basis for future generations because of one or another reason. Most of their decisions are not based on logic but are influenced by the social environment in which they exist. Although advance technologies are quite essential in this fast moving era but addiction to such gadgets can cause health hazards as well as social imbalances or mental health. The degree of dependency that most individuals have is leading to addiction to technological devices. The study was designed to examine addiction to technological devices along with investigating its effect on an individual's physical health and mental health. The aim of the study was to examine the time spent by individuals using technological devices, investigate the intentions behind the use of technological devices and services. By the use of structured questionnaire, primary data was collected from 100 respondents, aged between 17 and 28 years. The findings of the study show that 14% of all participants use some kind of technological device for more than 6 hours a day and their anxiety level is severe. It is also being found that the participants, who use internet for 1-2 hrs, are mostly for the purpose of social networking purpose. Sleeping disturbance also occur in the participants who spent above 6 hrs in a day on the internet/ technological gadgets. Males have higher number to show "neglect effect" than females due to more busy in internet/technological gadgets. The study also reveals that the devices were being used for the individual's pleasure rather than for a necessity. Overall, it was found that the level of technological device usage can affect an individual's behavior which in turn can affect their own lifestyle, health and social skills. The results of study have been interpreted based on current studies and theories.

Introduction

The term "Internet addiction" was proposed by Dr. Ivan Goldberg for pathological compulsive Internet Usage All the findings and clinical implications discussed here have several similarities with other forms of addictive behaviors. They are consistent with neurobiological and psychological models of addition (Robinson and Berridge, 2003). People with Internet addiction disorder had reduced striatal dopamine transporters and suggest that Internet addiction disorder might cause serious damage to the brain (Hou *et al*.., 2012).Recent data has suggested that Internet use disorders may be associated with specific brain lesions or dysfunction. Internet addiction may be a clinically relevant disorder (Goldberg, 1995). Use of the internet that creates psychological, social, school or work difficulties in a person's life is a multidimensional syndrome consisting of cognitive and behavioral symptoms that result in negative social, academic, or professional consequences (Caplan, 2002, 2003; Davis, 2001; Davis, Flett, & Besser 2002; Morahan, Martin & Schumacher, 2003). People, who spare little time for real people in their life, prefer to spend time alone on computer. Addicted internet users are much more lonely comparing non-addicted ones (Nalwa and Anand, 2003). At the international level, mental health is receiving increasingly importance as reflected by the WHO focus on mental health as the theme for the World Health Day (4th October 2001).The introduction of modern technological gadgets has captured the attention of global population. Depression based research for brain development exposure to high technology stimulates to brain alteration and neurotransmitters release, ultimately strengthening new pathways in the brain.

Neurobiology of Addiction

The study of how the brain and its components operate on an anatomical and physiological level, add biochemical agents and processes to our understanding of engagement in youth hacking. Through the expediency in which reward and punishment occurs in cyberspace, neural connections may be activated in high densities and volumes, as we navigate the cyber world. Dopamine can be released quickly as vulnerable youth achieve frequent and rapid successes online, and if these successes are linked to anti- social acts, such as hacking, they will be reinforced to pursue further ends to obtain their gains: in otherwords the variable ratio reinforcement schedule of Internet use and abuse, and dopamine/tech use connection.

Material and Method

Study Area

This study is based upon the fieldwork conducted in Dayalbagh Educational Institute, Agra. The fieldwork was conducted during August to October, 2017. It is based upon primary data collection using questionnaire survey.

Sample

100 subjects were recruited to find out the level of Internet addiction. The questionnaire participants are the individuals aged between 17-28 years. The time spent by the participants was allowed for not more than 15 minutes.. The education of the sampled students varied from undergraduate (UG), postgraduate (PG) and doctoral (Ph.D).

Questionnaire

This investigative research has been completed in the hope to find out the prevalence of Internet addiction, if there, in the cohort of students of D.E.I., Agra. Some observers have argued that overuse of the Internet can be a form of addiction, but others have suggested that this behavior is not pathological and may, in fact, be adaptive. The survey we used is non-standardized instrument. Although we did not conduct a pilot study, we developed the questions in the directions of respondent's general problem and related research. It include general information about respondents (age, name, gender and year of study) and consist 3 section; A, B & C. Section-A includes type of gadgets which were used for internet and time spent on these gadgets in a day. It also include the time spent for the purpose of using internet/gadget. Section-B includes the neglect and control disorder factor to dependency on internet. Section-C includes physical and mental health related problems.

Method of Data Collection

Firstly, the students were requested politely to complete the questionnaire in the free time of classes in college opening days. The questionnaire consist three sections, where in the section-A, the participants were required to indicate the technological gadget they used, time spent per day on internet and the types of gadgets with duration i.e. 1-2 hrs, 2-4 hrs, 4-6 hrs and >6 hrs and time spent for purpose of Internet with gadgets i.e. study, communication, social networking and entertainment. In this study the use of the gadgets for more than 6 hours is regarded as addictive use by the participants.

Section-B of the questionnaire was having questions to know about the dependency on the internet and attention or concentration level, any mental health effect due to excess gadgets or internet use. All questions based upon 5 point likert scale, where 5 refer to strongly agree and 1 refers to strongly disagree.

Section-C of the questionnaire was having questions to be asked by respondents to find out any physical health problems (neck/back pain, poor posture of body, eye strain/dry eye effect, numbness in wrist or palm), sleep disturbance and headache stressed related problem.

Statistical Analysis

Chi-square Test

It is a Non-parametric statistical technique widely used to test the difference between the observed frequency and expected frequency if any. It is denoted by Greek letter χ^2

It is computed on the basis of frequencies.

The value of chi – square is calculated by the formula:

$$\chi^2 = \sum_i \frac{(O_i - E_i)^2}{E_i}$$

Where,

O= Observed frequency E= Expected frequency

The steps involved in carrying out the chi-square test for independence of two variables are as follow:

1. State the hypothesis such as:

Ho: No relation between the two variables (Null hypothesis)

H1: there is some relation exist between the two variables (Alternative hypothesis)

2. The test statistics is applied.
3. Degree of freedom calculated by the formula: (r-1) (c-1), where "r" denote row and "c" denotes column.
4. The level of significant for the test is selected.
5. Critical value of chi-square is obtained from the table on the basis of degree o freedom and level of significance.
6. The chi-square statistics is computed by using the observed and the expected numbers of cases for each cell. For each category, subtract the observed value from the expected value of each cell, square the difference and divide by expected value of each cell.sum these values of the cells of table, resulting value is the chi-square statistic.
7. If calculated value is greater than critical chi-square value then null hypothesis is rejected and accept the alternative hypothesis that show the significant difference between two variables.

If calculated value is lower than critical chi-square value then null hypothesis is accepted that show no significant difference between two variables.

Results

Demographic characteristic of internet addiction and anxiety intensity:

A survey was conducted to study level of internet use and technological gadgets addiction and their impact on mental and physical health subjects at D.E.I. campus of different Departments, Faculty, age – group and year of study. Out of 100 participants, there were 50 males and 50 females subjects. Out of the total subjects, 26 subjects use internet for 1-2 hrs, 35 use 2-4 hrs, 18 use 4-6 hrs and 21 use >6 hrs. The age-group consists as 53 subjects of 17-20 years, 29 subjects of 21-24 years 18 subjects of 25-28 years age.

Duration of internet use and anxiety level distribution is shown in **Table 1** out of the total subjects 72% have shown the anxiety problem due to the use of internet/technological gadgets of which shown **(a)** 66.6% mild intensity of anxiety in which 27.08% use 1-2 hrs internet, 39.58% use 2-4 hrs internet, 18.75% use 4-6 hrs internet, 14.58% use above 6 hrs internet, **(b)** 19.44% have shown moderate intensity of anxiety in which 7.14% use 1-2 hrs internet, 28.57%

use 2-4 hrs internet, 29.57% use 4-6 hrs internet 35.71% use above 6 hrs internet, **(c)** 13.88% shown severe intensity of anxiety in which 0% of 1-2 hrs.

Table 1: Internet/gadgets uses and intensity of anxiety level on the basis of time

	Anxiety level		
Time spent on internet	**mild**	**moderate**	**Severe**
1-2 hrs	13 (18.05%)	19 (1.38%)	0 (0%)
2-4 hrs	19 (26.38%)	04 (5.55%)	02 (2.77%)
4-6 hrs	9 (12.5%)	04 (5.55%)	03 (4.16%)
above 6 hrs	07 (9.72%)	05 (6.94%)	05 (6.94%)

There is significant difference between intensity of anxiety and the duration of internet/gadgets use as per the statistical analysis by chi-square test.

Chi-square value- 13.25 and p-value at 5% significance level or 6 degree of freedom is 12.592 so the calculated value is higher than the tabulated value, hence this shows significant result between time use of internet/higher the tabulated value, hence the result is significant.

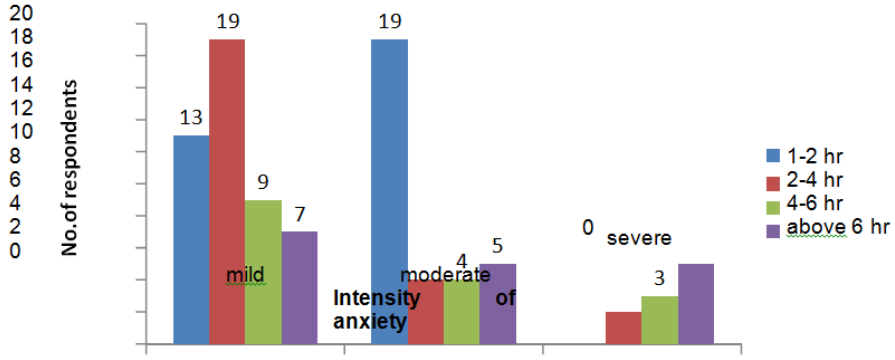

Figure 1: duration of internet/gadget use and their anxiety level

Distribution of Different Type of Gadget Uses By The Respondents

If distribution of different type of gadget is considered according to the time spent on internet/gadgets by the respondents i.e. 54.2% respondents use computer/laptop for 1-2 hrs, as far as 15% respondents use Tablets for 2-4 hrs, 34% respondents use Smartphone 2-4 hrs, 27% respondents for 4-6 hrs and 14% respondents using Smartphone above 6 hrs. It is evident in **Table 2** which show high number of respondents using Smartphone above 6 hrs who are probably addicted and their mental and physical status should be not well.

Table 2: Distribution of Respondents on The Basis Of Time Spent on Gadget Type

Gadgets	**1-2 hrs**	**2-4 hrs**	**4-6 hrs**	**>6 hrs**
Computer/Laptop	47	21	09	10
Tablets	16	03	01	0
Smart Phone	25	34	27	14

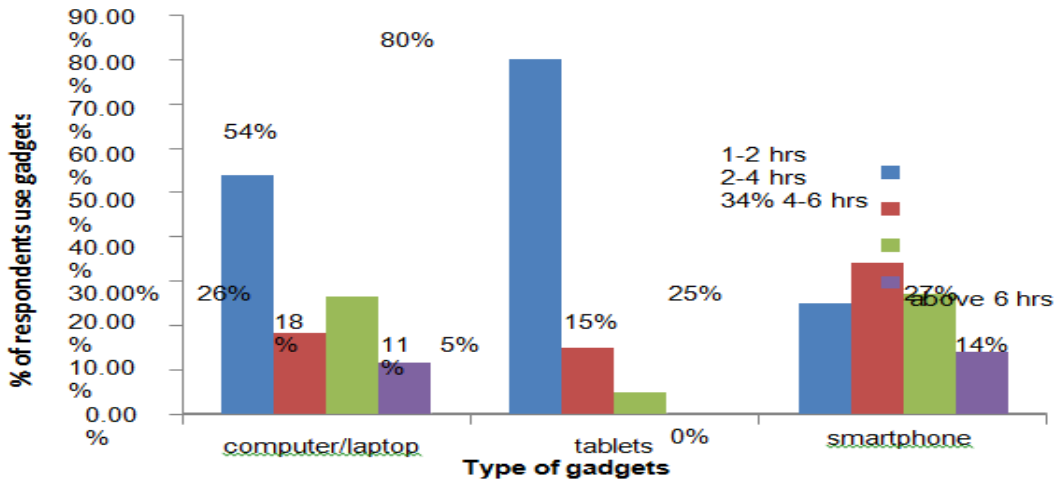

Figure 2: Distribution of Type of Gadget Depending on Time

Distribution of Sleeping Problem In Respondents Based on Spent Time on Internet/Gadget

Sleeping problem is important characteristics of mental health related problem which cause stress and depression and is normally found in adults who spent more time on internet/gadget being online. As shown in **Table 3**, that the group of 1-2 and 2-4 hrs internet users has mild sleeping problems whereas, 4- 6 hrs internet users has moderately sleeping problem. However, above 6 hrs internet users has severe sleeping problem.

Table 3: Duration of internet/gadget use and sleeping problem

Time spent on internet	Mild	Moderate	Severe
1-2 hrs	8	0	0
2-4 hrs	12	03	0
4-6 hrs	07	03	02
above 6 hrs	04	04	10

By the statistical analysis of chi-square test analysis, the significance of relationship between increase time of internet use also increase the sleeping problem ($p>0.05$). Calculated value is higher than the tabulated value at 6 degree of freedom 5% of significance level so the result is significant and there is relationship between the internet/gadget use time and effect on sleep.

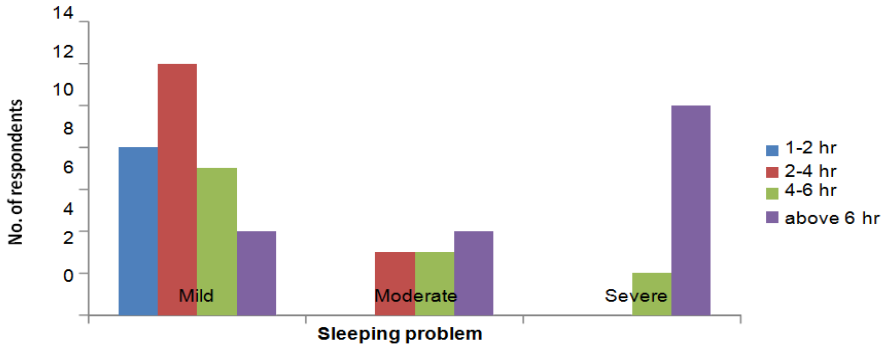

Figure 3: Level of Sleeping Problem

The prevalence of Internet/gadgets use by male and female respondents

If we observe the distribution of males and females respondents based upon time spent on internet/gadget then the number of female respondents is high in 2-4 hrs as 38% (19/50), above 6 hrs use 22% (11/50) where male respondents 1-2 hrs use 32% (32/50) and 24% use for 4-6 hrs.

Table 4: Time Spent on Internet by Male and Female Respondents

Time spent on internet	Male	%	Female	%
1-2 hrs	16	32%	14	28%
2-4 hrs	14	28%	19	38%
4-6 hrs	12	24%	06	12%
>6 hrs	08	16%	11	22%

By the statistical analysis, it is shown that there is significant difference between male and female respondents of using internet/gadget us time calculated value- 20.39 is greater than tabulated value of 7.81 at 3 degree of freedom 5% of significance level ($p<0.05$).

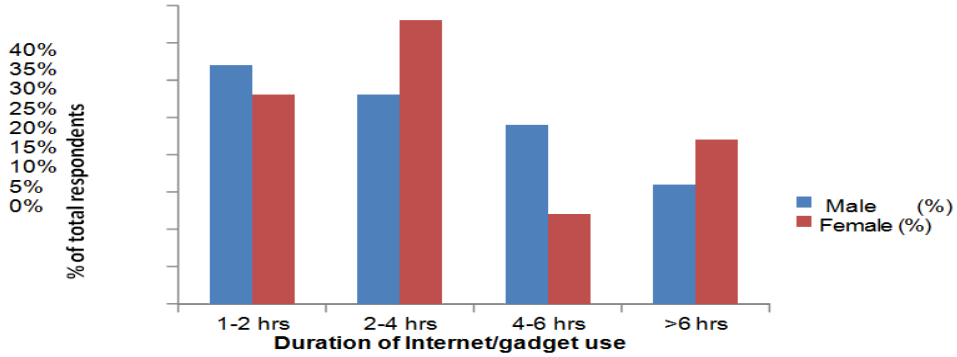

Figure 4 : Time spent over the internet by Male and Female respondent

Distribution of respondents' time spent on internet/gadget for different purpose

Different purposes of internet use by the respondents for different time as being found in the number of respondent of D.E.I. campus, shows that most of students use it for entirely study purpose.

Table 5: Distribution of respondents to use internet/gadget for different purpose

Time Spent On Intern	Study	Social Networking	Entertainment	Communication
1-2 hrs	40	68	52	65
2-4 hrs	32	15	33	18
4-6 hrs	13	08	04	02
>6 hrs	15	09	05	04
Total	100	100	94	89

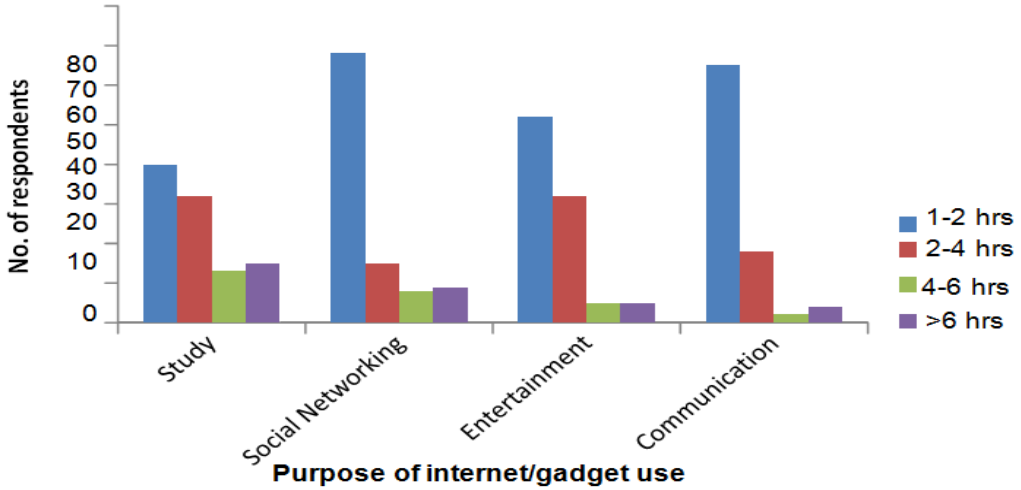

Figure 5: Purpose of using internet/gadget

Age-group wise distribution of different purpose of using internet/gadget

Different age group use internet/gadget for different purpose. 17-20 age group mostly used internet for social networking, communication, entertainment and study, compared to other age group respondents.

Table 6: Distribution of Purpose of Using Internet By Different Age-Group

Age-group	Study	Communication	Social Networking	Entertainment
17-20	18	31	36	22
21-24	11	19	19	16
25-28	7	13	11	12

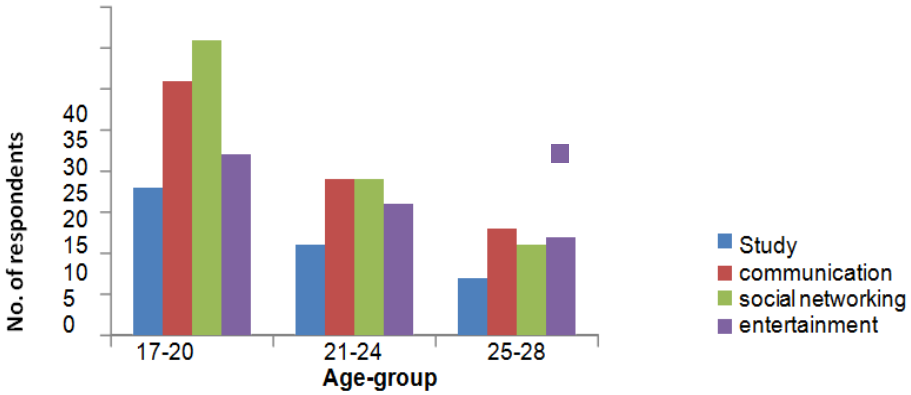

Figure 6: Distribution of age-group for different purpose of using internet/gadget Time spent on internet and physical health problems

There are various problems related to physical health which is caused by long time of internet/gadget use. If Internet/gadget are being used regularly long duration of time then they creates many problem mentally as well as physically i.e. numbness, eye strain, poor posture of body, neck/back pain are common problems which found almost everyone who spent more time on internet/gadget regularly.

Table 7: Different time spent of internet by the respondents and physical health problems

Time spent internet	N	Numbness	Eye Strain	Blood Pressure	Poor Posture	Neck/Back Pa
1-2 hrs	30	15(50%)	25(83.33%)	12(40%)	23(76.66%)	25(83.33%)
2-4 hrs	33	18(54.54%)	26(78.78%)	11(33.33%)	24(72.72%)	30(90.90%)
4-6 hrs	18	13(72.22%)	16(88.88%)	11(61.11%)	16(88.88%)	14(77.77%)
>6 hrs	19	12(63.15%)	18(94.73%)	7(36.84%)	17(89.47%)	14(73.68%)

If we see dependency of internet with time and measure physical health related problems then we found that everyone who uses internet/gadget regularly has show problems by 1-2 hrs internet /gadget use respondents.

The above table show various physical health related problem and its distribution in respondents on the basis of different time spent on internet/gadget.

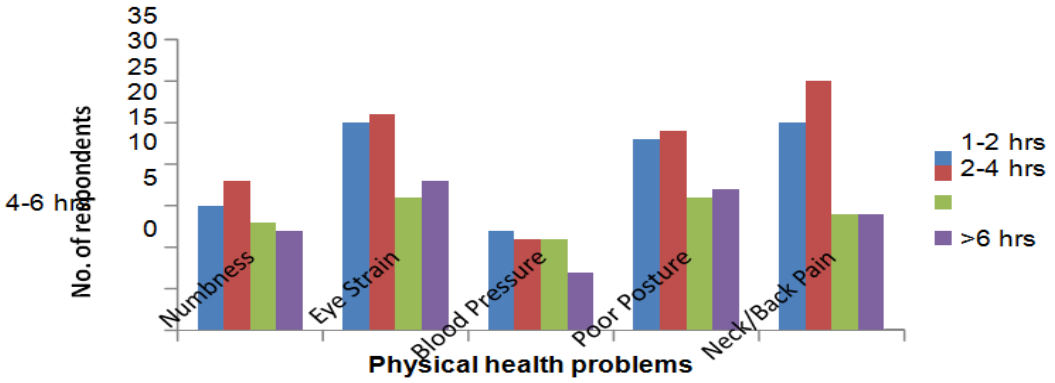

Figure 7: Distribution of Physical health problems different time spent on internet/gadgets Table 8: Gender distribution of physical health problems

Problems	N	%	Male	%	Female	%
Numbness	58	58%	27	46.51%	31	53.44%
Eye strain	85	85%	38	44.70%	47	55.29%
Blood pressure	41	41%	22	53.60%	19	46.34%
Poor posture	80	80%	37	46.25%	43	53.75%
Neck/back pain	83	83%	40	48.19%	43	51.80%

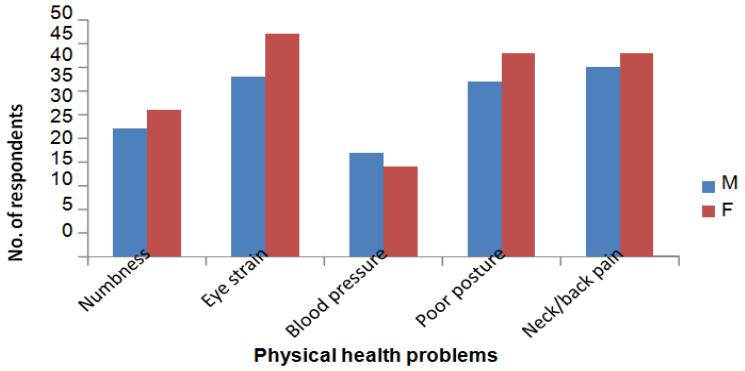

Figure 8: Gender distribution of physical health problems

Table 8.1: Age distribution of physical health problems

Age-group	Numbness	Eye Strain	Blood Pressure	Poor Posture	Neck/Back Pain
17-20 yrs	32	43	21	39	43
21-24 yrs	16	25	15	23	23
25-28 yrs	12	17	04	19	15

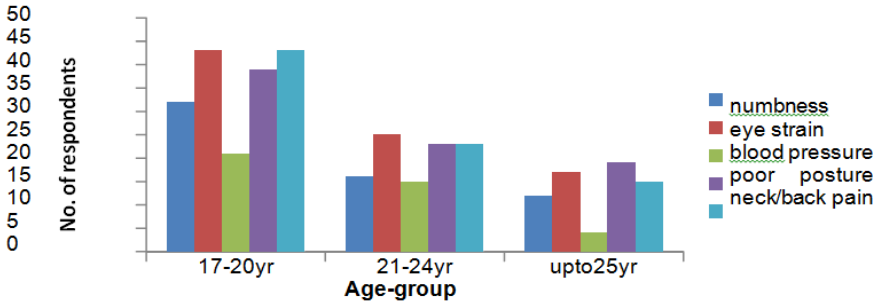

Figure 8.1: Age Distribution of Physical Health Problems Gender Distribution Internet/Gadgets Use And Neglect Effect

A person busy with the Internet/Gadget, do not concentrate on other work such as study, other work and neglect everyday important activity and keep decreasing importance of work. As shown in **Table 8,** that 41 male respondents in 17-20 Age group has more neglect effect than the female respondents and age group 21-24 Female respondents is 21 which is higher than the males.

Table 9: Distribution of Neglect effect on male and female respondents

Age-group	N	%	Male	%	Female	%
17-20	53	53%	41	77.35%	12	22.64%
21-24	29	29%	08	27.58%	21	72.41%
25-28	18	18%	02	11.10%	16	88.88%

The statistical analysis by chi square show there is significant difference between distribution and frequency males and females in different age-group to the neglect effect ($p<0.05$).

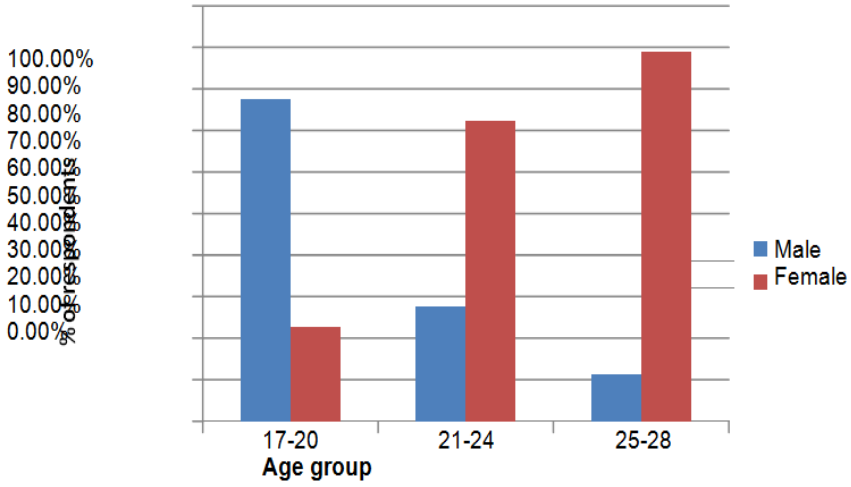

Figure 9: Age and gender distribution of Neglect effect Internet/gadgets use and the stimulant uses

Use of stimulant is a benchmark diagnosis of internet/technological gadgets on mental and physical health. Stimulants use by the male and female respondents after the use of internet/technological gadgets is important factor showing the effect of internet/technological gadgets on mental and physical health. The higher percentage of males in 17-20 years age group, contributes the more use of stimulants as compared to females. Age-group of 21-24 years show high frequency than females, 25-28 Age-group show high frequency of females.

Age and Gender Distribution of Stimulants Use For Reduce The Problem Occurring With Internet/Gadget Use

College students are vulnerable group for misuse of prescription stimulants. Some studies have found 4.1% to 10.8% of college students reported to Non-medical use of prescription stimulants. Most common reasons to use by anyone is avoiding any type of stress due to long time spent on internet/gadget, hence to improve concentration power on their academic and social life.

Table 10: Age and Gender Distribution Of Stimulants Uses

Age-group	N	%	Male	%	Female	%
17-20	53	53%	18	33.96%	04	7.54%
21-24	29	29%	04	13.79%	03	10.34%
25-28	18	18%	01	5.55%	03	16.66%

By the statistical analysis we say that there is significant difference in age and gender distribution of using stimulants after the use of long duration internet/technological gadgets ***(p<0.05).***

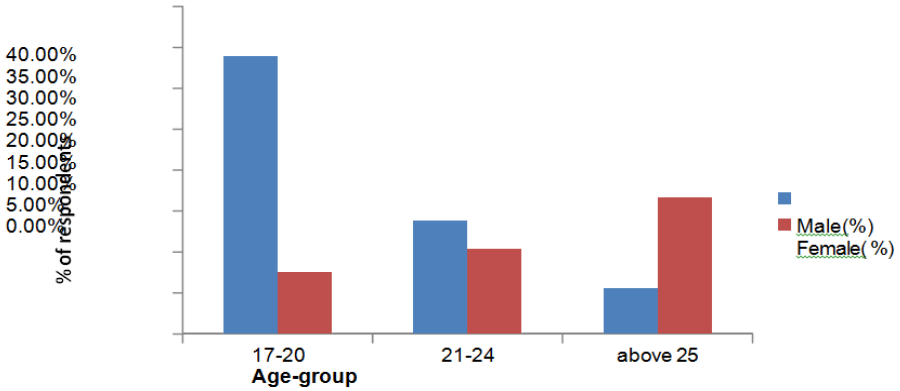

Figure 10: Age and gender distribution of stimulants uses.

Discussion

Internet addiction is just like an impulse control disorder. The only difference lies with the fact that it does not involve the use of an intoxicating drug. It is very similar to pathological gambling. Some Internet users may develop an emotional attachment to on-line friends and activities they do on their computer screens. Other Internet users spend endless hours researching topics of interest online or “blogging”. Internet addicts become a member of the virtual and fantasy world and cut their presence from the real world. They use internet as a substitution to real life human connection, which they are unable to achieve normally. Internet addiction has recently been considered as users are

increasing. College students are exposed to a higher risk of internet addiction because of their vulnerability (Jennifer *et al*., 2008). It is a phenomenon which still has its a mental disorder and the number of those who go to primary attractiveness. Thus, the present study is run to visit a psychiatric clinic and seek help due to Internet study the relationship between Internet addiction and addiction is gradually increasing. Students who spend continuous time on the internet despite of being aware of its disadvantages. They spend more time on internet than is often intended by them. This may result into headache, backache, weight gain/ loss, disturbances in sleep, Carpel tunnel syndrome and blurred or strained vision. Hence the anxiety about these physical symptoms

Conclusion

We are living in a world of knowledge and technology. Changes in the scientific world are very fast in today's world. Keeping one along with the pace of worldly change is definitely a challenging task. Hence, one must learn how to exercise control and to know what is important and what is not important at a specified time. Its inevitable true that use of the Internet in society and on college campuses is growing at an exponential rate.Although the Internet is an excellent tool for gathering information and for interpersonal communication, dangers exist for those who make it the central focus of their lives. This study contributes to the effect of internet/gadget use and their effect on mental and physical health. Findings suggest that type of use internet is correlated with well-being in terms of depression, anxiety, what matters to wellbeing is not necessarily how long students spend online, but what they do online. It is clear from this study that the Internet is an important component of college student lives, one that has both positive and negative implications.

We agree with this conclusion and hope that this review will inspire future research on neuropsychological and neurobiological mechanisms of the development and maintenance of an addictive use of the Internet in general and certain Internet applications in specific, as well as on predictors for treatment efficacy.

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Environment and Green Solutions: Eco Glue – A Herbal Renaissance

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Abstract

Eco friendly glues are nontoxic and herbal. Although sustainability has become the buzzword only today, these have existed since the stone age. In ancient India, they were extensively used in temple architecture. Today, with increased awareness about the environment, there seems to be a renaissance of our ancient traditions of being eco-friendly. Drawing inspiration from the past, this paper attempts to throw light on the ancient techniques of glue making and how we can learn from them.

Keywords : Pleistocene, Egyptian And Greco-Roman Civilisations, *Brhatsamhita*,*Ashtabandham,* Animal And Herbal Adhesives

The History

The earliest human use of adhesive-like substances was approximately 200,000 years ago, when Neanderthals produced tar from the dry distillation of birch bark for use in binding stone tools to wooden handles. Evidence of glue use in the Pleistocene can be found in southern Africa as early as the Middle Stone Age (280,000-25,000 years ago), Stone Age sites in Italy (the use of birch bark tar) and eastern Africa (red ochre stains on stone stools).

The earliest known use of adhesives was discovered in central Italy when two stone flakes partially covered with birch-bark tar and a third uncovered stone from the Middle Pleistocene era (circa 200,000 years ago) were found. This is thought to be the oldest discovered human use of tar-hafted stones.[1]

Glue-making in the Pleistocene, combined environmental knowledge of a plant-based resin with an understanding of how to create glues by managing fire and temper. Simple adhesive comprised *Acacia* gum which is water soluble and hydroscopic.Consequently, damp conditions caused this simple adhesive to become tacky, allowing the stone tool to fall from its haft. Thus, proving to be a great help for hunting. Compound adhesives combined *Acacia* gum with powdered ochre and sometimes a small amount of beeswax.[2]

Plant-based adhesives are brittle and vulnerable to environmental conditions. The first use of compound adhesives was discovered in Sibudu, South Africa. Here, 70,000-year-old stone segments that were once inserted in axe hafts were discovered covered with an adhesive composed of plant gum and red ochre (natural iron oxide) as adding ochre to plant gum produces a stronger product and protects the gum from disintegrating under wet conditions. The ability to produce stronger adhesives allowed middle Stone Age humans to attach stone segments to sticks in greater variations, which led to the development of new tools.[3]This led archaeologists to suggest that plant-based adhesives, together with twine, allowed the creation of sophisticated tools like spear points.

Archaeologists studying burial sites of ancient tribes found that approximately 6,000 years ago the tribesmen had buried their dead together with food found in broken clay pots repaired with tree resins. Another investigation by archaeologists uncovered the use of bituminous cements to fasten ivory eyeballs to statues in Babylonian temples dating to approximately 4000 BC.

Some of the most famous examples of early uses of glue were in ceremonial and decoration items from 6000 years ago, axes and arrow tips from 5,200 years ago, 3,500 year old records of glue being used in creation of papyrus and laminated woodwork melded together by glue found in 2,500 year old tombs of Egyptian pharaohs such as in pharaoh Tutankhamun's tomb.[4]

Other ancient Egyptian artifacts employ animal glue for bonding or lamination. Such lamination of wood for bows and furniture is thought to have extended their life and was accomplished using casein (milk protein)-based glues. The ancient Egyptians also developed starch-based pastes for the bonding of papyrusto clothing and a plaster of Paris-like material made of calcined gypsum.

The ancient Greeks developed adhesives for use in carpentry, and created recipes for glue that included the following items as ingredients: egg whites, blood, bones, milk, cheese, vegetables, and grains. Tar and beeswax were used by the Romans for glue.[5] With the rise of Greek and Roman empires, use of glue became commonplace across central and southern Europe, with glues being used from small daily jobs to large building constructions that have survived to this day. Romanmosaic floors and tiled walls were glued.However, it is concrete, which the romans invented, that is heavily in use today.

While earlier civilizations relied much on adhesives created from plants and heat-treated rubber substances, the only commonly used glue in Europe between the fall of Roman Empire and the World War 1 were glues made from animal hides, connective tissue and hooves. Those parts were cooked and reduced to jelly, and then dried and stored as a powder.[6] When needed, powder was mixed into water and slowly cooked until it reached desired thickness. During all those centuries, this glue formula was utilized not by general population, but by Furniture-makers and woodworkers.

Around 1750, the first glue or adhesive patent was issued in Britain. The glue was made from fish. Patents were then rapidly issued for adhesives using natural rubber, animal bones, fish, starch, milk protein or casein.

Eco Glue in Ancient India

Brhatsamhita of Varaha-Mihira (5-6 century AD) describes the materials and methods of cementing material in chapter *Vajralepa.* This chapter describes three different ways of adamantine glue preparations using either metal alloys

or animal matters using herbal components.[7] Although detailed information about the procedure and composition of adamantine glue from metal alloys or animal matters is given, no such detailed information is available regarding preparation of herbal adamantine glue. The methodology suggested is found to give maximum bond strength of 97 KPa. The adamantine glue is eco-friendly and hygienic. It provides useful insight into the chemistry of green cement. There were ample uses of glue in the temple architecture of that period, the remains of which bear testimony to the strength of these cements.

Among the holiest in the temple traditions are the ceremonial installation of an idol on its pedestal. According to Temple Shastra as mentioned in *'Tantrasamuchayam'*, after installing an idol, it should not be moved or displaced as the chosen spot has been declared as the most apt based on various calculations and beliefs. A unique compound, unnamed, for lack of scientific evaluation, but called *Ashtabandham* in the scriptures, is used to bind the idol to its pedestal. The makers call it a 'medicine' as it is made up of eight natural things.

According to '*Tantrasamuchayam*', before placing the idol onto the pedestal, a mixture of precious stones, metals and seeds - depending on the worshipping deity - is filled in the holes made for the purpose in the pedestal. When water, milk, ghee, or curd is poured on to the idol during *Abhishekam,* it seeps into the pedestal. *Ashtabandham* is applied as a sealing.[8]It binds the idol to the pedestal so tight that no liquid can pass through and dislodge it. This traditional method is still practiced in Kerala.

Kaduka (Terminalia Chebula), *Amla* (dried gooseberry), *Chenchalyam* (Shorea Robusta), *Shankh*(conch) powder, *Kolarakku* (made from resin from lac insects), fine sand from the Periyar River, a unique type of clayey mud that lands on the banks of Bharathappuzha after the water retreats post-monsoon, and cotton are the main ingredients that go into the *Ashtabandham.*

Apart from the adamantine glue and the *Ashtabandham,* it is lime mortar which is most extensively used in temple constructions. Regional plants that are rich in carbohydrate, protein and fat are generally added to the lime mortar mix. In central Kerala, different types of herbs, namely *Oonjalvalli*, *Kulamavu*, *Kadukai*, *Pananchikai* and*Gur*(Unrefined sugar) were used as admixture in the temple for restoration work. *Kadukai*and*Gur*were added as carbon source whereas other plant extracts are rich in protein and fats. These are added to improve various properties like carbonation, plasticity of the mix and to enhance the durability of the hardened mortar. These mortars also served as a platform for mural painting.[9]

Thus, there are extensive instances of 'herbal glue' in India. These could be emulated to suit present needs.

My Glue

Every year more than two lakh Ganesh idols are immersed into the water bodies. Most of them are made up of POP and harm the marine life. Though other eco-friendly idols offer an alternative, they are five times costlier than POP idols. Even clay takes three to four weeks to dissolve in water. The solution lies in the eco-friendly glue made by mixing the pulp of *bael* fruit and paste of neem leaves. *Bael* seeds are enveloped in a natural gum containing phytochemicals that give it adhesive properties. This makes the glue strong, elastic and water resistant. Neem, on the other hand, makes it anti-bacterial and anti-fungal.

The glue is viable due to its cost effectiveness and easy availability of the ingredients. Other than making eco-friendly idols when mixed with garden soil, it can also be used to stick small items with natural pores in them such as wood and paper. This doesn't harm children, unlike the normal glue with harmful chemicals like ethanol, xylene, etc. Thus, the glue is highly flexible as it can be used for various purposes as well as accessible to all. Most importantly, this glue has already been practically used in the present by the author. It has got the author the Inspire Award from the Government of India in 2021.The properties of the ingredients of this glue are mentioned below:

***Bael* (*Aegle marmelos*)**

Bael or wood apple is a plant popular for its fruit. A powerhouse of health goodness*bael* stands out for its nutrient potency and its robust energizing property. It is antimicrobial, antidiabetic, anti-inflammatory, analgesic, anti-cancer and boasts of many other such powerful components. The medicinal properties of the fruit merited mention in some of the erstwhile medical treatises like "*Charaka Samhita*". The goodness of this wonder tree and fruit finds a special mention in Rig Veda too.

*Bael*has religious importance in Hindu scriptures. It is believed to be the favourite tree of Lord *Shiva*and the abode of Goddess *Lakshmi* for wealth and prosperity. *Bael* fruits and leaves form a major part of Lord Shiva puja. The*Bael'*s trifoliate leaf arrangement is of great significance in Hinduism. On one level the 3 leaflets signify *the trinity of Brahma, Vishnu and Maheshwara.* On another level, the trifoliate leaflets also signify the three *eyes of Shiva* and point to an *unusually awakened and spiritually charged plant.*

***Neem*(Azadirachta indica)**

Neem has been used as a preservative to impart antimicrobial properties. It functions as an antiseptic, antibacterial, anti-viral and anti-parasitic. Neem is very potent against insects, bugs, and microbes. Hence,it proves to be very helpful in making this adhesive sustainable by extending its life at a low cost.

A similar experiment, using different ingredients, has been carried by Kaichang Li and colleagues at Oregon State University, who made a high-performance, formaldehyde-free adhesive alternative. The soy-based adhesive is stronger than, and cost-competitive with, conventional adhesives. Li's inspiration for the adhesive came from the strong, water-resistant proteins used by ocean mussels to cling to rocks to avoid being washed away by the surf. He wanted to develop a wood adhesive from renewable natural resources, like soy protein, carbohydrates and lignin that would be strong and water-resistant. Further research could be carried out by identifying materials with natural gum which could be incorporated in the glue.

Conclusion

Today approximately 6% of the total adhesives manufactured in Germany are based on natural raw materials, and this proportion may rise again within the context of economical or ecological aspects. It can be utilized as a water and viscosity binder in many industries. A non-ionic edible polysaccharide is also employed for drug delivery applications. The*bael* plant is found abundantly in India. *Bael* fruit and, particularly, BG (Bael gum), known for their antimicrobial and anti-histamic actions, are important Indian ayurvedic medicine. The gum is used to prepare adhesives, water-proofing, and other emulsion coatings. Bael fruit is widely used in India, either on a domestic or industrial scale. The*bael* fruit has many meditational values and hence BG is collected and used at large scales by pharma, Ayurved, and herbal companies.

A ripe wood apple is cracked open. The seeds are extracted with a wooden stick and immersed in a steel pot filled approximately 2 inches with water. Repeating this action for one hour yields natural glue. This may be used instantly or allowed to ferment for a year for better glue quality. Adhesives used in laminated multilayer packaging, paper coating, or biomedical application must not be toxic and should not contaminate the surface in contact. Sometimes adhesives are also used in foodstuff. Hence the adhesives used in food, food packaging, or in applications where the adhesives might get in contact directly or indirectly with food must be intoxicated, biocompatible, bio-renewable, and biodegradable.

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Impact of Copper on Mining Industry Effluents And Soil Quality Parameters

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Abstract

Metal pollution expanded when mining and industrial activities increased in the late 19th and early 20th centuries. The current world mine production for Cu, Cd, Pb and Hg is quite significant. They pose a risk to primary and secondary users and ultimately to humans. This study was conducted to investigate the effect of mining industrial effluents on soil properties. Field experiments were carried out in and around the mining industry in Ajmer in Rajasthan. Effluent and soil samples were collected for determination of pH, Ec, TDS, Organic Carbon and Cu. Waste from the explosives industry shows a difference in pH values of 7.9 to 8.5, electrical conductivity of 0.65 to 0.95 µs, TDS of 1825 to 2500 mg/l and heavy metals such as Cu 2.40 to 3.70 mg/l up to the allowable limit. Soil analysis showed a difference in pH value 8.0 to 8.7, electrical conductivity 0.25 to 0.40 µs, organic carbon 0.22% to 0.68% and heavy metals such as Cu 150 to 225 mg/kg, higher than the permitted limit.

Keywords: Environmental pollution, industrial effluents, heavy metals, mining

Introduction

A natural body called soil is made up of layers that are mostly made of minerals combined with some organic matter. These layers differ from their parent materials in terms of their texture, structure, consistency, colour, chemical composition, biological makeup, and other factors. Numerous creatures live in soil, which is an essential habitat. In actuality, a nation's land is its most priceless cultural legacy [1].Group of metals or metal-like elements that have a density of more than 5 g/cm3 and an atomic number of more than 20 are called heavy metals. Heavy metals cause toxic effects on human health and the environment, so the extraction of heavy metals from industrial wastes is very important. Release of heavy metals from various industries such as electroplating, mining and leather industries, pigments, metallurgical processes and textile industries. Industrial wastewater contains many metal ions such as cadmium, chromium, copper, lead, zinc, manganese and iron. Heavy metal recovery is carried out by many methods such as chemical precipitation, flocculation, filtration, chemical coagulation, reverse osmosis, ion exchange, solvent extraction, adsorption, and membrane technology [2-3]. Accumulation of heavy metals in soil is a concern in agricultural production due to adverse effects on food quality (safety and marketability) and plant growth (due to phytotoxicity). Ingestion of metals such as Pb, Cd, Hg, As and Cr can pose a greater risk to human health[4]. High concentrations of lead in the soil can reduce soil productivity andVery low concentrations of lead can suppress several vital processes, i.e. Photosynthesis, wilted old leaves, stunted leaves [5]. One of the most crucial trace metals required for plant growth is copper [6]. It is a part of several enzymes and actively participates in signification. Determine the physico-chemical characteristics and heavy metal concentration in soil and water samples was the aim of this investigation.

Material and Methods

Sampling and Analysis

Twenty soil and water samples were gathered from the mining industry in and around Ajmer, Rajasthan. Polythene bags were used to collect soil samples, while 1-liter plastic bottles were used to collect waste water. The following parameters—pH, electrical conductivity, TDS, organic carbon, and heavy metals (Cu)—were examined in soil and water samples.

Preparation of Water Sample

Water samples were digested with5 ml HNO_3.Boil and evaporate a sample on hot plate, then coolit and make up the volume to 100 ml [7].

Preparation of Soil Sample

2 gm air dried sieved soil sample were taken in 250 mlglass beakers and digested with 8 ml of aqua regia on a sandbath for 2 hr. after evaporation to near dryness, the samples were dissolved with 10 ml of 2 % HNO_3 , filtered and then diluted to 50 ml with distilled water [8].

Analytical Method

A determination was made using soil and water samples. Digital metres were used to measure the pH, electrical conductivity, and total dissolved solids (TDS). Heavy metals (Cu) by the AAS method, and organic carbon by the Walkley and Black method [9].

Results and Discussion

The pH of different water samples ranged from 7.9 to 8.5.theminimum7.9 and maximum 8.5 were observed in w1 (far from source) and w10 (near source) water sample.Electrical conductivity of the samples ranged from 0.65 to0.95µs. Total dissolved solids ranged from 1825 to 2500 mg/. The concentration of Cu ranged from 2.4 to 3.7 mg/l. All water samples contain high concentration than permissible limit. (Table-1)

Table-1 Different parameters for different water samples

Sample	pH	Ec(µs)	TDS(mg/l)	Cu(mg/l)
W1	7.9	0.65	1825	2.4
W2	8.1	0.69	1965	2.54
W3	8	0.72	2054	2.58
W4	8.2	0.78	2198	2.6
W5	8.3	0.81	2245	2.8
W6	8.45	0.83	2328	2.9
W7	8	0.84	2375	3.1
W8	8.1	0.89	2422	3.2
W9	8.4	0.91	2480	3.5
W10	8.5	0.95	2500	3.7
Standard	6-9	-	3000-5000	<2.0

The pH of different soil samples ranged from 8 to 8.7. Sorption of heavy metals is strongly dependent. Sorption increase with increasingpH[10]. Electrical conductivity of soil samples ranged from 0.25 to 0.40µs. The organic carbon of soil also affects the mobility of heavy metals. The organic carbon of different soil samples varied from 0.22 to 0.68%. The concentration of Cu in soil samples ranged from 150 to 225mg/kg which are much higher than permissible limit (table-2).

Table-2 Different parameters for different soil sample

Sample	pH	Ec(µs)	Organic carbon %	Cu(mg/kg)
S1	8	0.25	0.22	150
S2	8.1	0.27	0.28	164
S3	8.16	0.28	0.32	169
S4	8.21	0.3	0.37	172
S5	8.29	0.32	0.4	178
S6	8.3	0.31	0.44	185
S7	8.41	0.33	0.59	191
S8	8.46	0.35	0.61	198
s9	8.6	0.37	0.63	215
S10	8.7	0.4	0.68	225
Standard	7-9	-	-	190

Conclusion

The study reveals that the physico chemical quality (pH, TDS)were within permissible limit. The heavy metal concentrations in waste water samples were higher than permissible limits. The concentration of Cu in soil samples was also higher than standards. This shows that the long term application of wastewater deteriorate the soil production and accumulation of toxic metals in plants cause severe health hazards in human being through food chain.

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Asthma Attacks And Environmental Influence On Them

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Abstract

A wide range of indoor and outdoor allergens, irritants, as well as cold temperatures, can exacerbate asthma. Household Exposures to dust mites and cockroach allergens, and the irritant effects of environmental tobacco smoke, contribute significantly to asthma, morbidity. Environmental triggers can cause or exacerbate asthma. Patients can take a number of steps to reduce or avoid exposure to the pollutants, irritants and allergens that may trigger or exacerbate asthma episodes.

Keywords: Asthma, Trigger, Environment Allergy, Morbidity, Children.

Introduction

Asthma is a condition in which person's airways narrow and swell and may produce extra mucus. This can make breathing difficult and trigger coughing, a whistling sound (wheezing) when the person breath out and shortness of breath. For some people asthma is a minor nuisance but for others it can be a major problem that can interfere with daily activities and may lead to a life threatening asthma attack. Asthma can't be cured, but its symptoms can be controlled because asthma often changes over time. Asthma symptoms vary from person to person. There signs and symptoms include – shortness of breath, chest tightness or pain, wheezing, trouble sleeping, coughing, etc. Severe asthma attacks can be life threatening. Rapid worsening or shortness of breath or wheezing, no improvement even after using a quick relief inhaler, shortness of breath by doing minimal physical activity are the major signs of asthma emergency.

Causes of Asthma

Asthma has both genetic and environmental components. Atopic people are more likely to develop allergies, eczema, and asthma.Children whose mother's have asthma have themselves been diagnosed with asthma as compares to children of no asthmatic mothers (1).

However, rapidly increasing rate of asthma in the population cannot be caused by the genetic changes because genetic changes occur over many generation. In addition asthma is increasing among people without atopy or family history of allergic disease (2).

Environmental exposure are known to trigger attacks in people with asthma, such exposures may actually cause asthma in some people. Recent research has began to uncover important changes in immune function that can set the stage for asthma vary early in life(3). Some researchers have discovered that foetuses can become sensitized to environmental contaminants before birth, emerging with a strong predisposition to allergy and asthma. Some studies have found that breastfed infants are less likely to develop asthma and allergy than babies,who are fed formula (4).

Immune modulators in breast milk can help the infant's immune system to develop in a way that decrease susceptibility to infectious diseases and allergy.

Pollution is a real public health problem in both paediatric and adult population. Outdoor pollution exposure is the fifth leading risk factor for deaths in the world, accounting for 4.2 million deaths, while more than 3.8 million die from situations related to indoor pollution. Considering just the asthma deaths in 2016, the Global Burden of disease estimated that 420,000 people in the world died from asthma, more than 1000 per day (5).Worldwide, asthma was the second leading cause of death.

Global asthma Report 2018 informs that the proportions of asthma deaths in all causes mortality was 0.88% (6).Air pollution plays a role in asthma mortality and hospitalization.The prevalence of asthma increasing in densely industrialized urban regions. Cross-sectional and longitudinal studies show the association between asthma and exposure to air pollutants. (7,8).Pollution seems to be related to worse outcomes not only for patients with a previously confirmed asthma diagnosis but also for the emergence of new cases, that is, an increase in the incidence of the disease.Growing evidence confirms that inhalation of pollutants in childhood is associated with an increased risk of developing asthma and impairment of the development of normal lung function (9,10,11,12).Several reports show increase in frequency of new cases of asthma in childhood associated with continued exposure to pollutants generated by burning of fossil fuel (13,14,15).The determinant of health frame work approach to the role of environment in asthma can grouped in three categories -

1. Biological environment
2. Physical environment
3. Psychosocial environment.

Biological Environment

Over the past two decades, there has been increased attention to the role of the indoor environment (workplace, home, school) in asthma management. Exposure to multiple allergens in U. S. homes is common and most homes had at least three allergens at increased levels (16).In addition to home, children with asthma will have exposure in other environments where they spend time, e.g. school (17,18).

Allergens

Dust mites: Dust mites are one of the most prevalent sources of indoor allergens (19). Dust mite allergens activate the adaptive and innate immune system(20). Frequent washing of all bed lines in hot water, use of allergens impermeable mattresses and pillow encasements, vacuuming, removal of carpet and stuffed toys can be the strategies to reduce dust mite.

Rodents (Mouse): The major mouse allergen Mus M 1, is excreted in mouse urine. It is found in house dust particles and is high in kitchen and bed rooms (21).
Cockroach: Cockroach allergy has been established as an important cause of asthma. Cockroach allergens Blag 1 and Blag 2 are mostly evaluated in exposure assessment studies.(22)
Cat and dog: Cat and dog are the most common indoor furry pets and sensitization is known to be associated with severe asthma in childhood(23). The ideal approach furry pet allergen exposure reduction is to remove the pet from home. Fel d l and Can f lare the major allergens for cat and dog, respectively, and are present in saliva, hair follicles and skin.
Mold: There is a wide variety of indoor and outdoor molds and their allergenic properties vary by mold species. Mold sensitized children have significantly lower lung function an increased airway hyper responsiveness compared to children not sensitized to mold (24).
Endotoxin: Endotoxin is part of the gram negative bacteria's outer membrane and is shed after bacteria die (25). Higher domestic endotoxin levels are linked to increased asthma prevalence, severity, and exacerbations.
Microbiome: The microbiome is the combination of all microbes colonizing skin and mucosal surface. Many factors play a role in influencing the development, evolution and stability of microbiome- such as the innate immune response, genetic factors and environmental factors. Any disruption in this stability can increase risk of allergic disease later in life.
Genetics: Genetic variants and epigenetic changes are likely contributors to the origins of asthma. Innate immunity genes (CD14, TLR4 and TLR2) also play a prominent role among gene- environment interaction studies of asthma related phenotypes (26).

Physical Environment

Air Pollution

Air Pollution is an ubiquitous combination of pollutants including particulate matter (PM), chemical and biological materials like carbon monoxide, nitrogen dioxide, black carbon, and sulphur dioxide. There is a multitude of evidence that ambient air pollution can exacerbate pre-existing asthma. PM are airborne particles expressed as either $PM_{2.5}$ or $PM_{10\text{-}2.5}$is associated with worsening asthma symptoms.

If people with asthma, expose to low levels of NO_2 may cause increased branchial reactivity and make more susceptible to respiratory infections. Long term exposure to high level of nitrogen dioxide can lead to chronic bronchitis. When inhaled, outdoor pollutants and pollen can aggravate the lungs and lead to chest pain, coughing, sneezing, shortness of breath etc. worsen the chronic respiratory disease asthma. Chemical irritants are found in some products in houses. It may trigger asthma. Products such as cleaners, paints, adhesives, pesticides, cosmetics or air fresheners, at sufficient concentrations in the air can trigger a reaction.

Smoke from wood-burning stoves and fireplaces contains a mixture of harmful gases and small particles. Breathing these small particles can cause asthma attacks and severe bronchitis. Second-hand smoke is the smoke from a cigarette cigar, or pipe, that is exhaled by a smoker. Second-hand smoke contains more than 4,000 substances, including several compounds that cause cancer. This smoke can trigger asthma and increase the severity of attacks. Children's developing bodies may make them more susceptible to the effects of second-hand smoke.

Psychosocial Environment

The Psychosocial environment is becoming increasing recognized as a significant contributor to asthma morbidity. It includes person's neighbourhood, socioeconomic status, family relationships and social networks. The primary caregiver's perception of neighbourhood safety is associated with childhood asthma morbidity among inner-city school children with asthma; and caregiver stress is related to asthma morbidity among children (27).
Fear, anger, frustration, laughing or crying can also act as triggers for asthma patients.
Weather: Cold air, weather changes and humidity can trigger asthma.

Conclusion

A wide variety of factors are known to affect asthma but no one is specific cause, either biological, environmental or psychosocial, has been identified. Asthma triggers are different for each person, if triggers are reduced or stopped, symptoms and the need for quick relief medicine are lessened. Successful long term control of asthma requires identifying environmental triggers, allergens, and irritants that increase symptoms or precipitate exacerbations.These factors are potentially modifiable, it is important to either remove or minimize them to reduce overall risk.Determination of sensitivity to a specific allergens is usually not possible through the persons medical history alone but requires testing current recommendations for avoidance measures are allergens specific and person should be tested for sensitivity only to allergen they may be exposed to. Early recognition and control of factors (inhalant allergens,irritants etc.) is critical in overall management of asthma the goal of medication management should always be directed at measures that minimize the complexity and intensity of meditations using the lowest doses necessary to maintain control of symptoms.
Exposure to pollution is an important risk factor for childhood asthma. However, in adults, the conclusions are less definitive, but additional studies are gradually clarifying our understanding in this point. The mechanism through which pollutants induce asthma are multiple. The advance in science on the harmful effects of pollution on respiratory diseases, has not yet experienced the necessary diffusion, event among professional is the various health professions.

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Meditation And Palliative Care

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World Health Organization defines: “Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems physical, psychological and spiritual”

Palliative care is a treatment model focused on the care of patients with all types of progressive incurable diseases, including cancer; advanced diseases of the heart, lungs, kidney and liver; and neurodegenerative diseases. Palliative care includes a broad range of interventions that together helps the patient and family maintain a good quality of life while living with the disease, and allows the patient with advanced illness to face the end of life with comfort ensured and the family supported.

Palliative care focuses on controlling pain and other symptoms, and meeting a person’s social, emotional and spiritual needs. It is acknowledged that spirituality includes whatever gives a person meaning, value and worth in their life. Palliative care intends to relieve pain and suffering of the patients and their family members. The speciality of pain management has developed in medicine and other disciplines to address the need for comfort, functional restoration and treatment of associated problems.

Palliative care:

1. provides relief from pain and other distressing symptoms;
2. affirms life and regards dying as a normal process;
3. intends neither to hasten or postpone death;
4. integrates the psychological and spiritual aspects of patient care;
5. offers a support system to help patients live as actively as possible until death;
6. offers a support system to help the family cope during the patients illness and in their own bereavement;
7. will enhance quality of life, and may also positively influence the course of illness;

The multidisciplinary team that staff these programs include anaesthesiologists,surgical physicians, psychologists, acupuncturists, hypnotherapists and religious workers.

We are convinced that nonivasive management in pain and psychological approaches in pain therapy are sleeping giants. Now it appears that the long sleep is over. For well over 2000 years noninvasive therapy in pain was practiced in every culture as a folk tradition.

Clinicians should offer patients and families means to contact pear support group. Pastoral care members should participate in health care team meetings and discuss the needs of treatment of patients.

Physical and psychosocial therapies can be used concurrently with drugs and other modalities to manage pain. These interventions can be carried out by professional staff and often by the patients or family members.

Psychological modalities in pain treatment includes mainly psychosocial interventions, music therapy, patient education, psychotherapy, peer support groups, hypnosis and spiritual approach in many religions, and meditation.

Hypnosis, self-hypnosis, meditation are non-invasive and non-pharmacological strategies in pain and suffering therapy in palliative care. They are highly cost- effective. Pharmacological strategies involve very high cost investment which,particularly in developing countries, can be afforded by very few.

Interest in religion and spirituality as a source of resilience in coping with physical illness has seen a dramatic increase in recent years (Koeing et al, 2001a, 2001b, Plante and Sherman, 2001).

There are various types of meditation.Broadly speaking they are Christian meditation, Buddhist Meditation, Zen Buddhism, Islam Meditation, Judaism and Kabbalah Meditation, Jain Meditation, Taoisn’swuwei meditation and Hindu Meditation.But, irrespective of meditation belonging to Schools of Various Religious Thoughts, it is exclusively a secular approach of our life which has its roots in psychophysical concentration at some specific point in our brain region which is known as Sixth Chakra or Ajna Chakra in Yoga system and which is situated near hypothalamus in human anatomy.Meditation is an experience that cannot be described. It works profound changes in the psyche. It operates on the super- conscious level rather than the subconscious level so it should not be confused with a hypnotic state.

Meditation is a mysterious ladder which reaches from pain to bliss, from restlessness to abiding peace, from ignorance to knowledge and from mortality to immortality. Meditation cannot be taught, just as sleep cannot be taught. Just as one falls into sleep, in the same way meditation comes by itself.To still the mind and enter into the silence requires daily practice. For beginning the meditation we should have a proper environment and attitude.

We can consider meditative states as psycho-social-spiritual intervention in palliative care. Meditation can improve resilience and coping, and can minimize suffering for both patients with advanced illness and their caregivers. It has been proposed that several techniques of meditation may reduce stress by increasing awareness and acceptance. There are different ways, depending on the different School of Thoughts, to reach meditative stages.

In addition to many forms of psychotherapies practiced in western countries, spiritual therapy through meditative states also, help to encourage the dying patients to discover meaning and resolution in living until their death. In eastern countries, there are many types of meditative techniques, which today are practiced and studies in the entire

world. Integral Yoga, Kriya Yoga, Kundalini Yoga, Royal (Raj) Yoga, Sahaj Yoga, SuratShabdYoga, Transcendental Meditation, YogNidra, Mindfullness, Zen meditation and many others, may be recommended as spiritual therapies for anxiety and psychosomatic symptoms' management during palliative care.

Patanjali has suggested for Ashtanga Yoga (Royal Yoga). Proper practice of Yoga Meditation increases the power of stress tolerance. When stress is aroused, people must manage it, and further it must be prevented and then complete elimination is possible with the practice of Yoga meditation. Thus, Yoga practices are to be practiced with patience and perseverance to keep us healthy. Yoga meditation is integration. Therefore, its main goal is to reassemble the divided part of the human being. It brings about the union of body, mind and soul.

We can do meditation while standing, sitting, lying (particularly during sickness) or even walking, and regular practice is associated with improved mental and physical health. New researches have found that these benefits may be due to increased dopamine (feel good hormone) levels in the brain.

One study including 8 experienced meditation teachers found a 65% increase in dopamine production after meditation for 1 hour, compared with resting quietly. Meditation may reduce stress by increasing awareness and acceptance. I have already mentioned that mediation is the concentration to meditate at sixth orajna chakra. Some views suggest that the ajna chakra has correspondence with optic chiasma. Optic chiasma is closely situated with the hypothalamus. So during meditation hypothalamus is activated in a way to function optimally to bring about homeostatic condition.

During meditation, the hypothalamus may inhibit the adrenaline output of the adrenal medulla, which decreases anxiety. Decreased adrenaline coupled with deep relaxation state experienced during meditation, allows the hypothalamus to bring about tranquillity (Chugh, D., 1987). Epinephrine is both a neuro transmitter (acting in the brain) and a stress hormone (acting on other sites, such as the heart or glands).

It stimulates our sympathetic nervous systems to produce fight or flight responses, such as increased heart rate, increased blood glucose, and increased blood flow to muscles.Studies have found reduced, epinephrine levels during meditations (Walton, K.G., et al, 1995; infant, J.R., 2001)

During meditation, activation of the right amygdala in the brain results in stimulation of the hypothalamus. This process stimulates the parasympathetic nervous system, which is associated with a sense of relaxation and profound quiescence.Parasyntathetic nervous system dom inates during meditative calm.

Bodily changes occur in the meditative calm which involves changes in the activity of central nervous system and in blood chemistry, as well as in the autonomic nervous system (reversal from sympathetic dominance to parasympathetic dominance)

And lastly, melatonin is a hormone of pineal gland. Pineal gland is regarded as the seat of soul. During advanced stage of meditation pineal gland is activated and due to this there is a maximum output of melatonin production.Melatonin is reported to attenuate bone cancer pain. Melatonin exhibits its anticancer effects by modulating the immune system and shifting the immune responses toward cancer cells.

Thus it is clear that the benefits of practicing yoga meditation are very high as a palliative care tool and it is highly cost effective too. Meditation is secular approach of our life style.

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Environmental Challenges and Sustainable Development In The Ancient Era

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Abstract

Sustainability is the need of the hour. We need to reduce, reuse and recycle to protect our environment. History teaches us to learn from the past to enrich our present and build our future. When we study the ancient civilizations of Mesopotamia, Egypt and Indus Valley we get to know of their techniques of intricate canals, inundation and the use of river water and complex drainage systems.

"Those who do not learn from history are doomed to repeat it". It is high time now. Before the existence of the Human race itself becomes a thing of the past, we must act prudently in the present for a sustainable future.

Introduction

"The world has enough for everyone's need, but not for everyone's greed," - Mahatma Gandhi.

Ecosystem degradation has emerged as one of the biggest environmental threats around the world in the twenty first century. Almost all our ecosystems, terrestrial or otherwise, stand degraded to varying degrees due to a mix of factors such as developmental pressures, population growth, over-exploitation, etc.[1]

In 1972, the UN General Assembly designated 5 June as World Environment Day (WED) with the first celebration, under the slogan "Only One Earth" taking place in 1974. The theme for World Environment Day 2021 is "Ecosystem Restoration" and with that the UN Decade on Ecosystem Restoration has also been launched. The UN Decade on Ecosystem Restoration till 2030, the same timeline is also the deadline to meet the Sustainable Development Goals. Thus, this can be the last chance to act towards the restoration of the different ecosystems across the world and can hence save the planet from environmental degradation and the catastrophe of climate change.[2]

The great environmental activist and leader of the Chipko movement Sunder Lal Bahuguna once said, 'Ecology is the permanent economy' and keeping his words in mind we must help in maintaining the ecosystem, as it comprises of all the living organisms and includes forests, rivers, wetlands, grasslands, estuaries, and coral reefs.[3] Cities and farmlands also contain important human-modified ecosystems, they include a stable climate and breathable air; supplies of water, food, and materials of all kinds; and helps us protect ourselves from disaster and disease.[4]

One of the most striking indications of the modern cultural disconnect from nature is theexclusion of the natural environment from history teaching. To remedy this, all history should include, indeed focus on, environmental history.

The goal of environmental history is to understand how humans have affected and been affected by their natural environment, and with what results. Understanding past environmental change is a prerequisite for understanding future change.[5] Students need to learn the history of the state of the planet to be able to work on sustainability solutions.

By revering the ancient technological marvels, we are inspired to inculcate the same spirit of veneration that are ancestors held for the environment.

Dholavira, Indus Valley

Dholavira, one of the most significant sites of the Indus Valley Civilization in Gujarat, is a clinching evidence of the fact that the Harappans of the 3rd millennium BC had developed an amazingly advanced hydraulic system. Barring the plains along the Himalayas, the Harappan empire was largely arid or semi-arid, receiving marginal rainfall in both summer and winter.[6]

At Dholavira an interesting feature of the drainage system is the provision of small apertures at short intervals on the roofing slabs of the drain. At first, it was thought that the apertures were meant to allow people to descend and clean the drain, but they were too small. In fact, some of the apertures were far too deep and narrow to be used for regular clean-ups.Excavators from the Archaeological Survey of India (ASI) believe that the drains were designed to collect and carry monsoon run-off to a receptacle for later use. This would also explain the unusual width and height of the drains. The apertures could have acted like ducts to let air escape and facilitate the easy flow of storm water.The entire drainage system could have been set up to assiduously conserve every drop of rainwater that fell on the city. Water must have been a treasured substance in an area lacking a perennial source of surface water and where the groundwater, largely brackish and saline in the first place, tends to dry up during droughts.

The inference is also borne out by the fact that the Harappans were extremely conscientious about zealously storing the maximum water -- if not all of it -- that flowed in the flanking streams after the downpours. They created at least 16 reservoirs almost all around within the city walls. A casual estimate indicates about 17 ha, (36 per cent of the walled area) was appropriated for storing water harnessed from streams, by raising several dams -- at least three across the Manhar and two across the Mansar. In addition, there may have been inlet channels penetrating the city walls to bring in surface run-off.

The Manhar and the Mansar have adequate catchment areas, starting from the highest elevation of the northern chain of hills. There are rocky outcrops that were used efficiently for damming the streams. The Harappans reduced the velocity of the water flow further upstream by raising a series of dams, which also diverted surplus water to the reservoirs within the city.

In the whole scheme, the city walls played the most crucial role. First, they served to protect the city. They were strengthened at regular intervals with projecting salients and strong corner towers. There are presumably several gates, which, however, remain to be unearthed.[7]

In addition, the walls -- made of millions of moulded, sum-dried bricks carefully laid in mud-mortar -- acted as effective bunds. At places, the base of the wall is 7 meters thick. Both faces of the wall were plastered with fairly water-repelling, sticky clay. Special and vulnerable areas, mostly on the exterior face, were veneered with hammer-dressed stones.

In order to protect the walls from the water stored in the tanks, a broad road lined with stone-masonry was provided all along. This road served both as a bund and a path for the easy movement of people and materials. In its heyday, the entire city might have looked like a lake-city or a jala durga (water fort). The area reserved for the tanks was immense, approximately 750 meters long along the southern and northern margins, while the width varied from 70 to 80 meters. In the west, the tank area was about 590 meters long and the width went up to 170 meters in some places. In the southeastern area, for example, the reservoir covered about 5 ha, the largest within the walled area.

A very conservative estimate is that the reservoirs within the city walls covered an area of at least 17 ha, containing not less than 250,000 cubic meters of water. This excludes what might have been stored outside the city.

Keeping in mind the general slope of the city, several bunds were constructed across the width of the tanks to reduce the pressure of the stored water body on the city walls. The bunds also served as causeways for easier movement and in times of scanty rainfall, they enabled water to be stored in selected tanks instead of spreading it out over a large area, which would lead to quick evaporation and seepage.It seems clear that the Harappan architects were entirely familiar with the basics of hydraulic engineering, which could not have been acquired overnight. [8]The Harappan structures are similar to the *gabarbands* of south Baluchistan, now attributed to the *Magis,* the fire-worshipping Zoroastrian priests.

Archaeologically, the *gabarbands* can be associated with the pre-Harappan settlements because of their geographical proximity. The *gabarbands* are made of huge boulders and cut-blocks, across gaps in the hills with a broad catchbasin of ephemeral streams. The dams were used to store water or for irrigation. Sometimes, such constructions were raised to conserve soil and moisture.

Environmentally, rocky Baluchistan is similar to the Kutch -- both regions receive short but violent rainstorms, requiring effective water-control measures to ensure rich harvests, especially for winter-cropping. Such techniques may have been inherited by the Harappans of Dholavira, whose ancestry could have originated in Sind and Baluchistan, as attested to by the ceramics that preceded the emergence of classical pottery. There is logic in postulating that the Harappans adopted more or less similar methods in the alluvial plains as well.[9]

Egypt, Nile Valley

The river Nile was vital to life in ancient Egypt. Agriculture depended on its summer floods, which fertilized land along the river banks by depositing silt. The population of Egypt grew from nomads who settled along the fertile Nile banks and transformed Egypt into a sedentary, agricultural society by 4795 B.C. Farmers sowed and harvested crops during seasons around the flooding. However, during the inundation, they worked to pay off their taxes.[10]

High floods could devastate settlements, while low floods reduced crops yields and caused famine. Ancient Egyptians developed a method to measure the Nile's flood level, as their harvests and livelihood depended on the river's annual flow. [11]The nilometer was a method that recorded the level of a flood through marks on river banks, along stairs leading to the river, on stone pillars or in water wells. These measurements were used in estimating crop yields and taxes.[12]

The ancient Egyptians tracked the yearly flood of the Nile with hatched stones or wells called Nilometers that measured the river level, most notably at Elephantine Island.[13]They attributed the munificence of a normal inundation with the deity Hapy; a paltry or excessively violent flood, both unwelcome, might be associated with the god Seth's wrath.[14]

A Nilometer

The annual inundation was responsible for the continued fertility of the Nile's banks and delta area. The river rose quickly throughout the summer, reaching a low point in May to its highest flood levels in the middle of September. Stretches of the Nile Valley resembled a lake during the flooding, with some ancient Egyptian cities and villages transformed into temporary islands.[15] When the waters receded, pools were left behind on the floodplain and ancient Egyptian farmers planted their crops in the mud after it was absorbed.

This annual flood fueled the harvest, but ancient Egyptians saw more potential in developing ways to move water to places where it would have the greatest impact. They installed irrigation systems near Cairo using fresh water springs as their source. They also installed dams in southern Egypt to divert the Nile waters and increase the depth of the river itself. This allowed both for an increase in arable land and the ability to travel further into the African continent by ship with greater ease.[16]

Every irrigation system developed in ancient Egypt required the ability to divert water from a large body toward smaller collection systems. The close proximity of the Red Sea and the Nile to Egypt's population centers meant that the ancient Egyptians were not reliant on fickle season for their survival.[17] The Nile provided fresh water for the growing of crops, while the Red Sea provided salt water for fishing. The combination of the two allowed the Egyptians to have healthy diets throughout the year.

Without the access to the Red Sea, Egypt would have been isolated. Isolation would have hampered the development of the Egyptian technology

Mesopotamia, Euphrates and Tigris Valley

Ancient Mesopotamia, known by historians as the cradle of humanity, was the world's first established civilization. Mesopotamia means "the land between two rivers," and as humanity grew and flourished along the banks of these rivers, ancient people learned of both the wrath and the fruits of their natural environment.

When a river floods, water rises and starts flowing over its banks. This water contains mud called silt, which makes the land productive. The flooding of the Tigris and Euphrates rivers made the land around it rich and fertile. The people of Mesopotamia harvested different crops like barley, wheat and vegetables on this productive soil. But the land which was far away from the river, wasn't fertile. The people soon discovered a way by which the land could also be made productive. They dug ditches from rivers to the fields. It is a long, narrow stretch of water dug into the ground. The ditches were wide and many miles long. These were known as canals.

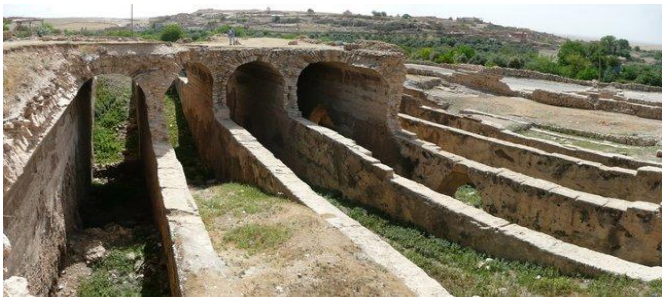
The growth and expansion of the state became entirely dependent on the controlled gradual seasonal flooding of the rivers as well as manmade irrigation systems.[18] Under the reign of the Akkadian ruler Sargan, the first conscripted army was organized to provide labor for flood-control projects. Under his rule, canals and channels were built to control the onslaught of the seasonal floods by diverting the water and gradualizing the flow.[19]

From around 3500 B.C. and over the next two millennia, Sumerians pioneered control of the water flow and the development of agriculture whose produce would feed the populations of over 20 city states.

Natural levees are embankments created by deposited river sediments as a river floods. They are asymmetrical structures with almost vertical walls adjacent to the river while tapering landwards along a gentle slope. Levee widths during the Sumerian period were commonly over 1 kilometer (.62 mile). River levels could vary between 4 and 6 meters (13 to 19.7 feet) during flooding. The levee crest could rise up to 10 meters (32.8 feet) above surrounding plains. Sumerians built up the levees by making foundations of reeds impregnated with bitumen, sun-baked surface seepage of crude oil common in the region.[20] Baked mud bricks, also bonded with bitumen, were placed on top of the foundations. This not only increased the height of river banks, it also protected them from erosion by water currents. During dry periods, Sumerians made a simple drainage system by hoisting water in buckets over the levees and watered cultivated land. They also poked holes into the hard and dry levee walls, allowing the water to flow and irrigate crops in adjacent fields.

Initially, Sumerians depended on a network of natural, anastomosing river channels for their water supply. They began to dig artificial feeder channels and canals between the third and second millennia B.C., making use of the rivers' avulsions. These are the shifts of water courses created by natural breaks in levee walls, or a weakened part of a levee wall caused by man-made drainage holes.[21] This process caused the water course to split in two. The new river branch either carved an entirely new course or meandered and rejoined the original channel. Sumerians excavated canals along these new water courses and dug smaller feeder channels. They used the excavated soil and debris to construct further levees. The canals could be up to 16 meters (52.5 feet) wide. Water flow was controlled by regulators – dams and sluice gates -- erected at points between specially strengthened levee walls.

Sumerian farmers faced a constant battle in dredging the canals free from deposited silt.Because of their origin as snowmelt, the Tigris and Euphrates river waters have always contained high concentrations of dissolved salts. Over millennia, these salts accumulate in the groundwater and are wicked up to the surface through capillary action in plant roots.Sumerian left their fields fallow for alternate years, or abandon them together with the adjacent levees and canals to overcome this problem.[22]



Canals in Mesopotamia

When the first cities were formed, their dwellers discovered that they could have access to water year-round if they built an irrigation system. To tame the rivers, early Mesopotamians built canals and reservoir basins. By 3500 BCE, Mesopotamia's residents had adapted to the then semi-arid region and had learned how to produce sustainable crops.

Some historians have a hypothesis that Mesopotamia's collapse was the result of environmental changes. Irrigation systems can leave behind traces of mineral salts that may have reached very high levels and rendered the soil poisonous for some edible plants.

"Those who do not learn from history are doomed to repeat it". It is high time now. Before the existence of the Human race itself becomes a thing of the past, we must act prudently in the present for a sustainable future. It is easy to lose hope when we think of the sheer magnitude of the challenges we face and the avalanche of bad news that we wake up to every morning but just as we caused the climate crisis, the biodiversity crisis and the pollution crisis, we can also be the cause for the restoration of ecosystems and can reverse the damage that we have done. We can thus be the first generation to Reimagine, to Recreate and to Restore nature and kick-start the movement for a better post-covid world.

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The Role of Yoga in Personality Development

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Abstract

This study aims to investigate the contribution of yoga education to holistic personality development. Students today encounter a variety of challenging circumstances, including stress, insomnia, anxiety, melancholy, loneliness, and ego. Problems like these negatively impact their personalities and cause them to decline. In this situation, yoga education is highly valuable to every learner. Daily yoga practise fosters the development of social, ethical, and moral ideals that alter people's behaviour and enable them to cope with the issues of everyday life. Students will then possess a strong personality, resulting in a fruitful and prosperous life. The theme of personality is significant. However, from a yogic perspective, there is another way to understand personality. Physical, emotional, intellectual, social, and spiritual components all contribute to a comprehensive personality. Yoga is a spiritual science that promotes the holistic development of the individual. Yoga aids in the growth of positive attributes, which promotes self-actualization and helps a person reach their full potential. Better personality can be achieved by following a yogic lifestyle. Personality has a specific identity. It is a dynamic organization of psychophysical properties. All aspects of human personality are cultured through the process of Yoga helping us to evolve towards perfection.

Introduction

The development of personality is an important issue. Personality starts developing since birth, but it assumes great importance during adolescence, when the reorganization of personality takes place. Personality is a very common term that is used in our day-to-day life. It tells us what type of person one is. We know that each person generally behaves consistently in most of situations. Examples of this consistency can be seen in a person who remains friendly or a person who is generally kind or helpful in most situations. Such a consistent pattern of behavior is termed as personality. It can be called as the sum total of behavior that includes attitudes, emotions, thoughts, habits and traits. This pattern of behavior is characteristic of an individual.

There are various dimensions of personality. These dimensions are related to physical, emotional,intellectual, social and spiritual aspects of our behavior. For a holistic personality development, yoga plays an important role. Yogic practices are found effective for development of all dimensions of personality.

Personality is defined as a deeply ingrained pattern of behavior that includes modes of perception, relating to and thinking about oneself and the surrounding environment. Personality traits are normal, prominent aspects of personality.

Different Simensions of Personality

Yoga and Physical Dimension of Personality

Physical dimension is related to our body. It means that all organs and systems of our body should be properly developed and function. It implies a healthy body without any disease. Yogic practices like asana, pranayama, and bandha play a beneficial role in physical development of children. There is a series of asanas and pranayamas which help to improve the functioning of the body.

Yoga and Emotional Dimension of Personality

Yogic practices are effective for development of emotional dimension related to our feelings, attitudes and emotions. There are two kinds of emotions: positive and negative. For example love, kindness are positive emotions, while anger and fear (exam phobia) are negative emotions. Similarly, our feelings and attitudes may be positive and negative. For emotional development, positive feelings, attitudes and emotions should be developed and negative ones should be controlled, as the negative attitudes and emotions work as a mental block for the development of personality. Yoga plays a critical role in development of positive emotions. It brings emotional stability. It helps to control negative emotions. Yogic practices such as yama, niyama, asana, pranayama, pratyahara and meditation help in emotional management. For example, the principle of non-violence will protect us from negative emotions and develop positive feelings of love and kindness. Similarly, other principles of yama and niyama will help to develop positive emotions and attitudes in our personal and social life and therefore help in the management of emotions.

Yoga and Intellectual Dimension of Personality

Intellectual development is related to the development of our mental abilities and processes such as critical thinking, memory, perception, decision-making, imagination, creativity, etc. Development of this dimension is very important as it enables us to learn new things and acquire knowledge and skills. Yogic practices such as asana, pranayama, dharana, dhyana (meditation) help develop to concentration, memory and thereby help in intellectual development.

Yoga and Social Dimension of Personality

Primary socialisation, probably the most critical aspect of the personality development takes place during infancy, usually within the family. By responding to the approval and disapproval of parents and grandparents and imitating their examples, the child learns the language and many of the basic behaviour patterns of her/his society. The process of socialisation is not limited to childhood, but continues throughout life and teach the growing child and adolescent about the norms and rules of the society in which she/he lives. Some key elements of this process include respect for others, listening carefully to other persons, being interested in them, and voicing your thoughts and feelings politely, honestly and clearly so that you can be easily heard and understood. Principles of yama include these key

elements and are very important as these help us in the betterment of our relationships with our friends, parents, teachers and others.

Yoga and Spiritual Dimension of Personality:

This dimension is related to the development of values. It is also concerned with self- actualisation which is related to recognising one's potential and developing them to the maximum. Proper development of this dimension helps the person to realise one's true identity. For spiritual development, yama, niyama, pratyahara and dhyana (meditation) are helpful. Yama and niyama help to develop our moral values while pranayama, and meditation help us to realise our true self. Introspection is very effective for the development of 'self'.

"Personality Development Through Yogic Practises" was investigated in 2016 (Rae). The focus is on character development. Studying modern psychology has been approached from a variety of angles. However, when viewed through a Yogic lens, personality may be regarded in a different light. The body, mind, community, and spirit are the five elements that make up a whole individual. This essay tries to examine character from a yogic viewpoint.

"Role of yoga education towards integrated personality development" was a topic of study for (Das 2022). The goal of this study is to determine how yoga instruction could promote holistic development. Today's technologically advanced students face a number of difficulties that could harm their mental health, such as stress, aggravation, insomnia, anxiety, melancholy, loneliness, and ego issues. A yoga education would be extremely beneficial for every single student right now. Daily yoga practise aids in the development of social, ethical, and moral ideals, which change human behavior and increase resilience in the face of everyday obstacles. If that occurs, our children will graduate from high school with strong personalities that will prepare them for successful, meaningful lives.

"Role of 'Yoga' In Personality Development" was examined by (Sinha 2020). In this article, we attempt to define yoga's contribution to the process of knowledge exchange on enhancing character and performance in people. The justification above makes it clear that regular yoga exercise enables one to reach their full human potential to the same degree as a Divine human being. It also discusses the various forms of yoga and how practising them may help someone become a shining example of how to integrate their body, mind, society, and spirit in the best possible way.

The role of yoga for young people's personality development and skill empowerment was researched (Malathi and Ramadas 2019). Young people are an excellent seed in all forms of culture. A healthy seed is the foundation of a healthy tree. Superior to those produced by a bad tree are the seeds produced by a good tree. But to create a society that is well-ordered, exceptional young people are needed.Due to the increasingly challenging environment they must work in, everyone in today's society is under more stress. Young people's development and agency are particularly susceptible to the effects of these lifestyle decisions. Yoga's main goals include uplifting and healing young people. Yoga can help you relax while also sharpening your focus. In doing so, they will help raise their level of living. Yoga not only increases your confidence but also helps you feel good about yourself, make wise decisions, and develop self-control. Yoga should therefore be incorporated into daily life by people from all walks of life, but especially by young people. Yoga is not just a spiritual practise.

The impact of yoga on mental readiness in connection to personality development was researched (Karmakar 2018). The purpose of this conceptual piece is to discuss the value of yoga and yoga practises for mental readiness in relation to character development.Regular yoga exercise enhances both mental toughness and flexibility. Regular yoga practise not only encourages physical and mental health, which in turn leads to mental readiness, but it also generates an upbeat environment, which in turn helps develop character. The term "Yoga" is a well-known one that appears frequently in a number of Indian Yogic writings. They discovered that yoga was an excellent technique for soothing their occupied bodies and brains.The focus is on character development. Of course, personality is a psychological trait that depends on a variety of other psychological factors. Contemporary psychology has been studied from a variety of angles. In yogic jargon, the word "personality" refers to a person's physical, emotional, intellectual, social, and spiritual components. In this paper, character qualities will be examined from a yoga perspective. This study clarifies the role of yoga in the relationship between psychological development and mental readiness.

Based on the study, it can be concluded that Yoga Education and regular practice of the different yoga techniques had a beneficial effect on the personality development of students at the physical, mental, emotional and intellectual levels. . It also helps us to improve the various personality traits like loyalty, sincerity, kindness, conscientious, confident, self identity, decision making ability, communicate effectively with clarity of thought and hope to lead a positive happy life. The process of education for the improvement of personality is a continuous function. Therefore it is necessary to introduce this subject will attached from primary to university higher education; this will bring healthy, wealthy, happy and prosperous life to all of us. Though Indian government takes some initiatives for the implementing of yoga education in different educational levels but some special and strong infrastructure are needed to be taken to fulfil these initiatives.

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Implementing the UN Goals for Sustainable Development: Vision to Action

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Abstract

The United Nations established a series of 17 global goals that are referred to as the Sustainable Development Goals (SDGs) in 2015 to direct global efforts towards sustainable development. The most crucial SDGs and the problems they pose include eradicating and reducing poverty rates through addressing economic Inequality and constrained access to essentials. Another important SDG is to reduce hunger and malnutrition by fostering sustainable agriculture and enhancing food access. However, problems such as poverty, climate change,and food insecurity exist. Another significant SDG aimed at encouraging healthy lives intended for all ages well health and wellbeing. Due to the lack of a sufficient number of healthcare workers, infectious and non-communicable diseases, and mental health problems are obstacles.Governments, businesses, and individuals must work together to implement these SDGs in order to meet their goals and promote sustainable development initiatives around the world. In this article the first four Sustainable Development Goals (SDGs) may be summarized by the researcher, along with their objectives and difficulties. They highlighted the need of fighting poverty, ensuring food security, promoting healthy lifestyles, and ensuring Everyone is able to get a top-notch education. These objectives face obstacles such as economic inequality, food hardship, poor healthcare, and restricted access to education. To accomplish these objectives and support efforts for global sustainable development, the researcher highlighted the importance of a coordinated effort from governments, civic society, and the commercial sector.

Key Words: SDGs, Sustainable Development, Poverty, Hunger, Health, Education.

Introduction

The Sustainable Development Goals (SDGs), also known as the Sustainable Development Goals by UN, are a comprehensive framework with 17 goals and 169 targets intended to make the world more sustainable, just, and wealthy by the year 2030. All nations are urged to take action by the SDGs, governments, corporations, and people to collaborate in order to realize a sustainable future.

However, effective implementation at the local, national, and global levels is necessary to make the SDGs' vision a reality. To implement the SDGs, strategies, policies, and initiatives must be developed that are in line with them. Resources must also be mobilized, and collaborations between various stakeholders must be established. Additionally, it entails tracking and evaluating the SDGs' progress and, as necessary, corrective action.

The SDGs' implementation is a challenging task. However,endeavour since it necessitates overcoming a number of obstacles, including a lack of funding, limited institutional capability, and a lack of public awareness. In addition, the COVID-19 pandemic has made these issues worse and made it even more urgent to take action to achieve the SDGs.In this article, researcher has examined the significance of carrying out the UN Agenda for Sustainable Development, the opportunities and responsibilities involved in doing so, and the part that various stakeholders play important roles in achieving the SDGs. I have also discussed some effective SDG implementation cases and offer suggestions for expediting the SDGs' fulfillment.

Sustainable Development

In response to worries about the detrimental effects of economic expansion on the environment and social fairness, sustainable development concept was originally developed in the 1980s. Sustainable development has since emergedas a major goal for international development and a fundamental tenet for decision-making at the international, national, and local levels. In order to endangering the present, satisfy the demands of the present. future generations' capacity to satisfy their own wants and maintain existing economic, social, and environmental systems must be managed and resource use must be sustainable. It is a comprehensive strategy that aims to balance economic, social, along with outside circumstances when making decisions.

Sustainable development acknowledges the interdependence and mutual reinforcement of environmental conservation, social well-being, and economic prosperity. It seeks to advance socially and environmentally responsible economic growth while preserving the natural resources of the ecosystem and biodiversity.

17 Sustainable Development Goals

There are 17 interconnected goals that make up the Sustainable Development Goals (SDGs) of the United Nations, that, by 2030, seek to eradicate poverty, safeguard the environment, and advance prosperity for all. Every goal has particular milestones and metrics that track development towards accomplishing it. The SDGs are succinctly described as follows:

No Poverty

The objective is to eradicate poverty in all of its manifestations, including relative poverty and extreme poverty. The objective also seeks to guarantee that everyone has the same access to financial resources, essential services, ownership of land and other kinds of property, control over inheritance, natural resources, and useful new technologies.

Goals for No Poverty

The "No Poverty" SDG has the following particular goals:

1. Get rid of extreme poverty for everyone worldwide by the year 2030, which is currently defined as a person making less than $1.25 per day.
2. Reduce the percentage of men, women, and children of all ages living in poverty in all of its manifestations by at least 50% by the year 2030, as determined by national criteria.
3. Implement social protection systems and policies for all, including floors, at the national level, and by 2030, substantially all the poor and vulnerable will be covered.
4. Ensure that by 2030 all men and women, particularly the impoverished and the defenseless, have equal access to economic resources, ownership of land and other forms of property, control over inheritance, natural resources, appropriate new technology, and financial services, including microfinance.
5. By 2030, increase the resilience of the poor and those who are vulnerable and lessen their exposure to and susceptibility to natural disasters, economic shocks, and social upheavals.
6. Make sure that significant resources are mobilized from a variety of sources, including through improved development cooperation, to give developing countries, especially the least developed ones, adequate and reliable means to implement programmes and policies to end poverty in all of its forms.
7. To encourage increased investment in initiatives aimed at eradicating poverty, build effective policy frameworks at the national, regional, and international levels that are based on pro-poor and gender-sensitive development policies.

Challenges

1. **Economic inequality:** The "No Poverty" SDG is significantly hampered by economic disparity. The wealth disparity is growing in many nations, making it more challenging to eradicate poverty.
2. **Lack of access to essential services:** People who lack access to essential services for example clean water and sanitary facilities, health care, and education may continue to live in poverty.
3. **Discrimination and social exclusion:** People's opportunities might be restricted and kept in poverty as a result of discrimination based on gender, race, ethnicity, disability, and other reasons.
4. **Conflict and instability:** By damaging infrastructure, upsetting markets, and displacing people, conflict and instability can lead to poverty.
5. **Climate change and environmental degradation:** The poor are particularly vulnerable to the effects of climate change and environmental degradation.

A comprehensive strategy that incorporates measures to combat social exclusion, promote peace and stability, address prejudice, reduce inequality, and minimize the effects of climate change and environmental degradation is needed to solve these issues. To ensure that initiatives are coordinated and successful, cooperation between governments, civil society, and the private sector is also necessary.

Zero Hunger

By fostering sustainable agriculture, strengthening food security, and raising the productivity and income of small-scale farmers, this goal aims to put an end to hunger and malnutrition. Additionally, it aims to increase access to wholesome food, particularly for vulnerable groups like children, pregnant women, and breastfeeding mothers.

Goals for Zero Hunger

1. By 2030, eradicate hunger and ensure that everyone has access to enough food throughout the year, with a focus on the underprivileged and those in vulnerable situations, such as infants.
2. End all types of malnutrition by 2030, including reaching the goals for preventing stunting and wasting in children under five years old by 2025. You should also take care of the nutritional needs of older people, pregnant and lactating women, and teenage females.
3. Double the agricultural productivity and incomes of small-scale food producers by 2030, especially for women, indigenous peoples, family farmers, pastoralists, and fishers. This can be done in part by ensuring that all producers have equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value-adding and non-farm employment.
4. Maintain the genetic diversity of seeds, cultivated plants, domesticated animals, and their related wild species by the year 2020, including through well-managed, diverse seed banks at the national, regional, and international levels, and encourage access to and equitable sharing of benefits resulting from the use of genetic resources and related traditional knowledge, as per an international agreement.
5. To increase agricultural productivity in developing nations, especially the least developed nations, increase investment in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks, among other things. In accordance with the Doha Development Round's mission, eliminate all forms of agricultural export subsidies and any export measures with an equivalent impact in order to correct and prevent trade restrictions and distortions in global agricultural markets.

Challenges

1. **Poverty:** One of the biggest causes of hunger is poverty. People who are poor frequently do not have access to food and may not have the money to buy or grow their own food.
2. **Climate change and environmental degradation:** These two factors can have a large negative impact on agriculture, resulting in crop failures, decreased yields, and the extinction of species. People may find it challenging to obtain food as a result of shortages and price rises.
3. **Conflicts and migration:** Conflicts and migration can destabilize food systems, obliterate infrastructure and crops, and cause food shortages and malnutrition.

4. **Food loss and waste:** Due to poor harvesting, storage, transportation, and consuming practices, a sizeable amount of food is lost or squandered every year. As a result, precious resources are lost, which increases hunger and poverty.
5. **Lack of access to education and information:** Poor health and nutrition results can result from a lack of education and information on good farming practices, which also restricts people's capacity to obtain and cultivate food.

A comprehensive strategy is needed to address these issues, one that incorporates measures to fight poverty, advance sustainable agriculture, lessen the consequences of climate change, deal with conflict and displacement, cut down on food loss and waste, and increase access to knowledge and information. To ensure that efforts are coordinated and successful in reaching the "Zero Hunger" SDG, collaboration between governments, civic society, and the commercial sector is also essential.

Good Health and Well-being

The third objective of the 2030 Agenda for Sustainable Development is the "Good Health and Well-Being" SDG (Sustainable Development Goal). By addressing a variety of health issues and fostering access to necessary health services, it seeks to ensure healthy lives and promote wellbeing for all ages. The SDG emphasizes the significance of achieving universal health coverage (UHC), which states that everyone should have access to high-quality healthcare without experiencing financial hardship, regardless of their socioeconomic level. This covers both the prevention and treatment of both communicable and non-communicable diseases, as well as access to necessary medications and immunizations.

Goals for Good Health and Well-being

1. Reduce maternal mortality to less than 70 per 100,000 live births globally by 2030.
2. End avoidable infant and child mortality by 2030, with all nations aiming to lower neonatal mortality to at least 12 per 1,000 live births and under-5 mortality to at least 25 per 1,000 live births.
3. End AIDS, TB, malaria, and other neglected tropical diseases epidemics by 2030, and fight hepatitis, water-borne illnesses, and other infectious diseases.
4. Reduce early mortality from non-communicable diseases by one-third by 2030, while promoting mental health and overall wellbeing.
5. Strengthen efforts to prevent and treat drug abuse, particularly the misuse of alcohol and narcotics.

Challenges

1. **Poor access to healthcare:** Many people around the world lacks access to basic medical supplies like drugs, vaccines, and treatments for both communicable and non-communicable diseases. This may result in avoidable fatalities and negative health effects.
2. **Lack of health workers:** This problem is particularly acute in rural and remote locations. This may lower the standard of treatment patients receive and restrict their access to health services.
3. **Infectious diseases:** A key obstacle to reaching the SDG for "Good Health and Well-Being" continues to be the introduction and reemergence of infectious diseases like HIV/AIDS, TB, and malaria.
4. **Non-communicable diseases:** In the world, non-communicable diseases like diabetes, cancer, and heart disease are on the rise. These illnesses are frequently linked to lifestyle choices like poor eating habits, inactivity, and tobacco use.
5. **Mental health:** Substance addiction, depression, and other mental health conditions like these contribute significantly to the worldwide illness burden. Many people lack access to mental health services or encounter stigma and prejudice when they do.

A comprehensive strategy is needed to address these issues, one that includes measures to boost healthcare access, spread out and increase the number of health professionals, prevent and control infectious diseases, encourage healthy lifestyles, and enhance mental health services. To ensure that efforts are coordinated and successful in reaching the "Good Health and Well-being" SDG, collaboration between governments, civic society, and the commercial sector is also essential.

Quality Education

The objective is to guarantee inclusive and equitable quality education and to encourage possibilities for lifelong learning for everyone. In addition to inexpensive and high-quality technical, vocational, and postsecondary education, it aims to give access to free and equitable primary and secondary education.

Goals for Quality Education

1. By 2030, ensuring that all boys and girls receive primary and secondary education that is free, equitable, and produces good learning results for Goal-4.
2. Assuring that all girls and boys have access to high-quality preprimary education by the year 2030 will prepare them for primary school.
3. Ensure that by 2030 all men and women have equitable access to cheap and high-quality technical, vocational, and tertiary education, including higher education.
4. Increase youth and adult populations with relevant skills, such as technical and vocational ones, for employment, good jobs, and entrepreneurship, by a significant margin by 2030.
5. By 2030, eradicate gender gaps in education and guarantee that those who are most at risk—including people with disabilities, indigenous peoples, and children—have equal access to all levels of education and vocational training.
6. Make sure that by 2030, the majority of men and women in adulthood and all young people have mastered literacy and numeracy.

7. By 2030, make sure that all students have the knowledge and abilities necessary to advance sustainable development, including, among other things, through instruction in sustainable living, gender equality, human rights, and the promotion of a culture of peace and nonviolence. They should also be taught about global citizenship, respect for cultural diversity, and the role that culture plays in advancing sustainability.
8. Build and update child-, disability-, and gender-sensitive educational facilities that offer a secure, peaceful, inclusive, and efficient learning environment.

Challenges

1. **Lack of access to education:** Many children and teenagers don't have access to high-quality education, especially those living in low-income nations and those who have been displaced or affected by conflict. Their potential for both personal and professional progress may be constrained as a result.
2. **Quality of education**: Even when kids and teenagers have access to school, the quality of that education might vary greatly. Lack of resources, obsolete curricula, and inadequate resources can all be factors in a lack of high-quality education.
3. **Gender disparities:** In many parts of the world, prejudice, poverty, and social conventions that give boys' education priority over girls' education provide significant obstacles for girls and young women to receiving education.
4. **Skills mismatch:** Education systems may not always match labour market demands, leading to a skills mismatch that might constrict employment and economic growth potential.
5. **Cost of Education:** The cost of education, such as tuition, books, and other materials, can be high, and many governments and families may find it difficult to cover these expenses.

In order to address these issues, a multifaceted strategy is needed, one that combines measures to enhance educational funding and guarantee that education is aligned with the labour market as well as to increase access to and quality of education. To ensure that efforts are coordinated and successful in reaching the "Quality Education" SDG, collaboration between governments, civic society, and the commercial sector is also essential.

Gender Equality

The objective is to empower all women and girls and to achieve gender equality. In addition to promoting equal access to healthcare and education, it also aims to ensure that all women and girls participate equally in political, economic, and public life.

Goals of Gender Equality

1. Make an end to all types of prejudice against women and girls worldwide.
2. Eliminate trafficking, sexual exploitation, and all other forms of violence against women and girls in both the public and private domains.
3. Eliminate all harmful practices, including female genital mutilation, child marriage, and forced marriage.
4. Recognize and reward unpaid care and household work by offering public services, infrastructure, and social protection laws, as well as through encouraging shared responsibility inside the home and family as is appropriate for your country.
5. Make sure that women have equal opportunity for leadership at all levels of decision-making in political, economic, and public life, as well as full and effective involvement.

Challenges

1. **Gender-based violence:** Physical, sexual, and emotional abuse against women and girls is a problem all around the world. This may prevent them from contributing completely to society and from reaching their full potential.
2. **Gender stereotypes and discrimination:** Deeply rooted gender stereotypes and prejudice still limit the prospects for women and girls and keep them from fully participating in social, economic, and political life.
3. **Lack of access to healthcare and education:** Women and girls around the world frequently lack access to healthcare and education, which can restrict their possibilities for professional and personal advancement and perpetuate gender inequities.
4. **Economic empowerment:** Women frequently encounter obstacles in their quest for respectable employment and a living income, which limits their ability to advance economically and maintains gender inequity.
5. **Participation in politics:** Women are frequently underrepresented in political leadership and decision-making positions, which limits their capacity to influence the laws and institutions that have an impact on their lives.

A comprehensive strategy is needed to address these issues, one that includes measures to combat gender-based violence, increase access to education and healthcare, encourage women's economic empowerment, and boost women's political participation and leadership. To ensure that efforts are coordinated and successful in reaching the "Gender Equality" SDG, collaboration between governments, civic society, and the commercial sector is also essential.

In addition to the first four goals, Other SDG's goals, can be summed up as follows.

Clean Water and Sanitation: The objective is to make sure that everyone has access to clean water and sanitation that is managed sustainably. As well as promoting better hygiene and water conservation practices, it aims to increase access to clean water and fundamental sanitation services.

Affordable and clean Energy: The objective is to guarantee that everyone has access to modern, clean, dependable, and inexpensive energy. In particular in developing nations, it aims to encourage the use of renewable energy sources, boost energy efficiency, and provide access to cutting-edge energy services.

Decent Work and Economic Growth: The objective strives to foster full and productive employment, sustained, inclusive, and sustainable economic growth, as well as decent work for everybody. It aims to lower unemployment rates, provide access to good jobs, and encourage innovation and entrepreneurship.

Industry, Innovation and Infrastructure: Building robust infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation are the three objectives of this mission. It aims to increase accessibility to dependable and long-lasting infrastructure, advance environmentally friendly industry, and foster technological advancement and R&D.

Reduced Inequalities: This objective strives to lessen inequality both inside and between nations. It aims to eradicate prejudice based on age, sex, handicap, race, ethnicity, origin, religion, or economic status. It also aims to lessen income disparity.

Sustainable Cities and Communities: The objective is to create inclusive, secure, robust, and sustainable cities and human settlements. In addition to promoting sustainable urbanization and transport, it aims to increase urban resilience to a range of environmental and social issues.

Responsible Consumption and Production: Sustainable consumption and production patterns are ensured by responsible consumption and production. It aims to encourage resource efficiency, waste reduction, pollution reduction, and sustainable production and consumption practices.

Climate Action: The objective is to take immediate action to mitigate the effects of climate change. In addition to promoting low-carbon and sustainable development routes, it aims to lower greenhouse gas emissions and boost climate resilience.

Life below Water: The objective is to protect and responsibly utilize marine resources for sustainable development. It strives to support small-scale fishers and coastal communities, as well as to promote sustainable tourism and economic activities that are based on the sustainable use of marine resources. It also seeks to safeguard marine ecosystems, lessen marine pollution, and promote sustainable fishing. A variety of steps are required to accomplish this aim, including lowering the amount of plastic trash and other pollutants that enter the oceans, implementing sustainable fishing methods, safeguarding vital marine habitats, and encouraging marine conservation and restoration initiatives. In order to achieve sustainable development, it is imperative to address the issues affecting our oceans and marine resources. This is because having healthy seas is crucial to human and environmental well-being.

Life on Land: The objective intends to battle desertification, stop and reverse land degradation, and stop biodiversity loss. It also strives to maintain, restore, and promote the sustainable use of terrestrial ecosystems.

Peace and Justice: Access to justice for everyone, the creation of strong institutions at all levels, and the promotion of peaceful and inclusive communities are the objectives of the goal "peace, justice, and strong institutions." Through promoting the rule of law, ensuring access to justice, and upholding human rights, it aims to lessen all forms of violence and corruption.

Partnerships for the Goals: This objective strives to improve implementation processes and reenergize the international collaboration for sustainable development. It aims to improve collaboration between governments, civil society, and the commercial sector, increase resource mobilization and effective utilization, and foster capacity-building for sustainable development.

The SDGs are linked to one another and reinforce one another. Progress on one aim necessitates progress on others, and if one is neglected, progress on others may be hampered. The Sustainable Development Goals (SDGs) offer a thorough framework for attaining sustainable development and resolving the interconnected problems that the world is currently facing, such as poverty, inequality, climate change, and conflict.

Conclusion

The Sustainable Development Goals (SDGs) offer a thorough framework for tackling the most important social, economic, and environmental problems the world is currently facing. The SDGs include eradicating poverty, improving food security, ensuring healthy lifestyles and well-being, and providing quality education for all as concrete aims and indicators for achieving sustainable development. Governments, public society, and the commercial sector will all need to work together to achieve these goals. A thorough and integrated strategy is required because it is crucial to understand how progress made towards one objective might influence progress made towards other goals. In order to create a more sustainable and just society for future generations, the SDGs will ultimately need the continued commitment and cooperation of all stakeholders.

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Effect of Plant Growth Promoting Rhizobacteria & Fungi On Growth of Sesame (*Sesamum Indicum*)

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Abstract

The evaluated experimented study shows the effect of PGPR and Fungi strains includes *Rhizobium* sp*., Pseudomonas aeruginosa, Basillus subtilis, Aspergillus niger* and *Tricoderma harziaman* on seeds germination and yield of field grown *Sesame indicum* plant.The result of first and second study shows seed inoculation enhanced the growth and Rhizobacterial inoculation increase the leaf and shoot weight, *respectively*, significantly. Result in response to co-inoculation of rhizobacterial strain and rhizofungi of *Basillus subtilis* with *Aspergillus niger* shows increased root length (134 + 0.01) and root dry weight (703 + 0.03), whereas co-inoculation of rhizobacterial *Basillus subtilis* with rhizobacteria *Trichoderma harzianum* shows increase in shoot length (130 + 0.02) and shoot dry weight (692 + 0.01) compared to uninoculated control. This result shows that combined inoculation of PGPR showed significant increase in plant growth and dry matter of plant.

Keyword: Rhizobacteria, Rhizofungi, Inoculation, *Sesamum indicum*, PGPR

Introduction

Sesame or Til oil have been mostly used for cosmetics and medicine and manufacturing of branded oils. It is a good protector of ultra violet radiation and therefore, it is used in various cosmetics, and also in baby & children skin care. It is a good source of protein 22% and fatty oil 54%. Whole sesame seeds are rich (20% or more of the Daily Value, DV) in several B vitamins and dietary minerals, especially iron, magnesium, calcium, phosphorus and zinc. Sesame oil studies reported a reduction of systolic and diastolic blood pressure, oxidative stress and lipid peroxidation [1, 2]

Rhizobacteria are rhizosphere competent bacteria which aggressively colonize plant roots and multiply, to provide beneficial effects in growth and yield of agricultural crops both under greenhouse and field conditions [3]. Various microorganism (bacteria) promote plant growth collectively such bacteria are called PGPR [4]. PGPRs are free living bacteria [5]. Plant growth promoting rhizobacteria (PGPR) are group of bacteria that actively colonize plant roots to make cultivation sustainable and increase plant growth and yield. The mechanisms by which PGPR promote plant growth are includes the ability to produce phytohormones, asymbiotic N fixation against phytopathogenic microorganisms by production of siderophores, the synthesis of antibiotics, enzymes and fungicidal compounds [6]. It has been reported that PGPR increases growth and yield of agronomical important crops by improving soil fertility [7], another major benefit of PGPR is to produce antibacterial compounds that are effective against certain plant pathogen and also induced systematic resistance against a number of plant diseases caused by bacteria and fungi [8]. Under salt stress, PGPR have positive effect in plants on such parameters as germination rate, tolerance of drought, yield and plant growth [9]. Application of PGPR isolates significantly improves the percentage of seed germination under saline conditions [10]

Large quantities of chemical fertilizers are used to replenish soil N and P, resulting in high costs and severe environmental contamination [11]. Most of phosphorus in insoluble compounds are unavailable to plant. N2-fixing and P-solubilizing bacteria may be important for plant nutrition by increasing N and P uptake by the plants, and playing a significant role as plant growth promoting rhizobacteria (PGPR) in the biofertilization of crops. Nitrogen fixation and P.solubilization [12] production of antibiotic [13] and increased root dry weight are the principal mechanism for the PGPR. A number of different bacteria promote plant growth, including *Azotobacter* sp., *Azospirillum* sp., *Pseudomones* sp., *Bacillus* sp. *Acetobacter* sp. and *Rhizobium* [8]. Economic and environmental benefits can include increased income from high yields, reduced fertilizer costs and reduced emission of the greenhouse gas, N2O as well as reduced leaching of NO3, N to ground water. There is now an increasing number of PGPR being commercialized for crops. Bacteria in the groups Bacillus, Rhizobium and Pseudomonas have proven to be the most powerful phosphate-solubilizing bacteria [14].

Similar to PGPR (plant growth promoting rhizobacteria), some rhizosphere fungi able to promote plant growth upon root colonization are functionally designated as 'plant-growth-promoting-fungi' (PGPF) [15] .PGPF belong to genera *Penicillium*, *Trichoderma*, *Fusarium* and *Phoma*. Several species of PGPF have been reported to induce systemic resistance against various pathogens in cucumber plants 5. Plant growth promoting fungi (PGPF) are non-pathogenic soil inhabiting saprophytes, have been reported to be beneficial to several crop plants by promoting their growth and protecting them from diseases [16, 17]. Among these PGPF, some isolates of *Phoma* sp. and *Penicillium simplicissimum* GP17-2 were highly effective in inducing systemic resistance against cucumber anthracnose caused by *Colletotrichum orbiculare* [18, 19]. Dual inoculation of phosphate -solubilizing fungi (*A. niger* and *P. italicum*) showed significantly increased dry matter production and yield of soybean plants compared to the control soil [20, 21, 22].

However, information is not available on the PGPR in Sesame crop under field conditions. Therefore, the aim of this study was to evaluate effect of phosphate solubilization microorganisms (PSM) and plant growth promoting rhizobacteria (PGPR) on yield of Sesame. This attempt was to test if a combination of PGPR strains and PGPF would

enhance growth promotion on *Sesamum indicum* under pot condition as these organisms are of great potential value to organic agriculture in order to avoid fertilizers and pesticides. Thus study make to combine two different PGPR strains which have been shown to enhance plant growth activity of *Sesamum indicum* as compare to individual & control.

Materials and Method

Isolation of PGPR from *Sesamum Indicum* Rhizosphere

Isolation of PGPR isolates were made from rhizosphere soil of *Sesamum indicum* grown in irrigated fields. Ten grams of rhizosphere soil were taken into a 250 ml of conical flask, and 90 ml of sterile distilled water was added to it. The flask was shaken for 10 min on a rotary shaker at 120 rpm. One milliliter of suspension was added to 10 ml vial and shaken for 2 min. Serial dilution technique was performed up to 10-7 dilution. An aliquot (0.1 ml) of this suspension was spread on the plates of PDA medium. Plates were incubated for 3 days at 35°C to observe the colonies of the bacteria and for 8 days at 28°C to observe the colonies of fungus 15. Typical bacterial and fungal colonies were observed over the streak. Morphologically different colonies were selected, marked and re-streaked until pure cultures were obtained.

Identification of Isolated Bacteria

To raise pure cultures of bacterial isolates, a bacterial suspension was prepared in a tube containing sterilized water. The tube was vigorously shaken to prepare bacterial suspension. The suspension was diluted to 10-6 times with sterilized water and 0.5 ml of it was poured over Nutrient Agar plate. The petri-dishes were incubated for three hours at 160°C. After incubation, the bacterial forms grow and form characteristic colony morphology. The isolated colony was again sub-cultured to obtain a pure culture. The purified bacterial isolates were then subjected to various morphological, cultural and biochemical tests according to the methods cited in the “Hand Book of Microbiology” [23] and were identified up to generic and specific levels with the help of “Bergey’s Manual of Determinative Bacteriology” [24].

Identification of Isolated Fungi

Each fungus was purified using single spore culture technique. They were examined under stereo binocular microscope and single germinating spore was picked by needle and transferred to the Potato Dextrose Agar slants. The technique of James and Natalie [25] was adopted for identification of the unknown isolated fungi using cotton blue in lactophenol stain. The identification was achieved by placing a drop of the stain on clean slide with the aid of a mounting needle, where a small portion of the mycelium from the fungal cultures was removed and placed in a drop of lactophenol. The mycelium was spread very well on the slide with the aid of the needle. A cover slip was gently applied with little pressure to eliminate air bubbles. The slide was then mounted and observed with ×10 and ×40 objective lenses respectively. The species encountered were identified in accordance with Cheesbrough [26].

Observation

Three PGPR viz. *Rhizobium* sp., *Basillius subtilis* and *Pseudomonas aeruginosa* and two fungi viz. *Aspergillus niger* and *Trichoderma harzianum* were obtained from the rhizosphere soil of *Sesamum indicum*

Sterilization and Treatment of Seeds with PGPR and Fungi

Healthy seeds of *Sesamum indicum* have been selected and Seeds were surface sterilized with 10% chlorox for 3 min and then washed with 95% ethanol for 3 min with constant shaking; and later washed with sterilized water. In this experiment, technique for suspension preparation is the same as used in dual culture test. Seed pelleting method – fungal spore were count using hemocytometer and spore concentration adjusting to 15 × 103 conidia/ ml 10 seeds were pelleted with 3 ml. Spore suspension for each fungi for 30 minutes following by carboxyl methyl cellulose (0.2% w/v) for 50 second and then dried in shade, after drying the seeds were pelleted with 1 ml of bacterial suspension (1.0 OD) containing gum Arabic 20. Sterilized seeds were soaked in broth for 2 to 4 h. In case of control uninoculated seeds were dipped only in carboxyl methyl cellulose solution.

Experiment

After soaking, seeds were sown in pots containing autoclaved soil (table1).

Table; Pots were designated as Control, PGPRs and Plant Growth Promoting Fungi (Single and Double inoculation)

S. No.	POT	SEED TREATMENT
1	CONTOL	NO TREATMENT
2	PGPR1	*Rhizobium* sp.
3	PGPR2	*Pseudomonas aeruginosa*
4	PGPR3	*Basillius subtilis*
5	PGPF4	*Aspergillus niger*
6	PGPR5	*Trichoderma harzianum*
7	PGPR1+PGPR2	*Rhizobium* sp. + *Pseudomonas aeruginosa*
8	PGPR1+PGPR3	*Rhizobium sp. + Basillius subtilis*
9	PGPR1+PGPR4	*Rhizobium sp. + Aspergillus niger*
10	PGPR1+PGPR5	*Rhizobium sp. + Trichoderma harzianum*
11	PGPR2+PGPR3	*Pseudomonas aeruginosa + Basillius subtilis*
12	PGPR2+PGPR4	*Pseudomonas aeruginosa + Aspergillus niger*
13	PGPR2+PGPR5	*Pseudomonas aeruginosa + Trichoderma harzianum*
14	PGPR3+PGPR4	*Basillius subtilis + Aspergillus niger*
15	PGPR3+PGPR5	*Basillius subtilis + Trichoderma harzianum*
16	PGPR4+PGPR5	*Aspergillus niger + Trichoderma harzianum*

Harvesting of The Plants and Analysis

Sesame plants were harvested after 90 days of seed sowing through separating of plants from soil. The plants were washed through dipping into a vessel. Plant height (mm plant^{-1}) and root length (mm plant^{-1}) of each were recorded. Dry weights of shoot and root were recorded after drying in an oven at 70 ^{0} C.

Result & Discussion

PGPR colonize plant roots exert beneficial effects on plant growth and development by a wide variety of mechanisms. To be an effective PGPR, bacteria must be able to colonize roots because bacteria need to establish itself in the rhizosphere at population densities sufficient to produce the beneficial effects. The exact mechanism by which PGPR stimulate plant growth is not clearly known, although, several hypothesis such as production of phytohormones, deleterious organisms, activation of phosphate solubilisation and promotion of the mineral nutrient uptake are usually believed to be involved [8,27,28,29,30].

PGPR have been shown to solubilise precipitated phosphates and enhance phosphate availability. Results suggest that PGPR are able to induce the production of IAA (Indole Acetic Acid), solubilisation of phosphorus, and resistance to pathogens and pests, thereby improving growth of plants [8, 31].

Effects on Sesamum indicum after single inoculation of PGPR and Fungi

The increment in root and shoot length and root and shoot dry weight in response to single inoculation of rhizobacteria and fungi as compared to uninoculated control was given in TABLE 2. In this case, isolate of *Bacillus subtilis* was the most effective and caused up to 71.76% increase in root length, up to 61.29% increase in root dry weight, up to 60.00% increase in shoot length and up to 57.22% increase in shoot dry weight.

Effects on Sesamum indicum after Dual inoculation of PGPR with Fungi

The increment in root and shoot length and root and shoot dry weight in response to dual inoculation of rhizobacteria and fungi as compared to uninoculated control were given in TABLE 2. It was found that the plant growth was successfully observed and increase in root length (up to 64.51%), root dry weight (up to 77.25%), shoot length (up to 78.66%), and shoot dry weight (up to 94.72%) was observed in response to dual inoculation of rhizobacterial strain and rhzofungi strain *Basillus subtilis* with *Aspergillus niger* compared to control.

In this study, we investigated the effectiveness of PGPR isolates. Most of isolates significantly increased plant height, root length, and dry matter production of shoot and root of Sesame plant (Table 2). The production of phytohormones namely auxins, cytokinins, and gibberellins, is the most commonly invoked mechanism of plant growth and nitrogen fixation promotion by PGPR are not well possibilities including both direct and indirect effects have been suggested.

Phosphorus is one of the major nutrients [32], second only to nitrogen in requirement for plants. These species have been tested for solubilization of rock phosphates [33, 34].A recent study showed that *A. niger* and *Penicillium* species produces organic acids [35] act as a major solublizer. Higher available P and aggregate stability levels, higher soil carbon levels, enzyme activities and lower soil pH were also reported due to inoculation of these fungi [36]. Among phosphate solubilizing microorganisms, fungi perform better in acidic soil conditions [37]. Species of *Aspergillus*, *Penicillium* and Yeast have been widely reported solubilizing various forms of inorganic phosphates [38]. Fungi have been reported to possess greater ability to solubilize insoluble phosphate than bacteria [39]. *Aspergillus* spp., *Penicillium* spp., and *Fusarium* spp., has the more solubilizing ability of inorganic insoluble phosphate than bacteria, viz., *B.subtilis* and *B. megatarium* [40]. They concluded that application of biofertilizer prepared by above mentioned fungi should be helpful to reduce the salinity of soil by neutralization phenomenon. Increased P uptake by plants is reported due to inoculation of *Aspergillus niger* [41]. The phosphate solubilization and antifungal activity of *Aspergillus niger*, *Curvularia lunata*, *Rhizoctonia solani* and *Fusarium oxysporium* is reported [42] and the beneficial prospects of these organisms for better crop productivity is also described [20]. Since the *Rhizobium* spp., this is most effective in the formation of nodules and fixation of nitrogen the inoculation of plant growth- promoting rhizobacteria (PGPR).

Among the biocontrol agents, PGPR (plant growth promoting rhizobacteria) offer a promising means of controlling plant diseases besides contributing to the plant resistance, growth and yield. The resistance gain by pathogen to these systemic fungicides is of concern, thus demanding an evolution of newer fungicides and screening of certain commonly used fungicides before evolving a comprehensive and compatible integrated disease management (IDM). Bacteria belonging to *Pseudomonas* and *Bacillus* genera are widely being used in biological control of plant diseases. Non-pesticidal management of plant diseases especially with PGPRs, is gaining popularity due to its advantages over chemicals [43, 44, 45, 46]. Numerous rhizosphere organisms are capable of producing compounds that are toxic to pathogens (plant diseases). *Bacillus subtilis* is one such commercialized PGPR organism, and it acts against a wide variety of pathogenic fungi [14, 46].Shows significant increase in yield of Sesame.

Table 2: - Observation table for inoculation of single strain and combined strains of PGPR and Rhizosphere Fungi

S. No.	Treatment POT	Shoot				Root			
		Length cm	Percent increased	Weight mg	Percent increased	Length cm	Percent increased	weight mg	Percent increased
1	CONTOL	75 + 0.02	-	360 + 0.01	-	25.5 + 0.03	-	62 + 0.01	-
2	PGPR1	90 + 0.05	20	380 + 0.02	5.50	29.2 + 0.01	14.50	78 + 0.05	25.80
3	PGPR2	98 + 0.01	30.66	386 + 0.04	7.22	32.5 + 0.04	27.45	82 + 0.03	32.25
4	PGPR3	120 + 0.02	60.00	566 + 0.01	57.22	43.8 + 0.01	71.76	100 + 0.01	61.29
5	PGPR4	112 + 0.01	49.33	448 + 0.02	24.44	34.2 + 0.05	34.11	94 + 0.02	51.61
6	PGPR5	105 + 0.04	26.66	403 + 0.02	11.94	38.5 + 0.03	50.98	95 + 0.03	53.22
7	PGPR1+PGPR2	118 + 0.01	57.33	486 + 0.01	35.00	30.2 + 0.02	18.43	76 + 0.03	22.58
8	PGPR1+PGPR3	125 + 0.02	66.66	493 + 0.03	36.94	32.1 + 0.05	25.88	84 + 0.01	35.48
9	PGPR1+PGPR4	121 + 0.05	61.33	501 + 0.03	39.16	32.5 + 0.01	27.45	92 + 0.05	48.38
10	PGPR1+PGPR5	117 + 0.02	56.00	496 + 0.01	37.77	31.6 + 0.01	23.92	90 + 0.01	45.16
11	PGPR2+PGPR3	128 + 0.01	70.66	660 + 0.01	83.33	35.8 + 0.01	40.39	86 + 0.02	38.70
12	PGPR2+PGPR4	126 + 0.01	68.00	652 + 0.04	81.11	38.6 + 0.05	51.37	94 + 0.01	51.61
13	PGPR2+PGPR5	124 + 0.05	65.33	643 + 0.02	78.61	36.5 + 0.01	43.13	92 + 0.02	48.38
14	PGPR3+PGPR4	134 + 0.01	78.66	703 + 0.03	94.72	45.2 + 0.05	77.25	102 + 0.04	64.51
15	PGPR3+PGPR5	130 + 0.02	73.33	692 + 0.01	92.22	41.1 + 0.02	61.17	98 + 0.02	58.06
16	PGPR4 + PGPR5	128 + 0.02	70.66	672 + 0.03	86.66	40.8 + 0.04	60.00	96 + 0.03	54.83

Conclusion

The overall result of the present study indicates that the dual-inoculation had promising positive effects on growth of Sesame grown in pots under natural conditions. Thus, it can be concluded from study that the use of dual inoculation of PGPR traits could be the more effective and novel approach for achieving better root growth and shoot growth of Sesame grown under natural conditions.

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Fluoride Distribution, Health Risk And Adsorbent Remediation Study of Ground Water of District - Jalaun, Uttar Pradesh

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Abstract

Fluoride contamination in groundwater is a significant issue affecting rural areas of District - Jalaun, Uttar Pradesh. High fluoride concentrations in drinking water can lead to dental and skeletal fluorosis, a serious public health concern. This research paper aims to investigate the physico-chemical characteristics of groundwater and evaluate the efficacy of low-cost adsorbents for defluoridation in rural areas of District - Jalaun, Uttar Pradesh. The defluoridation experiments will be conducted using low-cost adsorbents readily available in rural areas. These adsorbents may include locally sourced materials like activated alumina, bone char, brick dust, and agricultural waste residues. Batch adsorption experiments will be conducted to determine the optimal dosage of adsorbent, contact time, and pH for efficient fluoride removal. The equilibrium isotherms and kinetics of fluoride adsorption onto the selected adsorbents will be studied.

Keywords: Groundwater, Physico-Chemical Characteristics, Fluoride Contamination, Defluoridation, Low-Cost Adsorbents, Rural Areas, District - Jalaun, Uttar Pradesh.

Introduction

Access to safe and clean drinking water is essential for maintaining public health and well-being. However, in many rural areas of District - Jalaun, Uttar Pradesh, groundwater contamination with fluoride has emerged as a major concern. Elevated fluoride levels in drinking water pose significant health risks, including dental and skeletal fluorosis. Thus, it is crucial to investigate fluoride distribution in groundwater and explore effective defluoridation techniques to mitigate the problem. Fluoride contamination in groundwater primarily occurs due to the dissolution of fluoride-bearing minerals, such as fluorite and apatite, in geological formations. Uttar Pradesh, being a region with fluoride-rich bedrock, is particularly susceptible to groundwater fluoride contamination. The rural areas of District - Jalaun heavily rely on groundwater as a source of drinking water, making it imperative to address this issue to safeguard the health of the population.

The objectives of this research paper are two-fold. Firstly, to examine the fluoride distribution ingroundwater of rural areas of District - Jalaun. This analysis will provide valuable insights into the overall quality of groundwater and its suitability for various domestic purposes and health related issues spread due to fluoride distribution in the ground water of district Jalaun, Uttar Pradesh.

Secondly, the study aims to evaluate the efficiency of low-cost adsorbents for defluoridation of groundwater in rural areas. The utilization of locally available, cost-effective adsorbents can offer a practical and sustainable solution to mitigate fluoride contamination. Adsorbents such as activated alumina, bone char, brick dust, and agricultural waste residues have shown promising potential for fluoride removal.

In the following sections, the research will delve into the existing literature on fluoride contamination, health risk, and current defluoridation techniques. The study will then proceed with the methodology, data analysis, survey based analysis discussions to present a comprehensive understanding of the fluoride distribution and health risk of groundwater and the efficacy of low-cost adsorbents for defluoridation in rural areas of District - Jalaun, Uttar Pradesh.

Background and Significance of the Study

Groundwater is a vital source of drinking water for millions of people in rural areas of District - Jalaun, Uttar Pradesh. However, the presence of excessive fluoride in groundwater has become a significant concern, posing severe health risks to the population. High fluoride levels in drinking water have been linked to dental and skeletal fluorosis, which can lead to debilitating health conditions. Fluoride contamination in groundwater occurs due to the natural geological composition of the region, with fluoride-rich minerals present in the aquifer systems. As water percolates through the geological formations, it dissolves fluoride-bearing minerals, resulting in elevated fluoride concentrations in groundwater. In Uttar Pradesh, the prevalence of fluoride-rich bedrock exacerbates the problem, making it crucial to study and address the issue in rural areas of District - Jalaun. The outcomes of this research will serve several purposes. Firstly, they will contribute to the existing body of knowledge on fluoride contamination in groundwater, specifically in rural areas of District - Jalaun, Uttar Pradesh. This research will provide valuable data on the physico-chemical characteristics of groundwater, which can aid in designing appropriate defluoridation strategies and interventions. Secondly, the study outcomes will have direct implications for public health. By identifying areas with high fluoride concentrations, authorities and policymakers can prioritize targeted interventions, such as the installation of defluoridation units or the implementation of alternate drinking water sources in affected communities. This research can potentially contribute to the reduction of dental and skeletal fluorosis cases, improving the overall well-being of the rural population. Moreover, the utilization of low-cost adsorbents for defluoridation can address the financial constraints faced by rural communities. By assessing the effectiveness of locally available adsorbents, this study aims to provide sustainable and affordable solutions that can be easily adopted by the communities themselves.

In conclusion, this research on the distribution and health risk and defluoridation of groundwater using low-cost adsorbents in rural areas of District - Jalaun, Uttar Pradesh, holds immense significance. It aims to provide valuable insights into water quality, evaluate the performance of cost-effective defluoridation methods, and contribute to the development of targeted interventions to mitigate the health risks associated with fluoride contamination. Ultimately, the findings of this study can contribute to improving the living conditions and well-being of the rural population in District - Jalaun, Uttar Pradesh.

Problem Statement

The rural areas of District - Jalaun, Uttar Pradesh, face a significant challenge of fluoride contamination in groundwater. The high fluoride levels in drinking water pose a serious health risk to the population, leading to dental and skeletal fluorosis. This problem affects the quality of life and overall well-being of the rural communities relying on groundwater as their primary source of drinking water.

Objective

The objective of this research is to study the distribution and health risk of groundwater and evaluate the effectiveness of low-cost adsorbents for defluoridation in rural areas of District - Jalaun, Uttar Pradesh.

Specific Objectives Include

1. Assessing the distribution and health risk of groundwater in terms of pH, electrical conductivity (EC), total dissolved solids (TDS), fluoride concentration, and other relevant parameters. This analysis will provide a comprehensive understanding of the water quality and its suitability for various domestic purposes and also awareness about health related issues caused by fluoride distribution in ground water of district - Jalaun, Uttar Pradesh
2. Identifying the areas with high fluoride concentrations in groundwater to determine the extent of the problem and prioritize intervention strategies.
3. Evaluating the performance of low-cost adsorbents, such as activated alumina, bone char, brick dust, and agricultural waste residues, for defluoridation. This evaluation will involve batch adsorption experiments to determine the optimal dosage of adsorbent, contact time, and pH for efficient fluoride removal.
4. Investigating the equilibrium isotherms and kinetics of fluoride adsorption onto the selected low-cost adsorbents. This analysis will provide insights into the adsorption mechanisms and help optimize the defluoridation process.
5. Assessing the cost-effectiveness of the low-cost adsorbents and their feasibility for implementation in resource-limited rural areas.
6. Providing recommendations for effective defluoridation strategies based on the findings of the study, aiming to mitigate fluoride contamination in groundwater and improve the quality of drinking water in rural areas of District - Jalaun, Uttar Pradesh.

By addressing these objectives, this research aims to contribute to the understanding of the physico-chemical characteristics of groundwater in rural areas of District - Jalaun, assess the efficacy of low-cost adsorbents for defluoridation, and provide practical recommendations for sustainable and cost-effective defluoridation strategies. Ultimately, the goal is to mitigate the health risks associated with fluoride contamination and improve the quality of life for the rural communities in District - Jalaun, Uttar Pradesh.

Review of Literature

Fluoride contamination in groundwater

Fluoride contamination in groundwater is a widespread issue in many regions globally, including Uttar Pradesh, India. The geological composition of an area significantly influences the presence of fluoride in groundwater. Fluoride-rich minerals, such as fluorite and apatite, dissolve in water and increase fluoride concentrations. The sources of fluoride can also include industrial discharges, agricultural runoff, and anthropogenic activities. High fluoride levels in drinking water pose serious health risks, including dental and skeletal fluorosis.

Physico-chemical characteristics of fluoride-contaminated water

Groundwater contaminated with fluoride often exhibits certain physico-chemical characteristics. The pH of fluoride-contaminated water is typically neutral to slightly alkaline. The electrical conductivity (EC) and total dissolved solids (TDS) may also be elevated due to the presence of other dissolved ions. Additionally, fluoride concentration varies widely, depending on the geological formations and local hydrogeological conditions.

Existing defluoridation techniques and limitations

Several defluoridation techniques have been explored to reduce fluoride concentrations in groundwater. These include coagulation-precipitation, ion exchange, reverse osmosis, electrocoagulation, and adsorption. Each technique has its advantages and limitations. While processes like reverse osmosis and ion exchange are effective, they can be expensive and require skilled operation and maintenance. Therefore, low-cost defluoridation methods using locally available materials are gaining attention.

Low-cost adsorbents for defluoridation

Low-cost adsorbents have shown potential for fluoride removal from groundwater. Various materials have been investigated, including activated alumina, bone char, brick dust, and agricultural waste residues. Activated alumina is widely used and has a high fluoride adsorption capacity. Bone char, a by-product of the meat processing industry, has also demonstrated good defluoridation properties. Brick dust, rich in silica and alumina, has shown potential for fluoride removal. Agricultural waste residues such as rice husk, coconut shell, and sawdust have also been explored as adsorbents due to their abundant availability and affordability.

Batch adsorption experiments and optimization

Batch adsorption experiments are commonly used to evaluate the efficiency of adsorbents for fluoride removal. These experiments involve varying parameters such as adsorbent dosage, contact time, pH, and initial fluoride

concentration to optimize the defluoridation process. Equilibrium isotherms and kinetics models are used to analyse the adsorption behaviour and mechanisms.

Cost-effectiveness and feasibility

The cost-effectiveness and feasibility of defluoridation techniques are essential considerations, especially for rural areas with limited resources. Low-cost adsorbents offer an advantage in terms of affordability and accessibility. Their utilization can potentially provide sustainable defluoridation solutions that are suitable for implementation in rural areas.

Overview of fluoride contamination in groundwater

Fluoride contamination in groundwater is a significant global issue, affecting numerous regions around the world, including Uttar Pradesh, India. Fluoride is a naturally occurring element found in rocks, soils, and minerals. When groundwater comes into contact with fluoride-rich geological formations, it dissolves fluoride ions, leading to elevated fluoride concentrations in the water. The severity of fluoride contamination varies geographically, with some areas experiencing higher fluoride levels than others. In Uttar Pradesh, particularly in rural areas of District - Jalaun, the prevalence of fluoride-rich bedrock contributes to significant fluoride contamination in groundwater sources.

The primary sources of fluoride in groundwater can be categorized into natural and anthropogenic sources. Natural sources include the dissolution of fluoride-bearing minerals, such as fluorite (CaF_2) and apatite ($Ca_5(PO_4)_3(F,Cl,OH)$), present in the geological formations. Anthropogenic sources include industrial discharges, agricultural activities, and the use of fluoride-containing chemicals overview of health risk du to fluoride distribution in ground water.

The health impacts of consuming fluoride-contaminated water, especially over prolonged periods, are well-documented. Excessive fluoride intake can lead to dental fluorosis, a condition characterized by discoloration, mottling, and weakening of tooth enamel. Dental fluorosis affects both the aesthetics and functionality of teeth. In severe cases, it can lead to dental decay and tooth loss.

Long-term exposure to high fluoride levels in drinking water can also cause skeletal fluorosis. Skeletal fluorosis is a debilitating condition characterized by joint pain, stiffness, and skeletal deformities. It affects the bones and can lead to reduced mobility and an increased risk of fractures.

The World Health Organization (WHO) has established guidelines for fluoride in drinking water to protect public health. The recommended guideline value for fluoride in drinking water is 1.5 mg/L (milligrams per liter), with an upper limit of 1.5-2.0 mg/L in areas where dental fluorosis is prevalent. These guidelines aim to balance the benefits of fluoride in dental health with the prevention of adverse health effects.

To address fluoride contamination in groundwater, various defluoridation techniques have been developed. These include coagulation-precipitation, ion exchange, reverse osmosis, activated alumina adsorption, and biological defluoridation methods. The choice of defluoridation technique depends on factors such as cost, accessibility, water quality, and community preferences.

Existing defluoridation techniques and their limitations

There are several existing defluoridation techniques that have been developed to reduce fluoride concentrations in water sources. These techniques vary in their effectiveness, cost, and applicability to different contexts. Here are some commonly used defluoridation techniques and their limitations:

Coagulation-Precipitation

This technique involves the addition of coagulants such as aluminiumsulphate or calcium hydroxide to water, which react with fluoride ions to form insoluble precipitates that can be removed by sedimentation or filtration. While coagulation-precipitation can effectively reduce fluoride levels, it requires careful monitoring of dosage and pH control. Additionally, the disposal of sludge generated during the process can be challenging and may require further treatment.

Electrocoagulation

Electrocoagulation involves the application of an electric current to water, causing the formation of coagulant species that react with fluoride and other contaminants. These coagulants aid in the removal of fluoride through precipitation and adsorption mechanisms. While electrocoagulation can be effective, it requires a power source, electrodes, and careful control of operating parameters. The process can also generate sludge that needs proper disposal.

Materials and Methods

Study Area

The study was conducted in rural areas of District - Jalaun, Uttar Pradesh, known for groundwater fluoride contamination. Several villages were selected as sampling sites based on their fluoride levels and representation of different geological formations.

Sample Collection

Groundwater samples were collected from wells or hand pumps in the selected villages. A total of 60 samples were collected at regular intervals to capture seasonal variations. Proper sample collection procedures were followed to avoid contamination, and samples were stored in clean, labelled containers.

Fluoride Analysis

Fluoride concentration in both the groundwater samples and the treated samples from the adsorption experiments was determined using a fluoride ion-selective electrode or a spectrophotometric method, depending on the available resources. Calibration curves were prepared using standard fluoride solutions, and the samples were analyzed in triplicate to ensure accuracy.

Data Analysis

The obtained data were analyzed using statistical software, and appropriate statistical tests were applied to assess the significance of the results. The adsorption data were fitted to adsorption isotherm models (such as Langmuir, Freundlich) and kinetic models (such as pseudo-first order, pseudo-second order) to understand the adsorption behaviour and mechanisms.

Cost Analysis

The cost analysis of the low-cost adsorbents was performed to evaluate their economic viability for large-scale implementation. The costs of procuring or preparing the adsorbents, operational expenses, and maintenance requirements were considered.

Survey Based Analysis

For health risk due to fluoride distribution in ground water District – Jalaun, Uttar Pradesh.

Limitations

Any limitations encountered during the study, such as sample size, accessibility to certain resources, or constraints in the experimental setup, were acknowledged and discussed.

Study Area and Sample Collection

Study Area

The study was conducted in rural areas of District - Jalaun, Uttar Pradesh, known for groundwater fluoride contamination. The selected villages represented different geological formations prevalent in the region. These areas were chosen to capture the variation in fluoride levels and physico-chemical characteristics of groundwater.

Sample Collection

Groundwater samples were collected from wells or hand pumps in the selected villages. The sampling locations were strategically chosen to cover a wide geographic area and ensure representative sampling. The following steps were followed during sample collection:

a. Pre-sampling Preparation

i. The sampling equipment, such as bottles, was thoroughly cleaned and rinsed with the sample water to avoid any contamination.

ii. Gloves and other necessary personal protective equipment (PPE) were used during sample collection to maintain hygiene.

b. Sampling Procedure

i. The well or hand pump was flushed by pumping out water for a few minutes to remove any stagnant or stagnant water.

ii. A clean sample bottle was filled with water from the well or hand pump, taking care not to touch the inner surface of the bottle or contaminate the water.

c. Sample Preservation

i. The collected samples were immediately capped tightly to prevent evaporation and contamination.

ii. If necessary, appropriate preservatives, as per the specific parameters being analyzed, were added to the samples to maintain their integrity during transportation and analysis.

d. Sample Labelling and Documentation

i. Each sample bottle was labelled with a unique identifier, including the sampling location, date, and time of collection.

ii. Detailed records, including GPS coordinates, well depth, and other relevant information, were documented for each sampling site.

e. Sample Transportation and Storage

i. The samples were transported in coolers or insulated containers to maintain their temperature and prevent any changes in physico-chemical characteristics.

ii. Upon reaching the laboratory, the samples were stored in a controlled environment, adhering to appropriate storage conditions, until analysis.

Proper precautions were taken throughout the sample collection process to minimize any external contamination and ensure the integrity of the collected groundwater samples. The collected samples were then subjected to various fluorides and risk problems and also for comparing the efficiency of low cost adsorbe9-nt.

Conclusion

In conclusion, the study focused on the health risk awareness of fluoride-contaminated groundwater in rural areas of District - Jalaun, Uttar Pradesh, and the utilization of low-cost adsorbents for defluoridation. The findings of the study provide valuable insights into the feasibility of using low-cost adsorbents as an effective and affordable solution for mitigating fluoride contamination in these areas.The fluorides distribution health risk of groundwater samples revealed elevated fluoride concentrations, indicating the presence of fluoride contamination in the study area. This highlights the urgent need for suitable defluoridation techniques to ensure access to safe drinking water.

The literature review provided an overview of existing defluoridation techniques and their limitations, emphasizing the importance of exploring low-cost adsorbents for sustainable and cost-effective defluoridation in rural settings.The study identified and selected appropriate low-cost adsorbents for defluoridation based on their availability, cost-effectiveness, and potential for fluoride removal. The adsorbents were prepared and characterized for their physical and chemical properties to optimize their performance in fluoride adsorption.

Batch adsorption experiments were conducted using the selected low-cost adsorbents and groundwater samples. The experiments involved studying adsorption isotherms and kinetics to understand the equilibrium behaviour and the rate of fluoride adsorption. The data obtained from these experiments were analyzed using Langmuir and

Freundlich isotherm models, as well as pseudo-first order and pseudo-second order kinetic models.The results of the study demonstrated the efficacy of the low-cost adsorbents in removing fluoride from groundwater. The adsorbents exhibited high defluoridation efficiencies and significant fluoride adsorption capacities. The adsorption isotherms and kinetic models provided valuable insights into the adsorption behaviour and the optimal process parameters for fluoride removal.

The study's findings contribute to the understanding of defluoridation techniques using low-cost adsorbents and their potential application in rural areas of District - Jalaun, Uttar Pradesh. These findings can guide the implementation of sustainable and affordable water treatment strategies to address fluoride contamination and ensure safe drinking water for the rural population.Overall, the study highlights the importance of continuous research and development in the field of defluoridation, particularly in rural areas where access to safe drinking water is a significant concern. The utilization of low-cost adsorbents presents a promising approach for tackling fluoride contamination, and further studies and optimization efforts are warranted to enhance the efficiency and scalability of these defluoridation techniques.

Summary of Findings

The research study focused on the health risk of fluoride-contaminated groundwater in rural areas of District - Jalaun, Uttar Pradesh, and the use of low-cost adsorbents for defluoridation. The key findings of the study are summarized below:

Existing Defluoridation Techniques: The literature review highlighted the limitations of existing defluoridation techniques, such as high cost, technical complexity, and the generation of sludge or waste products. This emphasizes the need for low-cost and sustainable defluoridation alternatives.

Selection and Preparation of Low-Cost Adsorbents: Suitable low-cost adsorbents were selected based on their availability, cost-effectiveness, and potential for fluoride removal. These adsorbents were prepared and characterized to optimize their performance in removing fluoride from groundwater.

Batch Adsorption Experiments: Batch adsorption experiments were conducted using the selected low-cost adsorbents and groundwater samples. Adsorption isotherms and kinetics were studied to understand the equilibrium behaviour and rate of fluoride adsorption. The data obtained were analyzed using Langmuir and Freundlich isotherm models, as well as pseudo-first order and pseudo-second order kinetic models.

Performance of Low-Cost Adsorbents: The low-cost adsorbents demonstrated high defluoridation efficiencies and significant fluoride adsorption capacities. The adsorption isotherms and kinetic models provided insights into the adsorption behaviour and optimal process parameters for fluoride removal.

Overall, the findings of the study indicate that low-cost adsorbents have the potential to be effective and affordable solutions for defluoridation in rural areas of District - Jalaun, Uttar Pradesh. The utilization of these adsorbents can help mitigate fluoride contamination in groundwater, ensuring the provision of safe drinking water to the rural population. Further research and optimization efforts are needed to enhance the efficiency and scalability of these defluoridation techniques.

Implications of the study

The study on the physico-chemical characteristics and defluoridation of groundwater using low-cost adsorbents in rural areas of District - Jalaun, Uttar Pradesh, has several important implications:

Water Quality Assessment: The study provides a comprehensive assessment of the physico-chemical characteristics of groundwater in rural areas, specifically focusing on fluoride contamination. This information is crucial for understanding the extent of the problem and identifying areas with high fluoride levels, enabling targeted interventions and resource allocation.

Health Impact Mitigation: High fluoride concentrations in drinking water can have detrimental health effects, particularly on dental and skeletal health. By identifying effective defluoridation techniques using low-cost adsorbents, the study offers a practical solution for reducing the health risks associated with fluoride contamination in rural communities.

Sustainable and Affordable Water Treatment: The utilization of low-cost adsorbents for defluoridation addresses the challenge of affordability and accessibility of water treatment technologies in rural areas. These adsorbents are often locally available and cost-effective, making them suitable for implementation in resource-constrained communities.

Community Empowerment: Implementing low-cost defluoridation techniques can empower rural communities by providing them with the means to treat their own water sources. This reduces their reliance on external assistance and enhances their self-sufficiency in ensuring access to safe drinking water.

Environmental Impact: The study promotes sustainable water treatment practices by focusing on low-cost adsorbents that are environmentally friendly. These adsorbents, often derived from natural materials, have the potential to minimize environmental impacts compared to conventional treatment methods that may generate waste or chemical by-products.

Policy and Decision-Making: The findings of the study can inform policy-makers and decision-makers at the local, regional, and national levels about the prevalence of fluoride contamination in rural areas and the effectiveness of low-cost adsorbents for defluoridation. This can lead to the development of targeted policies, guidelines, and interventions to address the issue effectively.

Knowledge Advancement: The study contributes to the existing body of knowledge on defluoridation techniques and their application in rural areas. It adds to the scientific literature by evaluating the performance of low-cost adsorbents, providing valuable insights for future research, optimization, and innovation in the field of water treatment.

Recommendations for further research

Based on the findings and implications of the study, the following recommendations can be made for further research in the field of physico-chemical characteristics and defluoridation of groundwater using low-cost adsorbents in rural areas of District - Jalaun, Uttar Pradesh:

Performance Optimization: Further research can focus on optimizing the performance of low-cost adsorbents by exploring various parameters such as adsorbent dosage, contact time, pH, and temperature. Investigating the influence of these parameters on defluoridation efficiency can help identify the optimal conditions for maximum fluoride removal.

Adsorbent Modification: Research can be conducted to modify the low-cost adsorbents to enhance their fluoride adsorption capacity. This can involve surface modification, impregnation with specific ions, or combination with other materials to improve their adsorption properties and increase their efficiency in removing fluoride from groundwater.

Kinetic Studies: In-depth kinetic studies can be undertaken to understand the mechanisms of fluoride adsorption on low-cost adsorbents. This can involve studying the intraparticle diffusion, film diffusion, and pore diffusion processes to gain insights into the rate-limiting steps and the overall kinetics of adsorption.

Long-Term Performance and Regeneration: Investigating the long-term performance and regeneration potential of low-cost adsorbents is crucial to assess their viability and sustainability. Research can focus on studying the stability and reusability of the adsorbents over multiple cycles of adsorption and regeneration, along with the assessment of any potential deterioration in their performance.

Comparative Studies: Comparative studies can be conducted to evaluate the performance of low-cost adsorbents against conventional defluoridation methods. This can provide insights into the cost-effectiveness, efficiency, and practicality of the low-cost adsorbents in comparison to other treatment techniques, such as activated alumina, bone char, or ion exchange resins.

Field-Scale Implementation: Further research can explore the feasibility of implementing low-cost adsorbents for defluoridation at a larger scale in rural areas. Field trials and pilot studies can be conducted to assess the performance of the adsorbents under real-world conditions and to evaluate the practical challenges associated with their implementation, such as maintenance, scalability, and community acceptance.

Socio-economic Impacts: It is important to understand the socio-economic impacts of implementing low-cost defluoridation techniques in rural areas. Research can focus on assessing the acceptance, adoption, and affordability of these technologies by the local communities, as well as their potential impact on the overall socio-economic well-being of the communities.

Multi-contaminant Removal: Since groundwater in rural areas may be contaminated with multiple contaminants, further research can explore the potential of low-cost adsorbents for simultaneous removal of fluoride and other co-existing contaminants. Investigating the synergistic or competitive adsorption behaviour of these contaminants can help develop holistic water treatment approaches.

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The Chemistry of Yoga

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Abstract

Yoga has been practiced for thousands of years in India. Yoga was first used in ancient times to harmonize the mind, spirit & body. It helps to improve strength, flexibility,posture. It helps to balance the spiritual, physical and mental health. The word yoga comes from a Sanskrit word yuj which means to bind. Among the different types of yoga, the most common is asana, the physical practice. The two most important chemicals in yoga are gamma- aminobutyric acid or GABA and serotonin because they both reduce stress and anxiety. With regular practice, our overall mood will increase and we can handle stressful situations easier.

Key words: Yoga, Physiology of yoga, GABA, Serotonin, Mental health.

Introduction

The Sanskrit term “Yoga” which means to join, unite or yoke together, brings together the body, mind and spirit into a harmonious whole. Yoga as a whole involves the physical postures or Asanas, movement and breathing techniques called Pranayam and Meditation. It also guides a person for healthy life style,nutritious food,eating habits,mental and emotional behaviour which leads to the balance in one’s life. Hatah yoga is the path of physical yoga,which is the most popular branch of yoga in the west. HA means Sun &THA ,Moon, so the Hatha Yoga is the joining together of these different energies in harmonious equilibrium, positive, negative, active and receptive.

Origin of Yoga

The origin of yogas traced in northern India over 5000 years ago. The word Yoga was first mentioned in ancient sacred texts called the Rigveda.

ii.Role of Mantras in Yoga

Mantras are receptive sounds used to penetrate the depths of unconscious mind and adjust the vibration of all aspects of your being. In Yoga, mantras are chanted in Sanskrit & it is derived from man-‘to think’ &Tra- ‘to protect or to free from bondage or to free from mind’.

Introduction of Yoga in West

The introduction of Yoga in west is often credited to Swami Vivekananda(1863-1902), when he first came to United states of America in 1883 & was soon organizing world conference on the subject by describing Yoga as a science of the mind & translated Yoga texts from Sanskrit into English. In 1893, during his visit to the US he sparkled the country’s interest by demonstrating Yoga at 1893 Chicago World’s Fair.

Benefits of Yoga on Human Health

Yoga in regular practice can have benefits on our Physical & Mental health. To build strength, awareness and harmony in both the mind & body. Yoga is the best way to be made as a life style.

The relaxation Aasanas in Yoga reduce chronic pain,e.g lower back pain,arthritis, head aches & carpel tunnel syndrome. It also reduces blood pressure and insomnia. It increases flexibility in body, muscle strength & tone, improve respiration energy 7 vitality, maintain a balanced metabolism, reduces weight, improves cardio & circulatory health, athletic performance, protection from injury.

Besides all these physical benefits,there is a remarkable results in improving mental health due to stress which can reveal itself in the form of neck pain, sleeping problems, headaches, drug abuse and lack of concentration.

Yoga undoubtedly, is very effective in developing coping skills & to attain positivity in one’s life. Regular Yoga practice

1. Creates mental clarity and Calmness
2. Increases body awareness
3. Relieves chronic stress patterns
4. Relaxes the mind
5. Sharpens concentration[1]

Physiological Effects of Yoga

Yoga exercises are called Asanas. Doing Asanas results in the enhancement of brain wave coherence and improved functions such as memory and intelligence. It lowers the stress related harmones in the body, increases the amount of neurotransmitter Serotinin, in the body, which induces good mood & a sense of happiness and joy.[2]

Hatha Yoga Physiology

The area of biology which deals with the normal functions of living things, their organs or systems is called the Physiology. By referring physiology of Yoga, we talk about how Yoga practices affect the functioning of human body. Modern Science has found ways to measure physiological effects.

Common scientific measurements include familiar tests like heart rate & blood pressure.

Blood test may reveal the extent of stress by assessing the levels of dozens of hormones & chemical markers in the blood like Cortisol, Catecholamines, Glucose,Hba1c, Triglycerides, Cholesterol, Prolactin, Oxytocin, Dehydroepiandrosterone sulfate & interleukin -6 & 8.

Effects of Yoga on Nervous System

The nervous system is the body’s communication system, carrying messages that controls all the processes inside our body as well as the movements we consciously choose to make the part of the nervous system that manages our internal organs & involuntary functions is the autonomous nervous system (ANS), which is regulated by a part of

brain called Hypothalamus. It controls cardiac function respiration, digestion & other reflexes, including vomiting and sneezing.

Chemical Changes In The Autonomous Nervous System During Yoga (Neurochemicals)

Feeling of general well being and positive emotions during meditation and Yoga are likely mediated at least in part by the release and increase of mood stabilizing neuroharmones & neurotransmitters like Dopamine, Serotonin and Melatonin in limbic brain region.[3] and several important neurochemical changes in blood serum concentrations have been found to occur during meditation[4]

Influence of Yoga And Meditation on Neurochemicals That Are Critical To Maintain Good Mental Health:

1.GABA(gamma-aminobutyric acid, $C_4H_9NO_2$) is a naturally occurring amino acid that works as a neurotransmitter in your brain.Neurotransmitters function as chemical messengers. GABA is considered an inhibitory neurotransmitter because it blocks, or inhibit certain brain signals and decreases activity in your nervous system. When GABA attaches to a protein in our brain known as GABA receptor, it produces a calming effect. This helps with the feelings of anxiety, stress and fear. It also helps preventing development of seizersSome studies have revealed the use of GABA containing products for lowering blood pressure. A study from 2003 shows the reduced blood pressure as a result of fermented milk that contained GABA after 2-3 weeks.

A study from 2009,shows that upon taking GABA containing chlorella supplement twice a day, reduce blood pressure in those with border line hypertension.

2.Dopamine $C_8H_{11}NO_2$ is increased by meditation and yoga which increase the endogenous release of neurotransmitter dopamine during altered consciousness, which decreased the meditators desire for action and executive control,heightened their sensory awareness and increased their ability to detach themselves from the past or future [5]

Researchers found that meditation decreased binding of a radioactive tracer that competes with endogenous dopamine in the ventral stratum, thus resulting in roughly a 65% increase in dopamine release in limbic or emotional brain regions, resulting in the increase in sense of joy. [6]

3. Arginine Vasopressin (AVP,$C_{46}H_{65}N_{15}O_{12}S_2$) has been shown to increase dramatically (2.6 to 7.1 times normal plasma levels, during meditation)[7]

AVP has been found to contribute to arousal,maintaining positive emotion[8], selfie perceived fatigue & significantly improving consolidation of new memories & learning[9]

4. Acetyl Choline ($C_7H_{16}NO_2$) is the primary neurotransmitter found at ANS synapses and is known to heavily influence parasympathetic nervous system dominance as is found in states of consciousness such as meditation. In some studies, increased acetylcholine in the frontal lobes during meditation has been shown to enhance attention and in the parietal lobes, it tends to enhance orienting ability without altering sensory input.[10]

5. Epinephrine (Adrenaline, $C_9H_{13}NO_3$)

Epinephrine is a both a neurotransmitter (acting in the brain) and a stress hormone (acting on other sites, such as the heart or glands). It stimulates our sympathetic nervous systems to produce fight-or-flight responses, such as increased heart rate, increased blood glucose, and increased blood flow to muscles.

Studies have found reduced epinephrine levels during meditation, which reflects, in part, the systemic change in autonomic balance brought about by meditation[11] During meditation, the hypothalamus may inhibit the adrenaline output of the adrenal medulla, which decreases anxiety. Decreased adrenaline, coupled with the deep relaxation state experienced during meditation, allows the hypothalamus bring about tranquillity [12]

The hypothalamus links the nervous system to the endocrine system, our hormone-producing system.

7. Serotonin (5-HT,$C_{10}H_{12}N_2O$)

Serotonin, a feel-good neurotransmitter, is the primary neurotransmitter, mostly found in digestive tract, to influence mood. Serotonin also plays a role in sleep cycles, circadian rhythm, appetite, pain, aggression, sexual behavior, information processing and autonomic processes such as blood pressure, body temperature and endocrine system function. Low amounts can lead to depression, anxiety, panic attacks, execessive anger and OCD.

The interaction between serotonin synthesis and mood may be a two-way street. One study found that self-induced changes in mood can influence serotonin synthesis. In other words, serotonin influenced mood and mood influenced serotonin synthesis. [13]

8. Norepinephrine (Noradrenaline, $C_8H_{11}NO_3$)

Norepinephrine is a stress hormone that causes the heart rate to increase, stored glucose (simple sugar) to be released, and increased blood flow to the muscles. Norepinephrine plays a major part in helping us escape danger, but also in creating or exacerbating anxiety. The effects from prolonged or too-frequent exposure to norepinephrine are very similar to the effects of cortisol. Increased heart rate can cause high blood pressure, and the stored glucose (simple sugar) that's released can also cause diabetes. Back and body muscle pain can occur due to muscle tension caused by this hormone.

During meditation, activation of the right amygdala results in stimulation of the hypothalamus, with subsequent stimulation of the parasympathetic system, which is associated with a sense of relaxation and profound quiescence.

Respiration and heart rates decrease, which in turn, reduces the activity of areas of the brain that produce norepinephrine. Decreased norepinephrine ultimately decreases stimulation of the hypothalamus, decreasing the stress-related production of ACTH, and cortisol [14]

Conclusion

The purpose of Yoga is to create harmony in the physical, vital, mental, psychological andspiritual aspects of the human being. Yogis have known for centuries that a yoga practice makes us feel calm and centered. Yoga changes our brain chemistry, which in turn improves our mood and decrease anxiety.

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A Scientific Overview onImpact of Cigarette Smoking On Indoor Air Environment and On COVID-19

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The globe was completely thrown upside down by the virus, and researchers are making continuous efforts to search out an effective drug or treatment. The virus is highly infectious, and it has been an intensive task to prevent its spread from one person to another. Avoiding close contacts, social distancing, isolating infected ones, wearing masks, and hand washing are the major tools to combat COVID-19 worldwide. The coronavirus disease (COVID-19) pandemic has continued to be a major health crisis and is very likely to become endemic in the future. Beyond virus transmission, the severity and mortality of COVID-19 are top public health concerns. Smoking can deteriorate a

person's health and increase COVID-19 symptoms. During the COVID pandemic, the mass population stayed at home, which could have been stressful for them, and for this reason, they frequently used cigarettes and other tobacco products. The factors that compromise lung functions and may prepare the ground for a severe COVID-19 infection are interestingly looked into. The focus was more on air pollution and cigarette smoke. (VijaythaVijayakumar et al. 2021) stated that as many policies are implemented worldwide to protect against SARS-CoV-2, one simple remedy that we forgot was that clean air can save lives. SARS-CoV-2 infects our lungs, and air pollution makes us more susceptible. Tobacco use increases the risk of numerous diseases, including respiratory illnesses. The majority of these studies (17/32) found that tobacco use increased risk, one found decreased risk, and 14 found no association. Tobacco use was associated with an increased risk of hospitalisation in 7 of 10 studies, ICU admission in 6 of 9 studies, mechanical ventilation in 2 of 6 studies, and illness severity in 3 of 9 studies (https://www.hindawi.com/journals/josc/2022/5474397/). One study found that tobacco use history increased the risk of pulmonary embolism in COVID-19 patients. Tobacco use was found to compound risks associated with diabetes, cancer, and chronic liver disease. Cigarette smoke induces epigenetic modifications of the bronchial epithelium, leading to mucous (goblet) cell metaplasia. As goblet cells are a major source of ACE2 in the lung, this could, in part, justify the increased levels of ACE2 found by Cai and colleagues in the lungs of smokers. However, goblet cells are also the main source of mucous, which provides an essential first host barrier to inhaled pathogens that can prevent pathogen invasion and subsequent infection (Polverino, F. 2020). Additional factors could play a role in the interaction between active smoking and SARS-CoV-2. (Zhanghua Chen et al. 2022) Ecological studies have shown that long-term air pollution exposure, particularly particulate matter 2.5 or equal to 2.5 in aerodynamic diameter (PM2.5) and NO2, is associated with an increased risk of coronavirus disease (COVID-19) incidence and mortality. The researchers found that more of the genes that respond to infection were turned on in infected cells compared with healthy cells. However, the effect on the cells of SARS-CoV-2 was different in people with severe and mild infections. Polluted areas, including air-polluted areas, were found to be infected with more severe cases of COVID-19. Similar reports from different parts of the world also correlated air pollution with COVID-19 severity and mortality. Recent research from North America, Asia, and Europe suggests that air pollution may affect the incidence, prognosis, and mortality of COVID-19 (Jerrett et al., 2023, Brandt et al., 2020,Li et al., 2020,Wu et al., 2020,Zhang et al.,2020,Zhu et al., 2020,Lippi et al., 2019,Coker et al., 2020,Wang et al.,2020,

Travaglio et al., 2021,Yao et al., 2021,Huang et al., 2021,Chen et al., 2021,Berg et al., 2021,Zhou et al., 2021). Particulate matter could be one of the most likely mediums for the transport of SARSCoV-2 from one source to another. Cigarette smoke contains harmful and potentially harmful constituents (HPHC) like carcinogens, mutagens, cytotoxic agents, etc. Reports on the effect of smoking on a person's susceptibility to infections conclude that smokers are highly susceptible to getting infected. In the present world of COVID-19, are there any implications related to air pollution? It has to be proven. On World Earth Day 2023, we are still demanding the same "clean air." As many policies are implemented worldwide to protect against SARS-CoV-2, one simple remedy that we forgot was that clean air can save lives. SARS-CoV-2 infects our lungs, and air pollution makes us more susceptible. To conclude, what is unchallengeable is that cigarette smoke is detrimental for the lungs in several ways, and further studies are needed to clarify the reasons behind the reported low prevalence of current smokers among hospitalised patients with COVID-19. The effect of current smoking on SARS-CoV-2 infection is a delicate and complex topic that should be addressed meticulously before delivering messages that could be misinterpreted. (Zhanghua Chen et al. 2022) concluded that 1-year PM2.5 exposure and 1month NO2 exposure before COVID-19 diagnosis were significantly associated with COVID-19 severity, including hospitalisations, the need for IRS, ICU admission, and mortality (https://www.medicalnewstoday.com/articles/long-term-exposure-to-air-pollution-linkedtomore-severe-covid-19#Air-pollution-and-COVID-19). Given that ambient air pollutants are modifiable through public health regulations and individual interventions, the results support public health and individual efforts to reduce air pollution exposure. Ambient PM2.5 and NO_2 exposures may affect COVID-19 severity and mortality. Other strategies for reducing the severity of COVID-19 infection are crucial given the difficulties in preventing COVID-19 and potential new viruses for public health. By limiting the impact of future new viruses, lowering air pollution may offer yet another practical way to lessen the severity of the ongoing pandemic.

(https://www.healtheffects.org/research/ongoing-research/ambient-air-pollution-andcovid19-california).

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Bio Adsorption Of Pb (Ii) Heavy Metal By Bio Adsorbent Peanut Husk With Ag Nano@ Schiff Base

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Abstract

The Schiff base named N-(4-hydroxy-3-methoxybenzylidine)-biphenyl-4- amine is prepared from condensation of equimolar (1:1) quantity of vanillin and biphenyl-4-amine in alcoholic medium. The prepared Schiff base was characterized by elemental analysis, FTIR (Fourier-transform infrared spectroscopy), UV-VIS (ultra violet visible spectroscopy), NMR (nuclear magnetic resonance spectroscopy), mass spectral and elemental analysis studies. Silver Nanoparticles were synthesized by chemical reduction method. Then complexation of silver nanoparticles with Schiff base was done. The structure of Ag nano@ Schiff base is determined by UV-VIS spectra, FTIR and mass spectra. Analysis of (Pb II) metal ion was done by AAS (Atomic absorption spectroscopy). Peanut husk was used as solid phase for the extraction of heavy metal Pb (II) from industrial effluents. The effects of several parameters that affect the adsorption of Cu (II) metal ion including initial metal ion concentration, contact time, Schiff base weight and pH were analyzed.

Keywords: Heavy Metal, Extraction, Nanoparticles, Ag Nano@Schiff Base, Adsorption, Parameters.

Introduction

The increasing level of heavy metals in water represents a serious concern to human health and ecological system. Heavy metals are among the most important factors that have polluted the environment.[1] In the past decades, many hazards (such as health hazards, contamination of the aquatic ecosystem, foods, fertilizers, drinking water, soil, etc.) of several heavy metal ions such as lead, cadmium, nickel, chromium, copper, and zinc have been discovered.[2,3] These metals have been extensively studied and their effects on human health have been regularly reviewed by international bodies such as the World Health Organization (WHO). The WHO estimates that more than “25 percent of total burden of disease is linked to environmental factors including exposure to toxic chemicals.”[4] Toxic effect in human body is pronounced due to bio magnifications and accumulation of heavy metal ion through food chain. In spite of strict regulations restricting their careless disposal, these metal cations may still emerge in a variety of electrical apparatus, painting and coating, extractive metallurgy, fertilizer, mining, battery industries, etc.[5–7]

Adsorption processes have been reported to be low-cost alternatives for the treatment of heavy metals present in waste water. So, the development of new adsorbents with improved adsorption characteristics remains as a significant research objective for the environmental pollution control processes.Schiff bases were easily prepared by condensation between aldehydes and amines and are known as very efficient chelating agent for many different metals[8]. Schiff bases have been studied extensively due to its azomethine nitrogen which form coordination bond with metal. Schiff base shows antibacterial,[9] antifungal,[10] anticancer,[11] and diuretic activities[12]due to azomethine nitrogen.[13] Heavy metal adsorption on conventional adsorbents such as activated carbon is widely used in many applications as an effective adsorbent, and activated carbon produced from carbonization of organic matter is the most widely used adsorbent. However, the high cost of the activation process limits its use in wastewater treatment applications [14]. The use of peanut shell charcoal for Cu (II) adsorption from wastewater was studied by Periasamy and Namasivayam [15].In the present work, the Schiff base named N-(4-hydroxy-3-methoxybenzylidine)-biphenyl-4-amine is prepared from condensation of equimolar (1:1) quantity of vanillin and biphenyl-4-amine in alcoholic medium. The prepared Schiff base was characterized by elemental analysis, FTIR (Fourier-transform infrared spectroscopy), UV–vis (ultraviolet visible spectroscopy), NMR (nuclear magnetic resonance spectroscopy), mass spectral and elemental analysis studies. Silver nanoparticles were synthesized by chemical reduction method. Silver nitrate is used as a metal precursor and sodium borohydride as a reducing agent. Then complexation of silver nanoparticles with Schiff base was done. The structure of Ag nano@Schiff base is determined by UV–vis spectra, FTIR, and mass spectra. Analysis of Pb (II) metal ion was done by AAS (atomic absorption spectroscopy).

Material And Methods

Vanillin, biphenyl-4-amine, and sodium borohydride were purchased from Central Drug House (CDH) chemical company. Silver nitrate, sodium citrate, acetic acid, and methanol were purchased from sigma Aldrich chemical company. All the solvents were distilled, dried, and purified by standard procedures.

Synthesis of Schiff base

A solution of vanillin in methanol was mixed with solution of biphenyl-4-amine. Mixture is stirred and thereafter refluxed for 2–3 h, the precipitate collected by filtration and recrystallized from alcohol. Table 1 shows the physical properties of Schiff base.

Synthesis of silver nanoparticle

Fixed volume of silver nitrate solution was added drop wise to ice chilled sodium borohydride solution. The reaction mixture was stirred vigorously on magnetic stirrer. The entire addition took about 3–4 min, after which the stirring was stopped and the stir bar removed. The colloidal solution of nanoparticles was formed.

Synthesis of Ag nano@Schiff base

Synthesis of the silver nanocomplex was done by anchoring the ligand as prepared above on the synthesized silver nanoparticles.The Schiff base was successively added to the silver nano-colloidal solution in and stirred for 10–15 min.

Preparation of adsorbent

Peanut husks were collected from the local market, washed thoroughly to remove dust using distilled water, dried in an oven at 100 °C for 18 h, ground using a laboratory mill, sieved to 0.5–0.8 mm, and rinsed using 0.1 N HCl. Then the pH was adjusted with 0.1 N HCl at values (6–7). Finally, PHC was dried and stored in an oven at 80 °C till it reached constant density and humidity .

Methodology

Batch adsorption experiments were carried out by shaking a series of bottles containing various amounts of the adsorbents used and heavy metal ions separately at optimum pH. For the investigation of solution temperature, contact time, adsorbent dosage, and pH batch studies were carried out. Designated adsorbents were added into 150 ml conical flask with a stopper, containing 100 ml of test solution and then carried out the batch adsorption at the desired contact time, pH and adsorbent dose.

Results and discussion

Characterization of Schiff base

UV–vis spectral studies

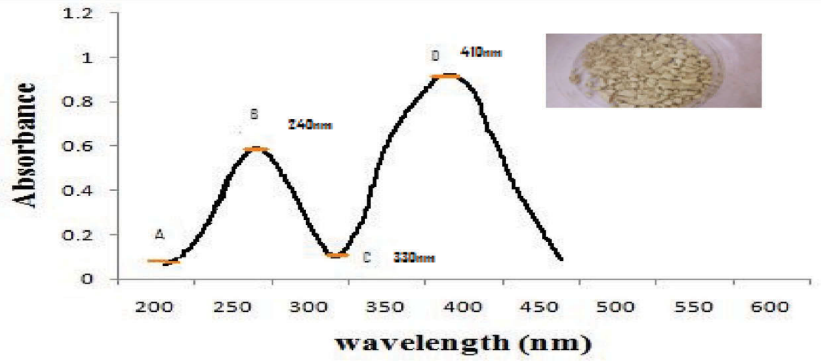

Figure 1. UV–vis spectra of Schiff base.

In Fig. 1, four bands are showed in ethanol medium.Band A and B at 200 nm and at 240 nm wavelength, respectively, due to transition in aromatic ring. Band B and C appeared at 330 nm wavelength due to transition in between Π orbital localized on central azomethine (–CH=N–) bond. Band D appeared at 410 nm wavelength and is based on strong intramolecular H-bonding between the hydroxyl group of the vanillin and the azomethine nitrogen.

FTIR studies

Figure 2 summarizes the v (C=N) absorption band at 1697 cm−1. The bands at 3742, 3202, and 2947 cm−1 are attributed to the –OH, C–H aromatic, and C–H aliphatic, respectively. The presence of the benzene ring conjugated to imines group in the Schiff base was noticed at 1551 cm−1.

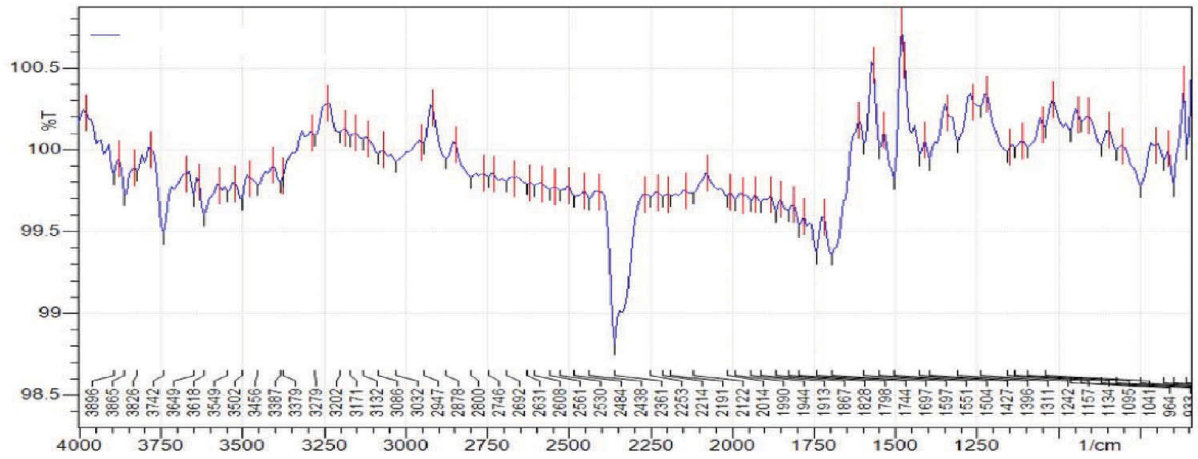

Figure 2. FTIR spectra of Schiff base.

^{1}H NMR studies

1H NMR data in Fig. 3 show the singlet for OH,δ = 9.82 ppm, singlet for (–CH=N–). The other singlet assigns within the region δ = 6.92–7.42 ppm due to aromaticity of the ring; δ = 3.95 ppm shows the singlet due to (–OCH3) group.

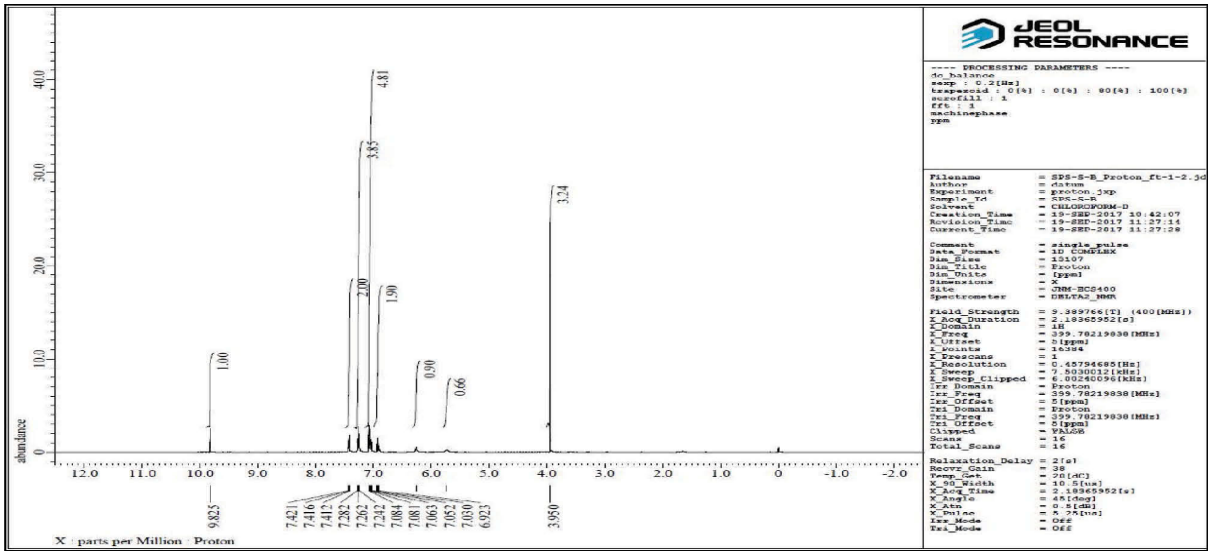

Figure 3. ^{1}H NMR spectra of Schiff base.

Mass spectral studies

Mass spectrum of m/z (%) is shown in Fig. 4.

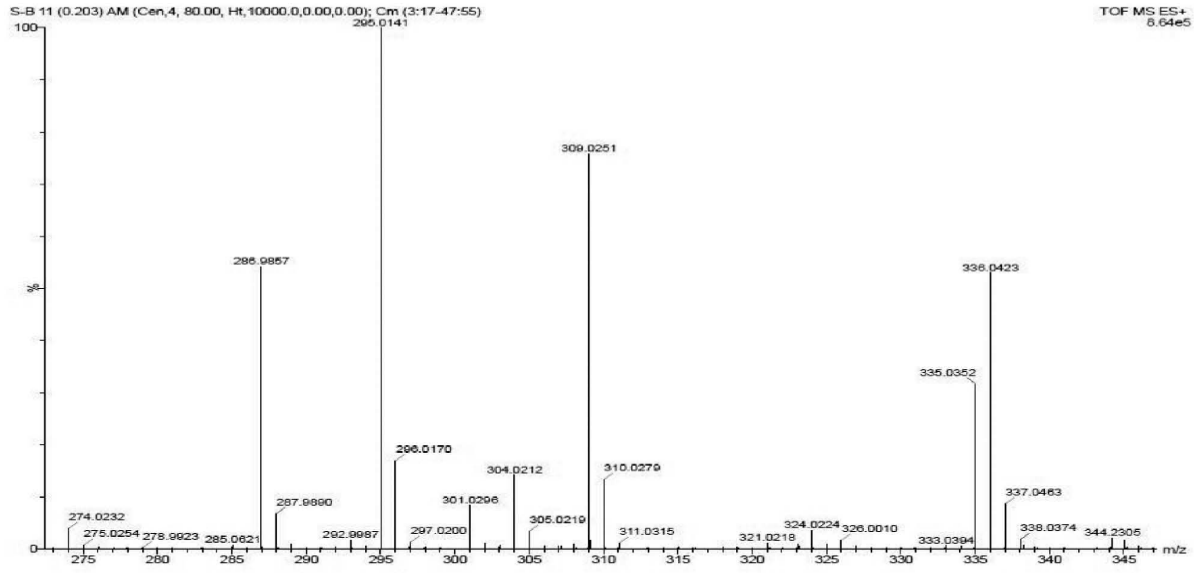

Figure 4. Mass Spectrum of Schiff base.

The mass spectrum of Schiff base showed a peak recorded
at m/z 305.02 due to M+ + 1. This on loss of hydrogen radical gave a peak at m/z 304.02 which is equivalent to molecular weight. A base peak recorded at 295.01 (100). Loss of –OH from base peak (M-17) at 278.99 indicates the keto–enol tautomerism in Schiff base.

Extraction of heavy metal Pb (II)

Silver nanocomplex of Schiff base is attached in solid phase by previously reported method. The metal ions are extracted from industrial water samples by continuous adsorption method. Column method is used for determining the effect of various parameters on the percentage removal of Cu(II) metal ion from industrial effluents.

Effect of pH

The pH was varied from 2 to 10 for Pb (II) and the pH of the solutions was adjusted to different values using suitable buffers. The removal efficiency was calculated at constant Schiff base weight, biomass and concentration of the metal ion. The maximum absorption takes place at pH 2 for Pb (II) in water sample. A figure 5 shows the uptake of Pb (II) which is depends greatly on pH .The metal ions are nearly stable at pH 2 in Pb (II) respectively due to stability of complexation of the metal ion with silver coated Schiff base.

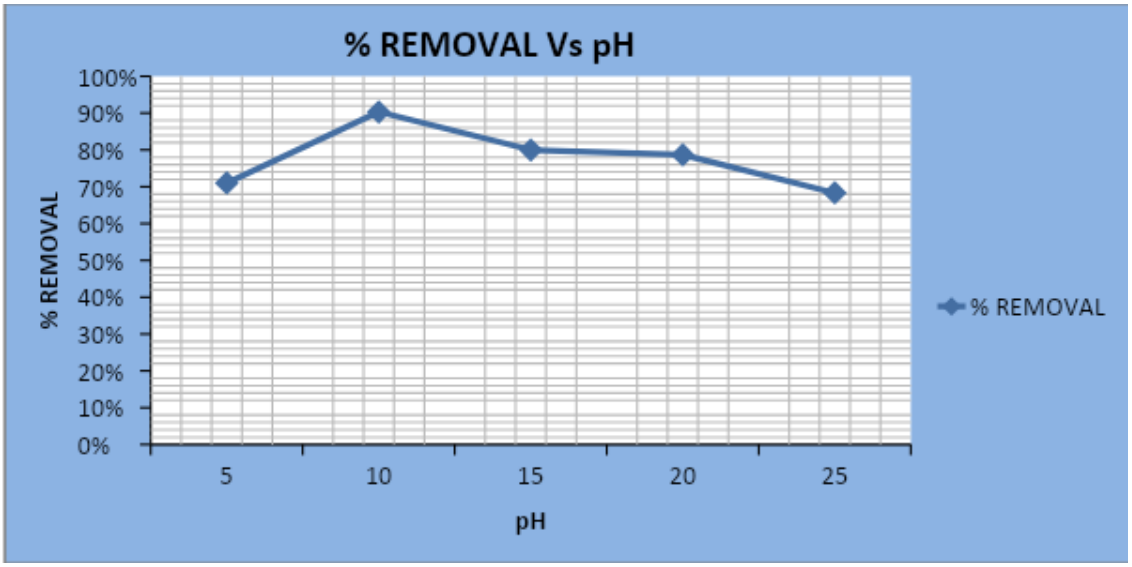

Figure 5. Graphical representation of effect of pH on % removal.

Effect of Initial Concentration of Metal Ion

Effect of initial metal ion concentration on the percentage removal of Pb (II) metal ion by Ag nano@ Schiff base from industrial effluent was investigated. Effect of metal ion concentration is calculated at constant pH, biomass and weight of silver nanoparticle trapped with Schiff base. Maximum percentage removal of heavy metal takes place at concentration 10 ppm of Pb (II) in industrial waste water sample. As concentration of metal ion increases in water sample the percentage removal of Pb (II) increases due to increasing of binding site and at specific concentration of metal ion all the binding sites becomes saturated but after reaching at saturation point as the concentration increases percentage removal decreases as in figure 6.

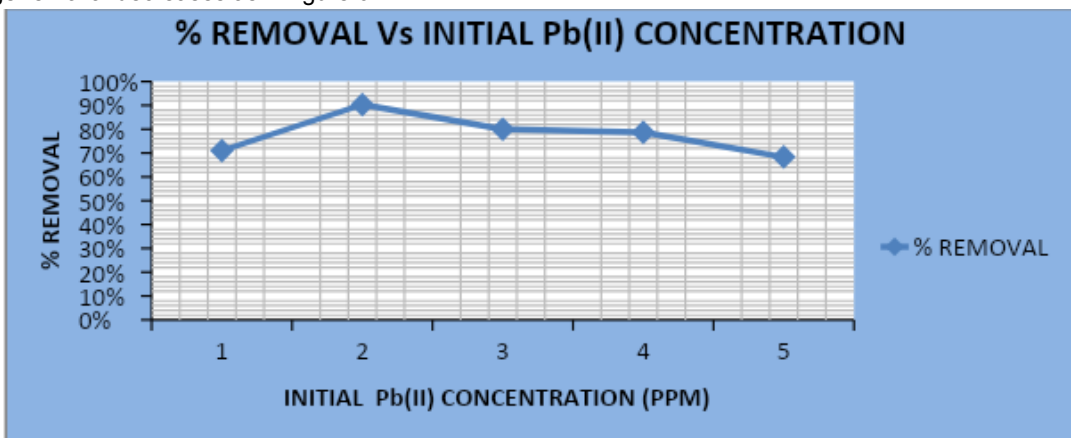

Figure 6. Graphical Representation of Effect of Initial Concentration on % Removal.

Effect of Contact Time

The effect of contact time on the percentage removal of Pb (II) metal ion by Ag nano@ Schiff base from industrial effluent was investigated .Effect of contact time is calculated at constant pH, biomass, and weight of silver nano complex of Schiff base and constant initial metal ion concentration. Figure 7 shows maximum percentage removal of heavy metal in 15 minutes. Adsorption rate initially increased rapidly, and the optimal removal efficiency was reached within about 15 min. Further increase in contact time did not show the significant change in equilibrium concentration; that is, the adsorption phase reached equilibrium**.**

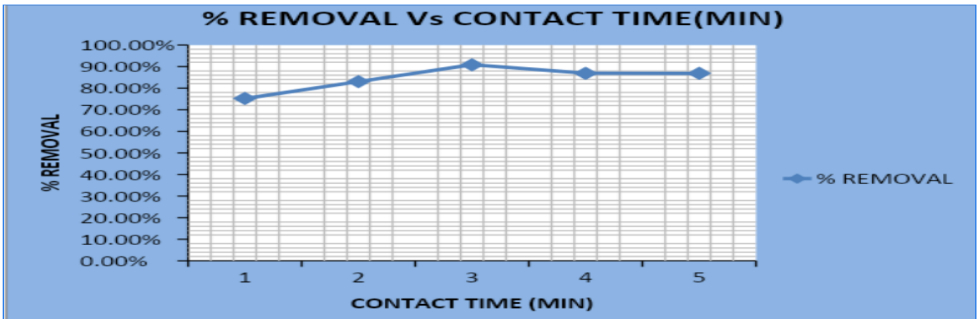

Figure 7. Graphical Representation of Effect of Contact Time on % Removal.

Conclusion

The silver nanoparticle trapped with Schiff base and attached with solid phase have the high surface area in low volume is effectively and rapidly removed Pb (II) metal ion.. The graph of initial metal ion concentration versus the percentage removal concluded effective percentage removal of Pb (II) 68% to up to 91% as concentration of heavy metal increases 5 ppm to 25 ppm. The graph of pH versus the percentage removal of Pb (II) ion concluded that maximum percentage removal of Pb (II) takes place at pH 2. The graph of weight of Schiff bases versus the percentage removal of Pb (II) ion concluded that maximum percentage removal of Pb (II) takes place at 5 mg weights of Schiff base. The graph of contact time versus the percentage removal of heavy metal ion concluded that maximum percentage removal of Pb (II) takes place at 15 minutes So, From all graphs and tables it is concluded that silver nanoparticle trapped with Schiff base and attached with bioadsorbent is new, rapid and cost effective approach for removal of heavy metal ion from industrial effluents

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Humanistic Approach of Rabindranath Tagores' Spiritualism

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Abstract

Rabindranath Tagore is a man of humanistic approach. He was influenced by humanistic approach of Greek philosophy. His spiritual outlook is full of humanistic approach. The wide reputation of Tagore's religious verses in Geetanjali awarded him the Nobel Prize. People believe that he was essentially a writer of spirituality and mysticism, and not of men of the earth. He believes the elevation of common man. According to him God loves common men. He does not believe in enchanting of mantras and putting on holy cloth and moving lips in a sacred place. Tagore does not believe in traditional approach of religion and salvation. It does not mean that he is ascetic. He believes the union of common man, is the union of infinite power. He says that to serve God is to serve men in every aspect of common man. God exists in where the tiller is tilling the hard ground and path maker is breaking stones. Tagore says that my God is nowhere outside humanity. Spiritual freedom ,according to Tagore , is the freedom of sprit. It is above narrow self. Tagore says that there is no other heaven than Earth.

keywords : spiritualism,humanism common man,

Universal Approach to Humanism

There are many factors that deal with personality and the ideals of humanism. The philosophy of humanism is developed by the center of common man.He deals with the theme of universality. The centre of his philosophy of humanism is common man.It is said that humanism came from Europe. He was influenced by European humanism. Humanism already exists in the east. He believes in mental and spiritual freedom of men. The World believes in the superiority of man over other aspects of creation. Man is not a tool in the hand of physical forces. He has the power to change the matter of his behaviour. His response is evolution its course with the evolution of man and it goes beyond the mechanical and the physical level enters into spiritual level. This change is because of peculiarity with which man appears on the earth. There are two essential aspects of his nature- finite and infinite. The physical and spiritual physical are determinable in terms of philosophy.

Religion and Humanism

Rabindranath Tagore's family's outlook on religion and life was influenced by the Upanishads and Tagore's religion Is based on the religion of men. For Tagore religion is a very simple gift of God. Human being has made this religion quite complex. He calls humanism the religion of man. Religion does not mean God and power. The function of religion is to bring a common man into the circle of love and the supreme human being .God is also a personal being like men. He thinks that man is above all a lover. He likes freedom and love. love is actually what makes him perfect. He relates to human being for particularly humanity. there is a spiritual bond between the personal and the universal world. According to him human civilization cannot be understood through our loving concern for mankind. According to R N Tagore his religion is life. It is growing with the growth of men. It has never been grafted from outside "Temples and mosque obstruct thy path / He failed to hear thy call /When the teachers and priests Angrily crowd around me the Idea of freedom to which India is inspired ,reached upon the spiritual unity." India's great freedom inspired him with many ways. It was in the deep heart of Tagore . He Said Patriotism cannot be our final Shelter. spiritual shelter I Choose is my refuge to humanity. He said "I will not buy glass of water for the price of diamond. He will not allow patriotism triumph over humanity .

Humanism and Service of Mankind

It is said in Upanishad ' The One is infinite and The one is love'. Tagore does not believe narrow and conventional way of religion. According to him religion gives freedom. He believes in international peace and brotherhood. Concept of Tagore's humanism is in the service of mankind. He wants to touch the common man sitting in the last corner of The world. Man is above all a lover of mankind. His fulfilment is in Love**.** The sprit of love unites all the living beings to the world. Tagore's idea of internationalism is not about global governance dismantling of all nation states and surrendering national sovereignty to a global authority. His philosophy of internationalism centres around cooperation, understanding, mutual respect and pursuit of unity of mankind turns from a religious to a patriotic theme.

Patriotic View of Tagore

Tagore prays for the freedom of the country and that too an ideal freedom. He prays that his country becomes a place where a man can go with his mind, free of any fear and where he can hold his head high with self-respect and dignity. 'We gain freedom when we have paid the full price', Said by Tagore He also added the equally severe admonishment that one should never "gloat upon the feebleness of its neighbours." For Tagore, importantly enough, the idea of India was a moral project that needed to engage with its own deep and troubled history of "social adjustment Transcendence of the self can be realised through the search for knowledge, through creative work, and through love.

Wealth and Religion

In Religion of Man, Tagore wrote that “the largest wealth of the human soul has been produced through sympathy and cooperation; through disinterested pursuit of knowledge (…); through service.”[28] This is Tagore’s reformulation of the “paths” (marga) to salvation proposed in the Bhagavad-Gita: jnana (knowledge/insight), karman (action, esp. sacrifice), and bhakti (devotion).For these three principles, Tagore also used the Indian terms santam sivam advaitam, which he translated as “the perfect repose in truth, (…) the perfect activity in goodness, and (…) the perfect union in love

Therefore, human love promoting the welfare of mankind is the best expression of one's gratitude towards God, The service of man is service of God. The worship of universe will be meaningless if it will not embody in itself the service for man, according to Tagore. For achieving God it is not necessary for any person to leave his family or society, But his 'bonds with mankind' will pull him towards God. The poet lays emphasis on the individual's relation to society, his unending debt to the collective culture of mankind and his corresponding obligation to serve the common goo

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Literary Reflections: *Understanding Human Dependence on Nature and Environmental Concerns in Anita Desai's The Village by the Sea*

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Abstract

Literature has a long tradition of depicting the relationship between humans and the environment. In recent years, there has been a growing interest in environmental themes in Indian novels as writers grapple with the country's ecological challenges. Anita Desai's *The Village by the Sea* depicts the intricate and multifaceted relationship between the environment and literature. The novel poignantly portrays a poor fishing community living on the coast of India, struggling to survive in a rapidly changing world. The novel depicts the villagers' struggle for survival in the face of ecological degradation, poverty, and exploitation and also it highlights the interdependence of nature and society and the consequences of ecological imbalance caused by human activities, such as overfishing, pollution, and deforestation, and its impact on the villagers' daily lives. This paper analyzes the environmental concerns in the novel and how they reflect the challenges and struggles faced by coastal communities in India. The paper focuses on the need for a holistic approach to environmental conservation and sustainable development practices considering people's lives' ecological, social, and cultural aspects. The paper also attempts to examine the role of literature in raising environmental concerns in society.

Keywords: Environment, Overfishing, Pollution, Deforestation, Ecological Balance, Sustainability, Ecosystem, Holistic approach,

Introduction

The relationship between the environment and literature is intricate and multifaceted. Literature can reflect, critique, and shape our perceptions and attitudes towards the environment. At the same time, the environment serves as a source of inspiration and subject matter for writers, poets, and other artists. Environmental literature, also known as eco-literature or nature writing, is a genre of literature that explores the relationship between humans and nature. This literature often focuses on environmental degradation, climate change, and biodiversity loss. Natural landscapes and phenomena can be used as metaphors, symbols, and themes in literature and can be portrayed differently depending on the writer's perspective and purpose. The relationship between literature and the environment constantly evolves and changes, reflecting the complexities of our relationship with the natural world.

The notable works of environmental literature include poems, stories and novels. Henry David Thoreau's 'Walden', Rachel Carson's 'Silent Spring', and Edward Abbey's 'Desert Solitaire', Dr. Seuss's 'The Lorax', are famous fictional works. Many recent novels also address environmental concerns, like 'The Overstory by Richard Powers (2018), 'The Living Sea of Waking Dreams' by Richard Flanagan (2020), 'Bewilderment' by Richard Powers (2021) 'The Natural Mother of the Child' by Krys Malcolm Belc (2021) 'The Great Circle' by Maggie Shipstead (2021).

Indian Novels and Environmental Concerns

Indian literature also has a long tradition of depicting the relationship between humans and the environment. In recent years, there has been a growing interest in environmental themes in Indian novels as writers grapple with the country's ecological challenges. One of the most prominent Indian writers to explore environmental themes is Amitav Ghosh's 'The Hungry Tide'(2004), set in the Sundarbans, a vast delta region in India and Bangladesh. The novel explores the region's ecological challenges, including climate change and rising sea levels, as well as the impact of human activity on the fragile ecosystem. Another notable example is Arundhati Roy. She portrays the impact of the displacement of communities due to the construction of large dams and the resulting destruction of forests and habitats. In her novel, 'The Ministry of Utmost Happiness'(2017). Other Indian writers have also tackled environmental themes in their work, including Anita Desai's 'The Village by the Sea'(1982), which examines the impact of pollution on the environment and the lives of coastal communities. In addition to these novels, many works of Indian literature use nature and the environment as central themes or metaphors. Ruskin Bond's stories ' Leopard' and 'Dust on the Mountains' depict how deforestation destroys humans and wildlife.

Similarly, Mahasweta Devi's 'Breast Stories' portrays the link between industrialisation and pollution and its impact on women's health in rural communities. The poetry of Rabindranath Tagore frequently references the natural world, and his play 'The Post Office uses a forest as a setting for a meditation on life and death. Overall, Indian literature has a rich tradition of exploring the relationship between humans and the environment and continues to be an important voice in discussions of environmental issues in the country and beyond. Several recent Indian novels address environmental concerns. Here are a few examples: "The Adivasi Will Not Dance" by Hansda Sowvendra Shekhar (2017),."The Far Field" by Madhuri Vijay (2019), "The City and the Sea" by Raj Kamal Jha (2020), "The Rat Eater" by Anand Pandian (2020)"The Scent of God" by Saikat Majumdar (2021). There are many other works of Indian literature that explore the complex relationship between humans and the natural world, reflecting the urgent need to address the environmental challenges facing the country and the world.

The Theme of The Village by the Sea

The Village by the Sea is a novel by Indian author Anita Desai. The novel tells the story of two siblings, 13-year-old Lila and 12-year-old Hari, who live in the fishing village of Thul on the west coast of India. The novel portrays the difficult living conditions in Thul, where the villagers are poor and struggle to make a living from fishing. Lila and Hari's father is an alcoholic who cannot provide for the family, and their mother is sick and unable to work. The children are forced to take on adult responsibilities, with Hari working as a fisherman and Lila taking care of the household. The villagers of Thul are deeply connected to their traditional way of life, but they are also aware of the changes happening in the world around them. The novel also explores the tension between tradition and modernity. Hari, in particular, is fascinated by the possibilities of modern technology and how it could improve the lives of the villagers. The novel suggests a delicate balance between tradition and modernity, and both have a role to play in shaping the village's future.

The Village by the Sea is a powerful portrayal of life in a rural Indian community and the struggles of its inhabitants. This novel portrays the impact of large dams and other development projects on the environment and the lives of communities displaced by such projects. This novel is set in a coastal village in India and addresses environmental issues such as pollution and the impact of modernisation on traditional ways of life. Biju (Afisherman) and a stranger's discussion in the novel highlights the ongoing debate of technological development versus nature:

> The government has chosen this place as the right one for its factories, and factories will be built. "Why here?" Biju challenged him. "Go build your factories where the land is barren and nothing grows but stones and thorns…"Why should we sell our good farmland for factories?" 'You will have to sell it is the place the government has chosen." 'How can the government choose without asking us?" "Who will ask you, old man?" said the stranger... It is close to Bombay - only fourteen Kilometres away They can lay a railway line here easily. The road already exists and only needs to be widened Transport is good. It is near the sea, and the wastes can be pumped into it (Desai 92).

Desai also highlights that government policies for development disturb indigenous people's peaceful lives and are a menace to nature. Though factories provide employability to the villagers, at the same time, they are a threat to natives' age-old occupations like fishing and farming.

The Life of Villagers in *The Village By The Sea:*

The village is located on the west coast of India, and the novel vividly describes the sights and sounds of the sea, the sky, and the beach. The villagers' lives are intimately connected to the natural environment, as they rely on the sea for their livelihoods and must contend with the challenges of living in a coastal area prone to storms and flooding. The novel also highlights the impact of human activity on the natural world. The villagers engage in overfishing and other unsustainable practices that threaten the marine ecosystem and the fish populations they depend on. The novel portrays the consequences of this environmental degradation, as the fishermen struggle to make a living, and the children must walk further and further to collect firewood for cooking. In addition to depicting the natural environment, the novel also explores how environmental factors shape human society. The novel suggests that poverty and lack of access to education are inextricably linked to the villagers' physical environment and the challenges of living in a coastal area.

Relation of Environment and Human Beings

The novel emphasises the interdependence of nature and society and the consequences of their neglect. Neglecting the environment not only harms nature but also harms society. The novel portrays how the villagers' poverty and exploitation are rooted in the ecological imbalance caused by human activities. The novel analyses the relationship between the villagers and their environment, the effects of industrialisation and urbanisation on the ecology of the village, and the impact of pollution on the villagers' health. The novel highlights the importance of balancing human activities and the environment and the consequences of ignoring this balance. The novel also emphasises the need for collective action to address environmental concerns in coastal villages. The novel sheds light on the ecological challenges coastal villages face and the urgent need for sustainable development practices to address these challenges. The novel is a poignant portrayal of a poor fishing community living on the coast of India, struggling to survive in a rapidly changing world. The ecological imbalance caused by human activities such as overfishing, pollution, and deforestation impacts the villagers' daily lives. It also explores the role of government and other organisations regarding environmental concerns in the village and the villagers' response to such efforts. The novel critiques the colonial and capitalist exploitation of natural resources and highlights the importance of sustainable development practices. The novel also demonstrates how literature can be a powerful tool to raise awareness about environmental issues and promote social and environmental justice. Desai highlights the need for a more holistic approach to development that considers the ecological, social, and cultural aspects of people's lives. She analyses the complex and interconnected issues underlying ecological imbalances and highlights the need for holistic and sustainable approaches to development.

Lila and Hari as the Spokesperson of the Novelist

In the novel, the protagonist, Lila, observes fewer fish in the sea than there used to be and that her father's catch is becoming increasingly smaller daily. This reflects the issue of overfishing, a common problem in coastal communities where fishing is a primary source of livelihood. The novel describes the sea and beach pollution caused by industrialisation and human activities. For example, Lila observes that the sea is filled with oil and the beach is covered in plastic bags and other garbage. This highlights the impact of pollution on the environment and the villagers' health. The novel describes how the villagers rely on the forest for their daily needs, such as fuel and building materials. However, due to deforestation and urbanisation, the forest is disappearing, and the villagers must

travel farther to collect firewood and other resources. The novel portrays the villagers' traditional ecological knowledge, such as their understanding of the tides and the behaviour of the fish. This knowledge is at odds with modern capitalist development, which often disregards indigenous communities' traditional knowledge and practices. When Hari, Ramu, Bhola and Mahesh were talking about their job prospects in the factory which would be built in their village, one of them said that they would learn to operate machines. Hari said, “We don't know anything about machines,' Hari protested. 'We only know how to fish and how to grow coconuts”(Desai 20). Villagers wholly dependent on nature for survival are unaware of modern technology. It shows that the life of the villagers in a coastal region depends entirely on fishing and coconut farming.

The women and daughters of fishermen performed pooja in front of the sacred rocky stones with their heads down, praying for the safety of their husbands and sons in the untamed wilderness of the stormy sea. Instead of travelling to the established local temple, where the poor country folk had to pay money they could not afford, the poor village ladies preferred to do pooja by themselves before the rocky projections. The daily routine of village women highlights the importance of nature in their life:

> “When Lila went out on the beach it was so early in the morning that there was no one else there... She waded in till she came to a cluster of three rocks. One of them was daubed with red and white powder. It was the sacred rock, a kind of temple in the sea. At high tide, it would be inundated but now, at low tide, it could be freshly consecrated. Lila took the flowers from her basket and scattered them about the rock, then folded her hands and bowed”(Desai 1-2).

It is clear from this that Lila's submission to the holy rocks on the seashore has more outstanding merit than the worshippers who generally frequent temples. Lila's moral integrity and feeling of dedication to the living, God and nature have given her demonstrate the universal emotion of every inhabitant of the coastal village who gives obeisance to the Sea as God and worships mother nature.

Environmental Degradation versus Sustainable Development

In "Village by the Sea," Anita Desai portrays a complex relationship between the environment and human beings. On the one hand, the environment plays a crucial role in the villagers' daily lives, providing them with food, water, and other resources. For example, the sea is the primary source of livelihood for the villagers, who depend on fishing for survival. The forest provides them with fuel, building materials, and medicinal plants. On the other hand, the villagers' activities also profoundly impact the environment. Desai's portrayal of the environment and human beings in the novel reflects the larger reality of coastal communities in India and other developing countries. These communities are often at the forefront of environmental degradation due to their dependence on natural resources for their livelihoods. However, they are also the most vulnerable to environmental degradation, such as climate change, which can devastate their lives and communities.

The Village by the Sea portrays a complex and nuanced relationship between the environment and human beings, emphasising the importance of environmental sustainability. The various factors contributing to the ecological imbalances portrayed in "Village by the Sea" are linked to broader social, political, and economic issues. The novel sheds light on how historical colonialism and capitalist globalisation have contributed to the exploitation of natural resources and the degradation of the environment in India's coastal regions. Additionally, the role of government policies and corporate interests in perpetuating environmental degradation and how these factors intersect with social inequality and marginalisation issues. The social and cultural significance of the environment in the villagers' lives and how their traditional knowledge and practices are threatened by modern development. Hari is unaware of the machines; he has many questions as “How is fertilizer made? he asked. ‘What are the machines like? Are they worked with oil or coal? Who works them?”(Desai 63). It is clear that the villagers, like Hari, are naive about technology and inquisitive about machines and industrialisation, as these are new things for them.

The villagers depend on the sea for their livelihood, but overfishing has depleted the fish stock, making it increasingly difficult to make a living. Pollution from factories and garbage disposal sites has contaminated the sea, making it unsafe for fishing and swimming. Deforestation has destroyed the forest, making it difficult to find firewood and building materials. The novel also highlights the economic and social challenges faced by the villagers. Poverty is pervasive in the village, and the local moneylender exploits the villagers, who charge exorbitant interest rates on loans. The novel portrays the villagers' struggles to make ends meet and the impact of poverty on their lives. The novel emphasises the interdependence of nature and society and the consequences of their neglect. The villagers' livelihoods are intimately tied to the health of the sea, the forest, and the land. Neglecting the environment not only harms nature but also harms society. The novel portrays how the villagers' poverty and exploitation are rooted in the ecological imbalance caused by human activities.

The Novel: A Tool for Awakening Environmental Consciousness

In *The Village by the Sea,* Anita Desai highlights the villagers' economic and social challenges and the interdependence of nature and society. By depicting the village's struggles, the novel emphasises the importance of sustainable development practices considering people's lives' ecological, social, and cultural aspects. The novel's symbols like the sea, the cow, books, and motifs such as silence, dream and imagination deepen the readers' understanding of the novel's environmental themes and the character's relationship with their surroundings. They provide a richer and more layered interpretation of the story, encouraging reflection on the interconnectedness between humans and the natural world. Literature's power to transport readers to different worlds and evoke emotions holds immense potential to inspire environmental consciousness and action. *The Village by the Sea,* by Anita Desai, is a testament to the transformative role that literature can play in fostering a deeper connection with the environment and instilling a sense of responsibility towards it. Through the vivid portrayal of environmental concerns

within the novel, Desai invites readers to reflect on the impact of human actions on the natural world. The symbols, motifs, and themes related to the environment in the story serve as catalysts for understanding the interdependence between humans and nature and the consequences of neglecting or abusing our environment. They encourage readers to consider the broader implications of their actions on the planet. Literature creates empathy and emotional engagement by immersing readers in the characters' lives and their struggles with environmental challenges. This connection has the potential to awaken a sense of urgency and responsibility, prompting readers to question their behaviours and values concerning the environment. Through literary works like *The Village by the Sea,* readers can gain a deeper understanding of the consequences of environmental degradation and the need for sustainable practices.

Moreover, literature can spark dialogue and inspire collective action. When readers engage with stories that address environmental concerns, they are more likely to seek out further information, engage in discussions, and become agents of change in their communities. Literature is a platform for raising awareness, promoting critical thinking, and fostering a shared responsibility towards environmental conservation. The broader implications of literature inspiring environmental consciousness and action extend beyond individual readers. Through its ability to reach diverse audiences, literature can influence public opinion, shape policy debates, and mobilise communities towards environmental causes. It can galvanise movements and inspire individuals to advocate for sustainable practices, conservation efforts, and environmental justice.

The Village by the Sea exemplifies how literature can inspire environmental consciousness and action. Through its portrayal of environmental concerns, use of symbols and motifs, and ability to evoke empathy, the novel prompts readers to reflect on their relationship with the environment and their role in its preservation. By raising awareness, fostering empathy, and sparking dialogue, literature has the potential to ignite a collective response to environmental challenges and drive positive change for a more sustainable future. The novel holds significant importance in highlighting environmental concerns and their impact on human lives. By depicting the struggles of a coastal village grappling with environmental degradation, Desai brings attention to the urgent need for environmental awareness and sustainable practices.

Conclusion

The novel is a powerful reminder of the interconnectedness between humans and the natural world. Through vivid descriptions and evocative storytelling, Desai immerses readers in the beauty of the coastal environment and its significance to the characters' livelihoods and well-being. Simultaneously, she unflinchingly portrays the detrimental consequences of pollution, overfishing, and other environmental degradation on the village and its inhabitants. Desai's depiction of the environmental challenges faced by the characters resonates with global concerns. The novel's themes of pollution, loss of biodiversity, and the exploitation of natural resources are not limited to the fictional world of Thul but reflect real-world issues faced by coastal communities worldwide. By weaving these concerns into her narrative, Desai invites readers to confront the pressing environmental crises that affect our planet today.

Moreover, the novel underscores the role of literature in raising awareness and inspiring change. By presenting the environmental issues through the lens of relatable characters, Desai invites readers to engage with the challenges faced by the village emotionally. The symbols and motifs related to the environment deepen the readers' understanding and offer profound insights into the consequences of neglecting the natural world."The Village by the Sea" is a call to action. It compels readers to reflect on their responsibilities towards the environment, urging them to consider their choices and their impact on the planet. Through the power of storytelling, Desai ignites a sense of urgency and the recognition that every individual has a role to play in preserving our natural heritage. The novel's significance lies in bridging the gap between literature and environmental activism. It catalyses discussions on sustainable practices, conservation, and environmental justice. By highlighting environmental concerns through a compelling narrative, Desai inspires readers to take steps towards positive change, promoting a greater understanding of the need for a harmonious relationship with nature. In a world facing escalating environmental crises, "The Village by the Sea" is a powerful work that ignites environmental consciousness. It reminds us that literature has the potential to be a catalyst for social and environmental transformation, urging us to embrace our responsibility as stewards of the earth. Anita Desai's novel serves as a beacon, guiding us towards a more sustainable future and reminding us of the intrinsic value of our natural world. Despite being published several decades ago, Anita Desai's novel, "The Village by the Sea," remains highly relevant to contemporary environmental issues. The story's exploration of the delicate balance between humans and their natural surroundings resonates with ongoing global concerns regarding environmental degradation, sustainability, and the need for responsible stewardship of our planet.

First and foremost, the novel addresses the pressing issue of environmental degradation and its impact on coastal communities. Desai vividly portrays the effects of pollution, overfishing, and the exploitation of natural resources on the village of Thul. These environmental challenges mirror the contemporary reality of coastal regions worldwide, where communities grapple with dwindling fish stocks, habitat destruction, and pollution from industrial activities. Furthermore, the novel underscores the socioeconomic implications of environmental degradation. The characters in "The Village by the Sea" face poverty and struggle to make ends meet due to the declining health of their environment. This theme resonates with contemporary discussions on environmental justice, highlighting how marginalised communities often bear the brunt of ecological damage caused by unsustainable practices and lack of resource management.

Another aspect of the novel's relevance is its portraying the need for sustainable practices. Through the characters' experiences and relationships with the natural world, Desai emphasises the importance of responsible resource utilisation, conservation, and the preservation of biodiversity. This resonates with recent efforts to promote sustainable development, raise awareness about the impact of human activities on ecosystems, and encourage individuals, communities, and governments to adopt sustainable practices. Desai's descriptions of the coastal environment, the flora, fauna, and the sea itself emphasise the intrinsic value of the natural world and its role in sustaining human life. This connection resonates with contemporary environmental philosophies that highlight the need for a holistic approach to conservation, recognising the interdependence between ecological health and human well-being. The novel's enduring relevance lies in its ability to inspire readers to engage with contemporary environmental issues. By immersing readers in the struggles and triumphs of the characters, Desai prompts introspection and empathy, fostering a deeper understanding of the intricate relationship between humans and the environment. This understanding can catalyse individual and collective action, inspiring readers to make environmentally conscious choices, advocate for sustainable practices, and protect and restore the natural world. Anita Desai's novel, *The Village by the Sea,* remains highly relevant to contemporary environmental issues. Its exploration of environmental degradation, the socioeconomic implications, the importance of sustainable practices, and the interconnectedness of humans and nature resonates with ongoing discussions and efforts towards environmental conservation and sustainability. The novel serves as a powerful call to action, inspiring readers to consider their roles in preserving and protecting our planet in the face of contemporary environmental challenges.

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हिन्दी साहित्य में पर्यावरण विमर्श

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शोध सार

वर्तमान में पर्यावरण विमर्श एक महत्वपूर्ण विषय बन चुका है। आज हम पर्यावरण से संबंधित सवालों से भाग नहीं सकते। आज के दौर में मनुष्य की उपभोक्तावादी प्रवृत्ति इतनी बढ़ चुकी है कि वह सब कुछ उपयोग कर लेना चाहता है। अपनी इस प्रवृत्ति के चलते वह प्राकृतिक संसाधनों का अंधाधुंध प्रयोग कर रहा है। जल, जमीन, वायु, आकाश जैसे प्रकृति प्रदत्त संसाधनों का इतना दुरुपयोग किया जा रहा है कि ये आज संकट के दौर से गुजर रहे हैं। इस आलेख में हिन्दी साहित्य में व्यक्त पर्यावरणीय चिंता एवं चेतना की पड़ताल की गई है।

बीज शब्द - पर्यावरण विमर्श, बहुराष्ट्रीय कम्पनी, विस्थापन, प्रदूषण, उपभोक्तावाद।

मूल आलेख

प्राकृतिक उपादानों के अत्यधिक उपयोग से पर्यावरणीय समस्याएं उत्पन्न हुई हैं। पर्यावरणीय समस्याओं के उत्पन्न होने से मानव अस्तित्व संकट में आ गया है। मानव ने अब तक बहुत कुछ बर्बाद कर दिया है यदि इस संबंध में अब भी सावचेत नहीं हुए तो भावी पीढ़ी के लिए संकट उत्पन्न हो जाएगा। यही कारण है कि आज सम्पूर्ण विश्व में पर्यावरणीय मुद्दों पर विमर्श की आवश्यकता महसूस की जा रही है।

भारतीय संस्कृति में वन और वनस्पति का शुरू से ही अत्यधिक महत्त्व रहा है। प्राचीन काल में ऋषि-मुनियों के आश्रम जंगलों में ही होते थे। मानव व प्रकृति के मध्य पारस्परिक संबंध हुआ करता था। हमारे प्राचीन ग्रंथों यथा वेद, उपनिषद् आदि में भी मनुष्यों के लिए प्रकृति के महत्त्व का वर्णन किया गया है। हमारी संस्कृति में प्राकृतिक उपादान शुरू से ही पूज्य रहे हैं। आचार्य हजारी प्रसाद द्विवेदी ने अपने निबंध 'कुटज' में लिखा है कि "यह धरती मेरी माता है और मैं इसका पुत्र हूँ। इसलिए मैं सदैव इसका सम्मान करता हूँ और मैं धरती माता के प्रति नतमस्तक हूँ।" भारतीय संस्कृति हमेशा से प्राकृतिक संसाधनों के साथ अपना तालमेल बिठाती आई है लेकिन औद्योगिक क्रांति, पूँजीवादी विकास, वैज्ञानिक उन्नति, विश्वयुद्ध, शीतयुद्ध, ओजोन परत का क्षरण, परमाणु परीक्षण, वैश्वीकरण एवं उपभोक्तावाद आदि ने प्रकृति के साथ हमारे संबंधों को नुकसान पहुँचाया है। हमारे चारों तरफ न शुद्ध वायु है, न शुद्ध जल है और ग्लेशियर लगातार पिघलते जा रहे हैं, पृथ्वी का तापमान बढ़ रहा है, खाद्य पदार्थ विषाक्त हो रहे हैं। इस कारण हमारे लिए आज पर्यावरण को बचाने की जिम्मेदारी आ गई है। यही पर्यावरण विमर्श की आधार भूमि है।

हिन्दी साहित्य में आदिकाल से लेकर आधुनिक काल तक प्रकृति को विशिष्ट स्थान प्रदान किया गया है। पर्यावरण चेतना की एक समृद्ध परम्परा हिन्दी साहत्य में शुरू से ही रही है। गोस्वामी तुलसीदास ने 'राममचरित मानस' में सीता और लक्ष्मण को वृक्षारोपण करते हुए चित्रित किया है-

"तुलसी तरुवर विविध सुहाए।
कहुं कहुं सिया कहुं लखन लगाए॥"

तुलसीदास 'रामचरित मानस' में लिखते हैं कि मनुष्य शरीर की रचना पाँच प्राकृतिक तत्वों पृथ्वी, जल, अग्नि, आकाश तथा वायु से हुई है-

"छिति जल पावक गगन समीरा।
पंच रचित अति अधम शरीरा॥"

भक्तिकालीन कवियों जैसे कबीर, तुलसी, सूर, रहीम, मीरांबाई आदि सभी ने प्रकृति को सुरक्षित रखने के लिए जागरूकता फैलाई। तुलसीदास की 'रामचरित मानस' में अनेक ऐसे प्रसंग मिलते हैं जहॉ राम सीता गंगा आदि नदियों की पूजा करते हैं तथा सीता वृक्षों को सींचती दिखाई देती है। रीतिकाल में भी विभिन्न कवियों ने प्रकृति का मनोहारी वर्णन किया है। बिहारी लिखते हैं-

"कहलाने एकहि बसत, अहि, मयूर, मृग, बाघ।
जगत तपोवन सो कियो, दीरध दाघ निदाघ॥"

आधुनिक काल में कवि मैथिलीशरण गुप्त अपने ग्रंथ 'साकेत' में चन्द्र की छटा का वर्णन करते हुए लिखते हैं कि-

"चारु चंद्र की चंचल किरणें, खेल रहीं हैं जल थल में ।
स्वच्छ चांदनी बिछी हुई है, अवनि और अंबर तल में॥"

छायावादी एवं प्रकृति के सुकुमार कवि सुमित्रानंदन पंत तो प्रकृति पर अपने प्रेम को भी न्योछावर करने को तत्पर हैं, वे कहते हैं-

"छोड़ द्रुमों की मृदु छाया, तोड़ प्रकृति से मोह माया,
बाले तेरे बाल जाल में, कैसे उलझा दूँ लोचन।"

छायावादी कवि जयशंकर प्रसाद की कालजयी कृति 'कामायनी' का प्रथम पद ही प्रकृति को समर्पित है-

"हिम गिरि के उतुंग शिखर पर, बैठ शिला की शीतल छांह।
एक पुरुष भीगे नयनों से, देख रहा था प्रलय प्रवाह।"

जय शंकर प्रसाद ने अपनी अन्य कृतियों झरना, लहर, आँसू, कानन कुसुम आदि में पर्यावरण के महत्त्व को दिखाते हुए प्रकृति का सुंदर चित्रण किया है।

हिन्दी साहित्य में वनों को विशिष्ट स्थान प्राप्त है। विश्व की प्रथम कविता और प्रथम महाकाव्य का सृजन वन में ही हुआ था। परंतु मनुष्य अपने स्वार्थ के कारण वनों का विनाश करने पर तुला है। जंगलों की कटाई दिन-प्रतिदिन बढ़ती जा रही है। नरेश अग्रवाल ने इस संबंध में अपनी पीड़ा इस प्रकार प्रकट की है-

"मैं गुजर रहा था
अपने चिर परिचित मैदान से
एकाएक चीख सुनी
जो मेरे प्रिय पेड़ की थी
कुछ लोग खड़े थे
बड़ी-बड़ी कुल्हाड़ियाँ लिये
वे काट चुके थे इसके हाथ
अब पाँव भी काटने वाले थे।
हम लोग लाश उठा रहे हैं
अंतिम संस्कार भी करा देंगे
तुम राख ले जाना।"

बढ़ते भौतिकतावाद एवं सुविधा भोगी जीवन के कारण प्रकृति का शोषण हो रहा है और इसके दुष्परिणाम बड़े ही भयावह होने वाले हैं। इस संबंध में जय शंकर प्रसाद ने अपनी 'कामायनी' में चित्रित किया है-

"प्रकृति रही दुर्जेय, अपराजित, हम सब भूले थे मद में।
भोले थे, हाँ तिरते केवल, सब विलासता के मद में।
वे सब डूबे-डूबे उनका वैभव, बन गया पारावार।
उमड़ रहा था देव सुखों पर, दुख जलधि का नाद अपार।"

यहाँ प्रसाद जी संदेश देते हैं कि यदि पर्यावरण का समुचित संरक्षण नहीं किया गया तो जो प्रकृति हमें जीवन देती है, वह विनाश भी कर सकती है। अतः हमें प्रकृति के महत्त्व को समझ कर पर्यावरण संरक्षण करना अत्यन्त आवश्यक है। अज्ञेय ने अपनी 'हिरोशिमा' कविता में लिखा है-

"मानव का रचा हुआ सूरज,
मानव को भाप बना कर सोख गया।"

विख्यात पर्यावरणविद् अनुपम मिश्र की कृति 'आज भी खरे हैं तालाब' वर्तमान में पर्यावरणीय चेतना की सर्वश्रेष्ठ अभिव्यक्ति है। वरिष्ठ साहित्यकार प्रभाकर श्रोत्रिय ने पत्रिका 'ज्ञानोदय' में एक अंक 'पानी' जैसे महत्वपूर्ण विषय पर निकाला था। 'दिनमान' में फणीश्वर नाथ रेणु ने बाढ़ और सूखे इलाकों का भ्रमण कर रिपोर्ताज लिखे वे 'ऋणजल-धनजल' नाम से प्रकाशित होते थे। वे पर्यावरण के बारे में हिन्दी साहित्य की अनुपम थाती है। प्रेमचंद ने अपनी कहानी 'पूस की रात' में प्राकृतिक परिवेश का चित्रण किया है एवं 'दो बैलों की कथा' के माध्यम से प्रकृति के संवेदनात्मक पक्ष को उभारा है।

यात्रावृत्तों में निर्मल वर्मा ने 'चीड़ों पर चांदनी' अज्ञेय का 'अरे! यायावर रहेगा याद' एवं अमृतलाल वेगड़ के 'तीरे तीरे नर्मदा' में प्रकृतिक परिवेश को जीवंत किया गया है तथा प्रकृति एवं मनुष्य के संबंधों की प्रगाढ़ता को स्पष्ट किया गया है। अमृतलाल वेगड़ ने अपने यात्रावृत्त में बाँधों के निर्माण के कारण विस्थापन का दर्द भी बयाँ किया है। पर्यावरण चिंतन को केन्द्र में रखकर रचे गये उपन्यास 'मरंग गोड़ा नीलकण्ठ हुआ' (महुआ माजी), 'रह गई दिशाएँ इसी पार' (संजीव), 'हिडिम्बा' (एस.आर. हरनोट), 'कुइयाँजान' (नासिरा शर्मा) प्रमुख हैं। जहाँ पर्यावरण चिंतन

संबंधी आधुनिक प्रश्नों को उठाया गया है। नासिरा शर्मा ने 'कुइयाँजान' को जल की गंभीर होती समस्या को केन्द्र में रख कर लिखा है। पानी की किल्लत के कारण मची हाय-तौबा का चित्रण उपन्यास में इस प्रकार किया गया है-"मुहल्ले में कुएँ वर्षों पहले पाट दिये गए थे। एक दो घरों में हैण्डपम्प थे जो खराब पड़े थे। मस्जिद वाली गली से मिली अंदरवाली गली थी, वहाँ पक्के बड़े-बड़े घर थे। उनके यहाँ भी पानी की हाय-तौबा मची थी। शिव मंदिर के पुजारी भी बिना नहाये परेशान बैठे थे। उन्होंने न मंदिर धोया न भगवान को भोग लगाया था। उनके सारे गगरे-लोटे खाली लुढ़क पड़े थे। नल की टोंटी पर कई बार कौआ पानी की तलाश में आ-आकर बैठ उड़ चुका था।" यह चित्र एक गाँव या किसी मौहल्ले का नहीं है बल्कि इसके माध्यम से लेखिका ने पूरे देश का कोलाज निर्मित कर दिया है। क्या छोटे क्या बड़े, क्या अमीर क्या गरीब, मंदिर-मस्जिद सभी की एक ही समस्या पानी की समस्या है। इस उद्धरण से स्पष्ट है कि पानी की बर्बादी न रोकी तो भगवान भी कुछ नहीं कर सकता। इसके लिए केवल मनुष्य ही जिम्मेदार है। फराका बाँध से बॅगलादेश को हुए अभूतपूर्व नुकसान का जीवंत चित्रण नासिरा शर्मा ने इस उपन्यास में किया है।

कुसुम कुमार का उपन्यास 'मीठी नीम' पूर्ण रूप से वन और पेड़-पौधों की रक्षा तथा वृक्षारोपण के आंदोलन पर केन्द्रित है। उपन्यास की पात्र ओपना अशिक्षित होने के बावजूद जिस तरह से पर्यावरण के प्रति अपना प्रेम प्रदर्शित करती है वह समाज के लिए मिशाल बन जाता है। झारखंड के आदिवासी क्षेत्रों में बहुराष्ट्रीय कंपनियों द्वारा किये जा रहे उत्खनन का जिस तरह जल, जंगल, जमीन तथा आदिवासियों पर प्रभाव पड़ा है, उसका विस्तृत वर्णन महुआ मांझी ने अपने उपन्यास 'मरंग गोड़ा नीलकंठ हुआ' में किया है। यह उपन्यास यूरेनियम के उत्खनन से उत्पन्न पर्यावरणीय समस्याओं को केन्द्र में रख कर लिखा गया है। यूरेनियम मरंग गोड़ा के लिए प्रकृति का वरदान है लेकिन वहाँ के लोगों को पता नहीं था कि यह एक दिन उनके लिए अभिशाप बन जाएगा। 'रह गई दिशाएँ इसी पार' में संजीव ने जैव वैज्ञानिकों द्वारा क्लोनिंग और जेनेटिक्स के क्षेत्र में की जाने वाली अभूतपूर्व उपलब्धियों को मानवीय संबंधों के जटिल संसार में पनपने वाली विकृतियों की संज्ञा दी है। संजीव इसमें जीवों की महत्ता को दर्शाते हुए कृत्रिमता का विरोध करते हैं।

निष्कर्ष

अतः हिन्दी साहित्य में पर्यावरण के विभिन्न पहलुओं को प्रकृति के सौंदर्य चित्रण व मानवीकरण से लेकर पर्यावरण प्रदूषण व अन्य महत्त्वपूर्ण समस्याओं पर चिंतन किया गया है। न केवल चिंतन ही किया गया है बल्कि इसके साथ ही उन समस्याओं का तार्किक व उपयुक्त समाधान देने का प्रयास किया गया है। हिन्दी साहित्य मानव को प्रकृति से तादात्म्य स्थापित कर उसके समुचित उपयोग का पक्षधर है। उसका मानना है कि मानव का सम्पूर्ण अस्तित्व प्रकृति से जुड़ा हुआ है, वह अपने जीवनयापन हेतु प्राकृतिक संसाधनों पर निर्भर है। अतः उसे नष्ट कर स्वयं भी सुरक्षित नहीं रह सकता। इसलिए हिन्दी साहित्य मनुष्य को प्रकृति व पर्यावरण के साथ अनुराग करना सिखाता है। हिन्दी साहित्यकारों ने अपने साहित्य में प्रकृति की महत्ता का दिग्दर्शन कराते हुए पर्यावरण के गूढ़ रहस्यों को उद्घाटित कर पर्यावरण संरक्षण के प्रति जागरूकता लाने की पूर्ण चेष्टा की है एवं प्रकृति के समुचित उपयोग व संरक्षण के लिए प्रेरित किया है।

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दीपक सिसोदिया

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सारांश

स्वच्छ एवं शुद्ध वातावरण सम्पूर्ण मानव एवं जीव-जन्तुओं के लिये अति आवश्यक है। आज पर्यावरण, जनसंख्या वृद्धि, वाहनों एवं उद्योगों से निकले जहरीले धुएँ, तीव्र ध्वनि, वनों की कटाई आदि से प्रदूषित होता जा रहा है। विकासात्मक गतिविधियों का पर्यावरण तत्वों के साथ सामंजस्य स्थापित करने की परम आवश्यकता है। अतः इन लक्ष्यों को प्राप्त करने हेतु पर्यावरणीय मूल्यांकन (Environmental Impact Assessment or E-I-A-) योजनाकारों के लिये उपलब्ध एक कारगर उपाय है।

संधारणीय विकास हेतु पर्यावरण प्रभाव आकलन (EIA) एक महत्वपूर्ण उपकरण है।पर्यावरणबनाम विकास और पर्यावरण के साथ विकास यह दोनों ऐसे मुद्दे हैं जो लगातार विवादों और खबरों में बने रहते हैं। अक्सर देखने में आता है कि विकास के दौरान पर्यावरण की अनदेखी की जाती है। यदि पर्यावरण को नजरअंदाज किया गया तो इतना तय है कि इसके प्रतिकूल प्रभाव से भविष्य में विकास ही आहत होगा। दरअसल आज के दौर की सबसे बड़ी चुनौती यही है कि पर्यावरण और विकास के बीच संतुलन साधा जाए। ऐसे कौन से तरीके हैं जिनसे विकास की गति में भी कोई रुकावट पैदा ना हो और पर्यावरण को भी क्षति न पहुंचे। इसके लिए सरकार समय-समय पर नए-नए नियम कानून लेकर आती है ताकि पर्यावरण और विकास दोनों के मध्य संतुलन साधते हुए आगे बढ़ा जा सके। इसी के मद्देनजर पर्यावरण प्रभाव आकलन, 2020 को लाया गया है। यह पर्यावरण प्रभाव आकलन, 2006 का स्थान लेगा।

EIA, 2020 के कई बिन्दु विवाद के विषय बने हुए हैं और इनका भारी विरोध किया जा रहा है। प्रस्तुत अध्ययन मुख्यतः द्वितीयक तथ्यों पर आधारित हैं। इस आलेख में पर्यावरण प्रभाव आकलन, उसके प्रभाव, पर्यावरणीय अनुमोदन की प्रक्रिया तथा पर्यावरण प्रभाव आकलन मसौदा, 2020 से जुडी समस्याओं का अध्ययन करने का प्रयास किया जाएगा। प्रस्तुत शोध पत्र में वर्तमान पर्यावरण प्रभाव आकलननियमों का विश्लेषण किया गया है। पर्यावरण प्रभाव आकलन के महत्त्व पर प्रकाश डाला गया हैं। इस शोध पत्र में शोधार्थी ने नवीन संशोधित नियमों के मूल्यांकन के साथ-साथ पर्यावरण प्रभाव आकलन की प्रक्रिया को पारदर्शी, भ्रष्टाचार रहित बनाने के लिए कुछ रचनात्मक सुझाव भी प्रस्तुत किए गए हैं।

अध्ययन का निष्कर्ष इस तथ्य की पुष्टि करता है कि नवीन संशोधित नियम पर्यावरण प्रभाव आकलन की संकल्पना को कमजोर करते हैं । भारत में सतत विकास के लक्ष्य को प्राप्त करने के लिए पर्यावरण प्रभाव आकलन के लिए कुछ रचनात्मक बदलाव करने की आवश्यकता हैं जिनका उल्लेख प्रस्तुत अध्ययन में किया गया हैं।

मुख्य शब्द: पर्यावरण संरक्षण, पर्यावरण प्रभाव आकलन, प्रकृति, सतत विकास ।

प्रस्तावना

वर्तमान में 'विकास बनाम पर्यावरणवाद' वैश्विक चुनौती हैं। पर्यावरण और आर्थिक विकास एक-दूसरे से परस्पर जुड़े हुए है, वही एक तरफ एक देश की आर्थिक संवृद्धि के लिए प्राकृतिक संसाधनों की आवश्यकता हैं जो पर्यावरण को प्रभावित करती है। उसी तरह दूसरी तरफ पर्यावरण संसाधनो में गिरावट भी आर्थिक विकास को प्रभावित करता है।आर्थिक विकास के वांछित स्तर को प्राप्त करने के लिये तीव्र औद्योगीकरण और शहरीकरण अपरिहार्य है। माना जाता है कि प्रति व्यक्ति आय में पर्याप्त वृद्धि के लिये यह आवश्यक है।

प्राकृतिक संसाधनो के लगातार हो रहे उपभोग तथा बढ़ते प्रदूषण स्तर के कारण पर्यावरण संरक्षण की आवश्यकता हैं। ऐसे कई सारी पर्यावरण नीतियां है। जिन्हें अपनाकर हम अपने पर्यावरण को भी बचा सकते है और अपनी आर्थिक उन्नति भी सुनिश्चित कर सकते है।'विकास बनाम पर्यावरणवाद' की दुविधा को सुलझाने के लिए ई.आई.ए. संकल्पना लाई गई हैं जो पर्यावरण व विकास के मध्य समन्वय बनाती हैं।

किसी परियोजना को बनाने से पहले उसके पर्यावरण प्रभाव अध्ययन कर ई.आई.ए. रिपोर्ट तैयार की जाती हैं। ई.आई.ए. प्रतिवेदन में परियोजना से होने वाले सामाजिक, आर्थिक लाभ की चर्चा की जाती हैं। इसकें साथ-साथ पर्यावरणीय नुकसान की भी जांच की जाती हैं। पर्यावरणीय हानि को कम करने के लिए परियोजना बनाने वाली कम्पनी क्या समाधान करेगी ? इसकी चर्चा की जाती हैं तथा इन समाधानों को लागू करेगी, इसके लिए निगरानी तंत्र की व्यवस्था की जा सकती हैं।

यदि ई.आई.ए. पारदर्शी व निष्पक्ष तरीके से बनाई जाती हैं तो यह सतत विकास की अवधारणा को बढ़ावा देगी। परियोजना के दौरान संभावित जन विद्रोह को कम करेगी जिससे अंततः परियोजना की लागत कम होगी और देश आर्थिक संवृद्धि प्राप्त करेगा।

पर्यावरण संरक्षण अधिनियम, 1986 में दिए गए अधिकारों का प्रयोग करते हुए भारत सरकार ने वर्ष 1994 में अपने पहले पर्यावरण प्रभाव आकलन (ईआईए) मानदंडों को अधिसूचित किया, जो प्राकृतिक संसाधनों के उपयोग और प्रदूषण को नियंत्रित करने वाली गतिविधियों को विनियमित करने के लिए एक विधिक ढांचा स्थापित करता है। हर विकास परियोजना को पहले पर्यावरणीय स्वीकृति प्राप्त करने के लिए ईआईए

प्रक्रिया से गुजरना आवश्यक है। 1994 की ईआईए अधिसूचना को 2006 में संशोधित मसौदे के साथ बदल दिया गया थाजिसके आधार पर केंद्र व राज्य सरकारों द्वारा परियोजनाओं को स्वीकृति दी जाती हैं।

ईआईए अधिसूचना 2006 में ईआईए रिपोर्ट तैयार करने की प्रकिया काप्रावधान किया गया हैं।इसके तहत विकासात्मक परियोजनाओं को दो श्रेणियों में वर्गीकृत किया जाता हैंः श्रेणी 'A' (राष्ट्रीय स्तरीय मूल्यांकनः इन विकासात्मक परियोजनाओं का मूल्यांकन 'प्रभाव आकलन एजेंसी' और 'विशेषज्ञ मूल्यांकन समिति' द्वारा किया जाता है। श्रेणी 'B' (राज्य स्तरीय मूल्यांकन): इस श्रेणी की विकासात्मक परियोजनाओं को 'राज्य स्तरीय पर्यावरण प्रभाव आकलन प्राधिकरण' (SEIAA) और राज्य 'स्तरीय विशेषज्ञ मूल्यांकन समिति' (SEAC) द्वारा मंज़ूरी प्रदान की जाती है।

संशोधन के माध्यम से पर्यावरण प्रभाव आकलन में चार चरणों की शुरुआत की गई; स्क्रीनिंग, स्कोपिंग, जन सुनवाई और मूल्यांकन। श्रेणी 'A' परियोजनाओं को अनिवार्य पर्यावरणीय मंज़ूरी की आवश्यकता होती है, अतः इस प्रकार उन्हें स्क्रीनिंग प्रक्रिया से नहीं गुज़रना पड़ता है। श्रेणी 'B' परियोजनाएँ एक स्क्रीनिंग प्रक्रिया से गुज़रती हैं और उन्हें 'B1' (अनिवार्य रूप से पर्यावरण प्रभाव आकलन की आवश्यकता) और 'B2' (पर्यावरण प्रभाव आकलन की आवश्यकता नहीं) के रूप में वर्गीकृत किया जाता है।म्प्।रिपोर्ट के पूरा होने पर परियोजना स्थल के करीब रहने वाले सार्वजनिक और पर्यावरण समूहों को सूचित किया जाता है तथा उनसे परामर्श कर जनसुनवाई की जाती है। अंत में केंद्र व राज्य सरकारों द्वारा अंतिम निर्णय दिया जाता हैं

अध्ययन के उद्देश्य

1. विकास बनाम पर्यावरण विवाद को स्पष्ट करना।
2. सतत विकास के लिए पर्यावरण प्रभाव आकलन रिपोर्ट के महत्व को प्रकट करना।
3. वर्तमान पर्यावरण प्रभाव आकलन नियमों को विश्लेषित करना।
4. वर्तमान पर्यावरण प्रभाव आकलन नियमों का आलोचनात्मक मूल्यांकन करना।
5. पर्यावरण प्रभाव आकलन नियमों को प्रभावी एवं पारदर्शी बनाने के लिए रचनात्मक सुझाव प्रस्तुत करना।

प्राकल्पना

1. पर्यावरण मानव जीवन का आधार हैं।
2. आर्थिक विकास ने पर्यावरण को अति क्षति पहुचाई हैं।
3. पर्यावरण प्रभाव आकलन रिपोर्ट आर्थिक विकास और पर्यावरण के मध्य संतुलन स्थापित करने का एक बहत्तरीन माध्यम हैं।
4. भारत में पर्यावरण प्रभाव आकलन रिपोर्ट तैयार करने की प्रक्रिया में सुधार की आवश्यकता हैं।
5. पर्यावरण का संरक्षण एवं संवर्धन पर्यावरण में निहित हैं।

ईआईए अधिसूचना, 2020 के महत्वपूर्ण प्रावधान एवं उससे संबन्धित मुद्दे

1. नई अधिसूचना "रणनीतिक परियोजना" नाम से परियोजनाओं की एक नई श्रेणी बनाई गयी है। ये परियोजनाएँ सार्वजनिक परामर्श आवश्यकताओं से मुक्त होंगी।राष्ट्रीय रक्षा और सुरक्षा से जुड़ीं परियोजनाओं को रणनीतिक माना जाता है।
2. नये मसौदे के तहत उन कंपनियों या उद्योगों को भी क्लीयरेंस प्राप्त करने का मौका दिया जाएगा जो इससे पहले पर्यावरण नियमों का उल्लंघन करती आ रही हैं। इसे 'पोस्ट-फैक्टो प्रोजेक्ट क्लीयरेंस' कहते हैं।
3. 'B1' श्रेणी की उन परियोजना का केन्द्र सरकार द्वारा मूल्यांकन होगा जो संरक्षित क्षेत्र, पर्यावरणीय संवेदनशील क्षेत्र के 5कि.मी. दायरे में आती हैं।
4. अल्प प्रतिक्रिया अवधिः परियोजना पर जनता की प्रतिक्रिया के लिए मसौदा अधिसूचना समय अवधि को भी कम किया गया है। जनसुनवाई नोटिस की अवधि 30 दिन से घटाकर 20 दिन की गई है।
5. कमजोर निगरानी चरणः निगरानी चरण में अनुपालन की रिपोर्टिंग की आवृत्ति अवधि को छह माह से बढ़ाकर एक वर्ष कर दिया गया है।
6. महत्वपूर्ण क्षेत्रों के लिए मानदंडों में छूटः अन्तराष्ट्रीय सीमा से लगे 100 कि. मी. क्षेत्र में ई.आई.ए.आवश्यक नहीं होगी।

विचार-विमर्श

किसी भी संवैधानिक लोकतंत्र में सरकार को ऐसे कानूनों पर जनता की राय लेनी होती है, जिससे बड़ी संख्या में लोगों के प्रभावित होने की संभावना होती है और कानून के प्रावधानों में उन्हें भागीदार बनाना होता है, परंतु प्रस्तावित मसौदे में सरकार ने जनता के सुझावों के लिये बहुत कम समय सीमा दी गई।

पर्यावरणीय प्रभाव मूल्यांकन से संबंधित नई अधिसूचना पर्यावरण को बचाने के संदर्भ में लोगों के अधिकारों को छीनकर उनकी भूमिका को बहुत कम करती है। जनसुनवाई की अवधि कम की गई हैं।

सरकार ने अधिसूचना के ज़रिये अन्य परियोजनाओं के लिये भी 'रणनीतिक' शब्द का प्रयोग किया है। पर्यावरणीय प्रभाव आकलन मसौदा, 2020 के तहत अब ऐसी परियोजनाओं के बारे में कोई भी जानकारी सार्वजनिक नहीं की जाएगी, जो इस श्रेणी में आती हैं। इसकी सबसे

बड़ी हानि यह है कि अब पर्यावरण को प्रतिकूल रूप से प्रभावित करने वाली विभिन्नपरियोजनाओं को 'रणनीतिक' बताकर स्वीकृती प्राप्त की जा सकेगी।

इसके अतिरिक्त नया मसौदा विभिन्न परियोजनाओं की एक बहुत लंबी सूची पेश करती है जिसे जनता के साथ विचार-विमर्श के दायरे से बाहर रखा गया। उदाहरण के तौर पर देश की सीमा पर स्थित क्षेत्रों में सड़क या पाइपलाइन जैसी परियोजनाओं के लिये सार्वजनिक सुनवाई की आवश्यकता नहीं होगी।

एक चिंता यह भी है कि विभिन्न देश की सीमा से 100 कि.मी. वाले क्षेत्र को 'बॉर्डर क्षेत्र' के रूप में परिभाषित किया गया है। इसके कारण उत्तर-पूर्व का अधिकांश क्षेत्र इस परिभाषा के दायरे में आ जाएगा, जहाँ पर देश की सबसे घनी जैव विविधता पाई जाती है।इसके अंतर्गत सभी अंतरदेशीय जलमार्ग परियोजनाओं और राष्ट्रीय राजमार्गों के चौड़ीकरण को EIA मसौदे के तहत मंजूरी लेने के दायरे से बाहर रखा गया है।सरकार के यह सारे प्रावधान पर्यावरण संरक्षण के लिये बने मूल कानून के साथ ही गंभीर विरोधाभास की स्थिति उत्पन्न करते हैं।

नए मसौदे के तहत उन कंपनियों या उद्योगों को भी क्लीयरेंस प्राप्त करने का मौका दिया जाएगा जो इससे पहले पर्यावरण नियमों का उल्लंघन करती आ रही हैं। इसे 'पोस्ट-फैक्टो प्रोजेक्ट क्लीयरेंस' का प्रावधान बहुत खरनाक हैं। इस प्रकार अब तक बिना पर्यावरणीय मंज़ूरी के अवैध रूप से संचालित होने वाली सभी औद्योगिक इकाइयों और परियोजनाओं को एक नई योजना प्रस्तुत करके तथा निर्धारित दंड का भुगतान करके नए प्रावधान के तहत वैध इकाइयों में बदलने का अवसर मिल गया हैं। परंतु यहाँ प्रश्न यह है कि क्या एक नई योजना और निर्धारित दंड का भुगतान करके पर्यावरण को हुए नुकसान की भरपाई की जा सकती है?

पर्यावरणीय प्रभाव आकलन मसौदा, 2020 EIA प्रक्रिया पर लालफीताशाही, भ्रष्टाचार और नौकरशाही के लिये कोई ठोस उपाय नहीं करता है। इसके अतिरिक्त, यह पर्यावरण सुरक्षा में सार्वजनिक सहभागिता को सीमित करते हुए सरकार की विवेकाधीन शक्ति को बढ़ाने का प्रस्ताव करता है।

भारत में EIA रिपोर्ट तैयार करने वाली कंपनियों की कमी हैं और उनमें विशेषज्ञता का अभाव हैं। जनसुनवाई के दौरान कोरपोरेट, प्रशासन एवं राजनीतिक गठन के कारण EIA की प्रक्रिया पारदर्शी नहीं रह जाती हैं । सलाहकार समिति की सिफारिशों को मानने के लिए मंत्रालय का बाध्य ना होना EIA की प्रक्रिया का राजनीतिकरण की ओर ले जाती हैं।

निष्कर्ष

वर्तमान में 'विकास बनाम पर्यावरणवाद' वैश्विक चुनौती हैं। यदि ई.आई.ए. पारदर्शी व निष्पक्ष तरीके से बनाई जाती हैं तो यह सतत विकास की अवधारणा को बढ़ावा देगी। परियोजना के दौरान संभावित जन विद्रोह को कम करेगी जिससे अंततः परियोजना की लागत कम होगी और देश आर्थिक संवृद्धि प्राप्त करेगा।

ई.आई.ए. प्रक्रिया को मजबूत करने के लिए कुछ रचनात्मक बदलाव करने की आवश्यकता हैं। जिससे सतत विकास की अवधारणा साकार की जा सके। इसके लिए ई.आई.ए. पर विशेष पाठ्यक्रम तैयार किया जाए। ई.आई.ए. प्रक्रिया को पारदर्शी बनाने के लिए ई दृशासन का प्रयोग किया जाए। स्क्रीनिंग से लेकर निगरानी तक की पूरी ईआईए प्रक्रिया स्वतंत्र एजेंसियों द्वारा की जानी चाहिए और ईआईए करने वाली एजेंसियों के लिए एक राष्ट्रीय ईआईए प्रत्यायन निकाय का निर्माण करना चाहिए।मजबूत और समावेशी जन सुनवाई आवश्यक हैं । स्थानीय लोगों के पारंपरिक ज्ञान को शामिल करने के लिए पंचायतों और शहरी स्थानीय निकायों को ईआईए का हिस्सा होना चाहिए। रिपोर्ट को स्थानीय स्थानीय भाषाओं में भी प्रकाशित किया जाना चाहिए।

संदर्भ ग्रंथ सूची

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मारवाड़ रियासत का विलय - राजस्थान संघ में

जीवाराम

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प्रजामण्डलों द्वारा एकीकरण के लिये किये गये प्रयास

राजपूताना के विभिन्न प्रांतों में प्रजामण्डल स्थापित हो गये थे। स्थानीय स्तर पर इन संगठनों ने एकीकरण और उससे सम्बन्धित मुद्दों को लेकर जनता के मनोभावों और जनचेतना को अभिव्यक्ति करने में महत्त्वपूर्ण प्रयास किये। मारवाड़ प्रजामण्डल की कार्यकारिणी समिति ने अपने **10** वे सत्र के दौरान बहुत से प्रस्ताव एकीकृत राजस्थान के गठन को लेकर पारित किये। सिरोही प्रजामण्डल ने रेजिडेंट को रिजेंसी कांउसिल बनाने को कहा, ताकि प्रशासन पर रेजिडेंट का वर्चस्व खत्म हो। प्रजामण्डल के नेता रेजिडेंट का ध्यान जनता के अधिकारों की ओर दिलाना चाहते थे तथा काउंसिल में लोकप्रिय प्रतिनिधित्व की मांग कर रहे थे।

जोधपुर रियासत

सम्भवतः रियासतों के विलय व राजस्थान के एकीकरण के काल में जोधपुर एक ऐसी रियासत थी जो सबसे ज्यादा विवादास्पद रही चारों ओर ये अफवाह फैली हुई थी कि जिन्ना ने जोधपुर को अत्यधिक रियासती शर्तों पर पाकिस्तान में सम्मिलित होने का प्रस्ताव रखा है। लेकिन जिन्ना की यह योजना सफल नहीं हो सकी, क्योंकि महाराजा जोधपुर को राजपूत वर्ग का सहयोग नहीं मिला। जोधपुर रियासत के महाराजा अंत तक राजस्थान संघ में विसीनीकरण की प्रक्रिया को बाधित करते रहे।

रियासती मंत्रालय की भूमिका

20 फरवरी, **1947** की ब्रिटिश प्रधानमंत्री एटली की भारत पर सम्प्रभुता की समाप्ति की घोषणा के साथ ही भारत में बालकन गणराज्यों जैसी समस्या उत्पन्न होने की खतरनाक संभावना उत्पन्न हो सकती थी। यदि स्वतंत्र भारत का रियासती मंत्रालय देशी रियासतों के साथ सहयोग के स्थान पर कोई अन्य रास्ता अपनाता। इसलिये स्वतंत्र भारत की नई सरकार का प्रथम कार्य **5** जुलाई, **1947** को रियासती मंत्रालय की स्थापना करना रहा। ताकि **25** जून, **1947** को जो फैसला मंत्रिमंडल की बैठक में लिया गया था उसके आधार पर देशी रियासतों के साथ सम्बन्धों का संचालन हो सके। इस विभाग का मुख्य कार्य भारत सरकार और देशी रियासतों के मध्य उत्पन्न होने वाले विभिन्न मुद्दों पर समझौता वार्ता करना था। देशी रियासतों के साथ अपने सम्बन्धों का संचालन करने के लिये स्थानीय प्रतिनिधियों को नियुक्त किया गया ताकि देशी रियासतें उनके साथ समझौता कर सकें।

5 जुलाई, **1947** को पटेल ने देशी रियासतों के साथ अपने सम्बोधन में यह स्वीकार किया कि ब्रिटिश परमोच्चता का सिद्धांत देशी रियासतों के संबंध में अपरिभाषित रह गया है। उन्होंने कहा कि अपनी स्वतंत्रता को पुनः प्राप्त करने की राजाओं की मांग के साथ उनकी सहानुभूति है किंतु उन्हें इसके प्रयोग में सावधानी बरतनी होगी। ताकि इन रियासतों के हित भारत के सामान्य हित के विरुद्ध प्रयोग नहीं हों, साथ ही केन्द्र व क्षेत्रीय शक्तियों के सामूहिक हित के खिलाफ भी इसका प्रयोग नहीं किया जा सकें। उन्होंने जोर दिया कि इस नये विभाग का कार्य भारत के हित में कार्य करना है न कि दूसरों पर प्रभुत्व स्थापित करना।

सरदार पटेल और उनके विभाग के ऊपर भूतपूर्व राजनीतिक अधिकारियों ने तीन अंतः सम्बंधित दोष लगाए। पहला आरोप पटेल और उनके प्रमुख सहायक वी.पी.मेनन के ऊपर ये लगाया कि उन्होंने **1947** की गर्मियों में राजाओं द्वारा अपने अभिषेक के अवसर पर हस्ताक्षरित समझौते में शामिल प्रतिरक्षा, विदेश और संचार से सम्बन्धित मसलों के अतिरिक्त दूसरे मामलों में भी हस्तक्षेप किया। इसके अतिरिक्त उन्होंने नाजायज और कायरतापूर्ण तरीके अपनाये, राजाओं को धमकियां दी, ब्लैकमेल किया और बलपूर्वक अधीन किया। असंतुष्ट और पूरी तरह से विलय के अनिच्छुक शासकों को लाचार करके अपनी सत्ता को त्यागने पर विवश किया।

अंत में पटेल और मेनन पर राजाओं के साथ कुटिल और निंदाशील व्यवहार करने का आरोप लगाया गया। समझौते पर हस्ताक्षर करवाने के लिये उन्होंने राजाओं को पूरी तरह बहलाया फुसलाया।

लेकिन दूसरी तरफ जब हम विचार करते हैं कि पटेल और उनके कांग्रेसी सहयोगियों ने जुलाई और अगस्त, **1947** के समय जिस प्रकार की गम्भीर स्थितियों का सामना किया उसमें यह असम्भव प्रतीत होता है कि उन्होंने देशी रियासतों के विरूद्ध कोई विस्तृत और सुनियोजित योजना का निर्माण किया होगा। भारत संघ और देशी रियासतों के मध्य हस्ताक्षरित लिखित बन्ध पत्र एक अस्थाई दस्तावेज था जिसका उद्देश्य भारत के विखण्डन को तब तक के लिये रोकना था जब तक कि कार्यवाहक संवैधानिक ढांचा अस्तित्व में नहीं आ जाये। किसी भी प्रकार की कानूनी व्यवस्था न स्थापित हो जायें। पटेल और मेनन ने इसके अतिरिक्त कुछ सोचा हो इस बात के कोई प्रमाण नहीं मिलते। वास्तव में देशी रियासतों के विलीनीकरण में जो भूमिका सरदार पटेल और मेनन ने निभाई वह भारतीय इतिहास में सदा स्मरणीय रहेगी। भारत के अंतिम गवर्नर जनरल

माउंटबेटन ने देशी रियासतों के एकीकरण में पटेल की भूमिका को सदा ही गर्व की दृष्टि से देखा उन्होंने कहा था कि देशी रियासतों का भारतीय संघ में विलय ही वर्तमान की सर्वश्रेष्ठ उपलब्धि है यदि आप इसमें असफल हो गए होते तो इसके परिणाम खतरनाक हो सकते थे।.....वर्तमान सरकार ने रियासतों के विषय में उत्कृष्ट नीति का पालन किया है। **1956** में भारत की यात्रा के समय जार और जारशाही दोनों को नष्ट करने वाले देश सोवियत रूस के नेता निकेता खुश्चेव ने सरदार पटेल की उपलब्धियों पर आश्चर्य व्यक्त करते हुए कहा था कि-

"You Indian an amazing people! How on earth did you manage to liquidate the princely rule without liquidating the princes?"

मारवाड़ रियासत का आन्तरिक प्रशासन

बीसवीं सदी का रियासती राजस्थान अतीत की वैभवशाली ईमारतों के बचे-खुचे अवशेषों के समान था। जहाँ गरीब जनता सामन्तशाही के बोझ तले दबी हुई थी। यहाँ न तो किसी प्रकार की वास्तविक प्रतिनिधियात्मक संस्थाए विद्यमान थीं न ही मूल अधिकार और न ही कानून व्यवस्था का कोई नामो निशान था।

मारवाड़ रियासत निरंकुश, स्वेच्छाचारी ब्रिटिश साम्राज्य के अनियंत्रित राज्यक्रम की दासता को बनाये रखने के यंत्र के समान कार्य कर रहीं थीं तथा भारतीय प्रगति के मार्ग में एक बड़ी बाधा के समान थीं। अंग्रेज रेजिडेन्ट रियासतों के वास्तविक शासक और राजाओं के मालिक के समान व्यवहार करते थे। उनके पास विस्तृत अलिखित अधिकार थे। "देश गुलाम था अंग्रेजों का, देशी नरेश गुलाम था ब्रिटिश साम्राज्य का और नरेश के भाई बंधु गुलाम थे- नरेश के। रियासत में बसने वाला और कड़ी मेहनत से खेती करने वाला असली अन्नदाता किसान और समाज की सेवा करने वाला आम नागरिक गुलाम थे इन तीनों के।

मारवाड़ रियासत का विलीनीकरण में जनमानस की भूमिका

सन् **1935** तक आते-आते देशी रियासतों में जन जागृति के स्पष्ट लक्षण दिखाई देने लगे थे। विभिन्न रियासतों व उनके ठिकानों में स्थान-स्थान पर कृषक आन्दोलन चल रहे थे, व जनता उद्वेलित होती जा रही थी। परन्तु देशी रियासतों के आन्दोलन सुदृढ़ केन्द्रीय संगठन व सही दिशा निर्देशन के अभाव में अस्त-व्यस्त थे। जनता के पास अपना कोई रचनात्मक कार्यक्रम नहीं था। देशी राज्य लोक परिषद को भी स्पष्ट नहीं था कि प्रजा को विरोधस्वरूप कौन सा मार्ग ग्रहण करना चाहिये? अन्याय सहें या प्रतिकार करें। यदि कोई आन्दोलन किया जाये तो वह किस रूप में और किस ढंग से किया जाये। देशी राज्यों की प्रजा की सबसे बड़ी समस्या यह थी, कि उसे कोई भी राजनीतिक दल सहायता नहीं देना चाहता था। कांग्रेस व गांधी रियासती मामलों में पूरी तरह "अहस्तक्षेप" की नीति का अनुसरण कर रहे थे। गांधी का विचार यह था कि " ब्रिटिश भारत को देशी राज्यों की नीति के निर्णय करने के अधिकार नहीं है। उनके इस विचार की कठोर आलोचना की गई।" हम लोगों ने अपने आंदोलन में देशी राज्यों के निवासियों से लाखों रुपये की मदद ली है और सैकड़ों देशी राज्य निवासी हमारे सत्याग्रह में सरकार के महमान रह चुके है। अब उन लोगों का साथ छोड़ना घोर कृतघ्नता होगी।

अपनी स्थापना से लेकर **1920** ई. तक कांग्रेस की नीति देशी रियासतों में अहस्तक्षेप की रही यहाँ तक कि रियासती राजाओं के प्रति उसकी सहानुभूति रही। **1920** ई. के बाद कांग्रेस ने देशी रियासतों के मामलों में सीमित रुचि दिखाई तथा रियासती शासकों से आग्रह किया कि वे अपनी रियासतों में उत्तरदायी शासन की स्थापना करें। गांधी का मानना था कि रियासती जनता अभी आन्दोलन के लिए तैयार नहीं है। रियासती जनता को किसी बाहरी सहायता की अपेक्षा स्वयं अपने पैरों पर खड़ा होना चाहिये। **1938** ई. तक आते आते कांग्रेस के समाजवादी विचारधारा वाले वर्ग जिसमें जवाहरलाल नेहरू, जयप्रकाश नारायण जैसे नेता थे इन्होंने देशी रियासतों के विषय में कांग्रेस की अहस्तक्षेप की नीति का विरोध किया। जवाहरलाल नेहरू ने मारवाड़ जंक्शन पर एकत्र जनता से कहा था कि " रियासती मामलों में मुझे दिलचस्पी है और रियासतों में क्या-क्या होता है? यह मुझे मालूम रहता है। इधर अखिल भारतीय देशी राज्य लोक परिषद ने कांग्रेस के समक्ष ऐसी स्थिति उत्पन्न कर दी कि वह देशी रियासतों के विषय में सोचे तथा इस विचार को मानने को तैयार हो कि " देशी रियासतों की समस्या को सुलझाये बिना भारत की समस्या का समाधान संभव नहीं है।" इधर गोलमेज सम्मेलन तथा संघीय शासन प्रणाली के विषय में राजाओं के नकारात्मक व अड़ियल रवैये के कारण कांग्रेस राजाओं की कटु आलोचक बन गयी। ऐसी स्थिति में **1938** के हरिपुरा अधिवेशन में कांग्रेस ने रियासतों से सम्बन्धित प्रसिद्ध प्रस्ताव पास किया कि- "इसलिए कांग्रेस आदेश देती है कि रियासतों की कांग्रेस समितियां, कार्य समिति के निर्देशन में कार्य करें।.....रियासतों की भीतरी लड़ाई कांग्रेस के नाम पर नहीं लड़ी जानी चाहिए। रियासतों के संघर्ष को जारी रखने के लिए स्थानीय स्तर पर प्रजामण्डलों का निर्माण किया जाये। रियासती आन्दोलन के प्रति कांग्रेस ने सहानुभूति जताई तथा कहा कि पूर्ण उत्तरदायी शासन की स्थापन अब दूर नहीं है। "दो रेलगाडियां अलग-अलग जा रहीं थी - उन्हें मिलाकर एक ही ट्रेन का वर्तमान रूप दे दिया गया और संचालन का दायित्व गाँधी के हाथों में सौप दिया गया । हरिपुरा अधिवेशन के पश्चात् भी काफी समय तक कांग्रेस ने देशी राज्यों में गहरी रुचि नहीं ली जिसका प्रमुख कारण अखिल भारतीय स्तर पर उसे बड़ी समस्याओं का निराकरण करने में सक्रिय रहना था। अंततः **1939** ई. के त्रिपुरी अधिवेशन में अध्यक्ष सुभाष चन्द्र बोस ने कहा कि "देशी रियासतों की जनता में "अभूतपूर्व जनजागृति" देखने को मिली है। कांग्रेस को देशी रियासतों से सम्बन्धित हरिपुरा प्रस्ताव परिभाषित करने की आवश्यकता है।

अन्ततः लुधियाना में देशी राज्य लोक परिषद ने जवाहरलाल नेहरू का नेतृत्व प्राप्त करने में सफलता प्राप्त की। इस प्रकार वैचारिकता व क्रियात्मकता के स्तर पर देशी राज्य लोक परिषद पूरी तरह कांग्रेस से जुड़ गयी। अति-उत्साह से परिपूर्ण देशी राज्य लोक परिषद के निर्देशन में

राजपूताना की रियासतों में "प्रजापरिषद" और "प्रजामण्डलों" का गठन किया गया। जिससे भारतीय स्वतंत्रता संघर्ष को व्यापक होने में बड़ी सहायता मिली।

जोधपुर रियासत का अधिग्रहण

14 जनवरी, 1949 को उदयपुर में वृहत राजस्थान बनाने की घोषणा करने के बाद **25** जनवरी**, 1949** को सरदार पटेल ने जोधपुर में आयोजित एक आम सभा को सम्बोधित करते हुए कहा कि राजस्थान के एकीकरण की प्रक्रिया अभी चल रही है। हमें आशा है कि यह प्रक्रिया शीघ्र ही पूर्ण कर ली जायेगी तथा अतिशीघ्र हम उस एकता को प्राप्त कर लेंगे जिसे इतिहास में शायद ही कभी प्राप्त किया गया हो। एक संघ बनाया गया है किंतु बीकानेर**,** जोधपुर**,** जैसलमेर तथा जयपुर इससे बाहर हैं। यद्यपि अभी इन राज्यों से समझौता वार्ता चल रही हैं किंतु यह निर्णय कर लिया गया है कि यूनाईटेड राजस्थान जितनी शीघ्र संभव हो सके अस्तित्व में आयेगा। राजस्थान के राजाओं ने एकता के लिये बहुत कुछ किया है तथा इस कार्य में हमारी सहायता की है कि हम स्वतंत्रता को फिर से न खो दे तथा हम अपनी कमजोरी से विदेशी सत्ता की गुलामी को फिर से न ले आये।

7 अप्रैल, 1949 को महाराजा जोधपुर ने राजस्थान के महाराज प्रमुख को दिल्ली से तार किया कि " मैं हनुवंतसिंह**,** जोधपुर का महाराजा**,** हस्ताक्षरित प्रसंविदा के अनुसार मारवाड़ रियासत आपके सुपुर्द कर रहा हूँ।" राजस्थान के राजप्रमुख ने पी.एस.राउ को तार भेजकर निर्देशित किया कि आप जोधपुर रियासत का प्रशासन तत्काल प्रभाव से ग्रहण कर लें। पी.एस.राउ ने 7 अप्रैल 1949 को जोधपुर राज्य के प्रशासन का कार्यभार संभाल लिया। विलय के समय जोधपुर राज्य ने राजस्थान सरकार को 4 करोड़ 75 लाख रूपये की पोते-बाकी सौपी।

निष्कर्ष

प्रस्तुत अध्याय में मारवाड़ रियासत का विलय राजस्थान संघ में किस प्रकार से किया गया का विश्लेषणात्मक अध्ययन किया गया हैं।

मारवाड़ प्रजामण्डल द्वारा स्थानीय स्तर पर इन संगठनों ने एकीकरण और उससे संबंधित मुद्दों को लेकर जनता के मनोभावों और जनचेतना को अभिव्यक्त करने में महत्वपूर्ण प्रयास किये।

रियासती मंत्रालय ने भी महत्वपूर्ण भूमिका निभाई। इस विभाग का मुख्य कार्य भारत सरकार और देशी रियासतों के मध्य उत्पन्न होने वाले विभिन्न मुद्दों पर समझौता वार्ता करना था। देशी रियासतों के साथ अपने संबंधों का संचालन करने के लिए स्थानीय प्रतिनिधियों को नियुक्त किया गया ताकि देशी रियासतें उनके साथ समझौता कर सकें।

मारवाड़ रियासत का आंतरिक प्रशासन निरंकुश**,** स्वेच्छाचारी ब्रिटिश साम्राज्य के अनियंत्रित राज्यक्रम की दास्ता को बनाये रखने के मंत्र के समान कार्य कर रही थी तथा भारतीय प्रगति के मार्ग में एक बड़ी बाधा के समान थी। अंग्रेजी रेजिडेंट रियासतों के वास्तविक शासन और राजाओं के मालिक के समान व्यवहार करते थे। रियासत में बसने वाला और कड़ी मेहनत से खेती करने वाला असली अन्नदाता किसान और समाज की सेवा करने वाला आम नागरिक गुलाम था। मारवाड़ रियासत के विलय के साथ ही यह सब खत्म हो गया जिससे आम जनता व किसान लम्बी दमनात्मक नीति से छुटकारा मिला।

मारवाड़ रियासत का विलीनीकरण में जनमानस की भूमिका महत्वपूर्ण रही। सन् 1935 तक आते आते देशी रियासतों में जन जागृति के स्पष्ट लक्षण दिखाई देने लगे थे। विभिन्न रियासतों व उसके ठिकानों में स्थान-स्थान पर कृषक आंदोलन चल रहे थे व जनता उद्वेलित होती जा रही थी परन्तु देशी रियासतों के आंदोलन सुदृढ़ केन्द्रीय संगठन व सही दिशा निर्देशन के अभाव में अस्त व्यस्त थे। जनता के पास अपना कोई रचनात्मक कार्यक्रम नहीं था विलीनीकरण से रियासतों में एक स्थायी जवाब देशी शासन स्थापित हो गया जिससे आम जनता किसान वर्ग में सुकून की आस जगी।

जिस समय महाराजा हनवंतसिंह ने मोहम्मद अली जिन्ना से जोधपुर के पाकिस्तान विलय के विषय में भेंट की यह खबर जनता में फैलते ही जन आंदोलन छिड़ गया इस विकट स्थितियों में जयनारायण व्यास तथा उनके सहयोगियों ने मारवाड़ लोक परिषद के नेतृत्व में जमकर विरोध प्रदर्शन किये तथा जोधपुर के भारत में विलय के एड़ी चोटी का जोर लगा दिया अतः व्यास को प्रधानमंत्री नियुक्त किया गया। यह मंत्रिमण्डल अब राजस्थान में विलय की प्रक्रिया और स्थानीय समस्याओं को सुलझाने में व्यस्त हो गया।

इस प्रकार जोधपुर रियासत से राजतंत्र के अत्याचार समाप्त हुए तथा लोकतंत्र की ठंडी बयार बहने लगी। जिन्ना और मुस्लिम लीग के नेताओं की जोधपुर नरेश से कई बार भेंट हुई थी और अंतिम भेंट में जैसलमेर के महाराजकुमार को भी साथ ले गए थे। बीकानेर नरेश ने उनके साथ जाने से मना कर दिया था और हनवंतसिंह जिन्ना के पास अकेले जाने में हिचकिचा रहे थे सूचना है कि जिन्ना ने एक कोरे कागज पर हस्ताक्षर करके अपनी कलम के साथ उसने जोधपुर नरेश को दे दिया और उनसे कहा कि आप इसमें जो भी शर्तें चाहे भर सकते है लेकिन पटेल व वी.पी.मेनन को इसकी भनक लग गई थी। इन दोनों ने महाराजा राजा को विश्वास में लेकर के विलय पत्र पर हस्ताक्षर करवा दिये। इस प्रकार से जोधपुर पाकिस्तान में जाने से बचा लिया।

7 अप्रैल 1949 को महाराजा जोधपुर ने राजस्थान के महाराज प्रमुख को दिल्ली से तार किया कि मैं हनुवंतसिंह, जोधपुर का महाराजा हस्ताक्षरित प्रसंविदा के अनुसार मारवाड़ रियासत आपको सुपुर्द कर रहा हूँ। राजस्थान के रियासत का प्रशासन तत्काल प्रभाव से ग्रहण कर ले। पी.एस राउ ने 7 अप्रैल, 1949 को जोधपुर राज्य के प्रशासन का कार्यभार संभाल लिया। विलय के समय जोधपुर राज्य ने राजस्थान सरकार को 4 करोड़ 75 लाख रुपये की पोते-बाकी सौंपी। इस प्रकार से मारवाड़ रियासत का भारत संघ में विलय पूर्ण हुआ।

जलवायु परिवर्तन पर एक विश्लेषणात्मक अध्ययन

कविता चौधरी

राजनीति विज्ञान विभाग, डॉ0 भीमराव अंबेडकर यूनिवर्सिटी, आगरा, उत्तर प्रदेश, भारत

सारांश

प्रस्तुत शोध "जलवायु परिवर्तन पर एक विश्लेषणात्मक अध्ययन" वर्तमान परिप्रेक्ष्य में इसकी नीतियों की सुदृढ़ीकरण की उन्मुक्तता पर बल देता है। इसकी प्रस्तावना में जलवायु परिवर्तन से संसाधनों पर दबाव बढ़ने से वन चारागाह कृषि भूमि, नदीय जल, भू-जल आदि संसाधनों को लेकर तनाव तथा आपदा की स्थिति प्रवसन को लेकर संघर्ष आदि जो जलवायु परिवर्तन को सामाजिक तनाव में वृद्धि करने वाले प्रमुख कारकों की पृष्ठभूमि पर प्रकाश डाला गया है। मुख्य भाग में मानव और पर्यावरण प्रभाव में वैश्विक वार्मिंग ओजोन परत रिक्तीकारण बर्फ की चादरें सिकुड़ना, समुद्र तल में वृद्धि, महासागर अम्लीयकरण, वार्मिंग महासागरों आदि का वर्णन (NAPCC) द्वारा अन्य चल रही पहल योजनाओं और महत्वपूर्ण घटनाओं की समय रेखा के साथ ही जलवायु परिवर्तन की चुनौती को देखते हुए भारत सरकार ने जलवायु परिवर्तन के मुद्दों को दूर करने के लिए अपनी प्रतिबद्धता दिखाई है। वैश्विक प्रयास व भारत की नीतियों का वर्णन एवं मूल्यांकन किया है। संदर्भित साहित्य का विश्लेषण करते हुए विभिन्न सूचना स्रोतों से विषय वस्तु का संकलन एवं इसका सूक्ष्म विश्लेषण किया गया है। निष्कर्ष में दिखाया गया है कि जलवायु परिवर्तन के कारण कृषि और स्वास्थ्य संबंधी खतरों से संबंधित मुद्दों को दृढ़ता से और प्रभावी ढंग से संबोधित किया जाना चाहिए।

मुख्य शब्दः जलवायु परिवर्तन, जैव जगत, धनात्मक वृद्धि, न्यूनीकरण जलवायु, पर्यावरण, ऊष्माशोषी गैस, तापमान, मौसम परिवर्तन, अवशोषित।

प्रस्तावना

जलवायु परिवर्तनः जब किसी विशेष क्षेत्र के औसत मौसम में किसी कारण से परिवर्तन आता है तो उसे जलवायु परिवर्तन कहते हैं। वर्तमान परिपेक्ष्य में जलवायु परिवर्तन की बात करें तो इसका प्रभाव लगभग संपूर्ण विश्व में देखने को मिल रहा है। वैज्ञानिकों का मानना है कि पृथ्वी का तापमान लगातार बढ़ रहा है बीते 100 वर्षों में पृथ्वी का तापमान 1 डिग्री फारेनहाइट तक बढ़ गया है जो कि मानव जाति के लिए घातक सिद्ध हो सकता है। जैसे मानव और पर्यावरण प्रभाव में वैश्विक वार्मिंग, ओजोन परत रिक्तिकरण, बर्फ की चादर सिकुड़ना, समुद्र तल में वृद्धि, महासागर अम्लीयकरण, वार्मिंग महासागरों आदि। वर्तमान समय में वायुमंडल के औसत तापक्रम में धनात्मक वृद्धि के कारण जलवायु जलवायिक परिवर्तन के अत्यंत गंभीर परिणाम प्रकट हो रहे हैं। जिनका न्यूनीकरण एवं निराकरण मानव के समग्र प्रयासों से ही संभव है। IPCc (intergovernmental panel on climate change) की तथा अनेक वैश्विक संस्थाओं की रिपोर्ट में जलवायु परिवर्तन की पुष्टि कर स्पष्ट किया है कि पृथ्वी का औसत तापमान बढ़ता जा रहा है। सन 1961 से 1990 के बीच पृथ्वी का औसत तापमान लगभग 14 डिग्री सेल्सियस था। वर्ष 1998 में यह 0.52 डिग्री सेल्सियस यानी 14.52 डिग्री सेल्सियस दर्ज किया गया था। इस समय विकसित देशों की चमक और उनकी पश्चात उपभोक्तावादी दृष्टि से प्राकृतिक संसाधनों पर निरंतर बढ़ता दबाव जिससे समस्त पर्यावरण का अवनयन हो रहा है। पृथ्वी की जलवायु स्थैतिक ना होकर गतिशील प्रक्रम है जो प्राकृतिक चक्रानुसार सदैव बदलती रहती है अर्थात जलवायु परिवर्तन एक प्राकृतिक नैसर्गिक क्रिया है परंतु बेतहाशा मानवीय गतिविधियों व हस्तक्षेप के कारण जलवायु परिवर्तन की दर में आई वृद्धि अत्यंत चिंता का विषय है।[1] जलवायु परिवर्तन आज दुनिया के सामने सबसे बड़ा खतरा है। मौसम और तापमान के पैटर्न ने वैश्विक बदलाव के परिणाम स्वरूप मानव आबादी और पर्यावरण पर विनाशकारी प्रभाव पड़ रहा है। उदाहरणतः कैलफोर्निया में जंगल की आग का लंबा मौसम मैक्सिको की खाड़ी में बिगड़ते उष्णकटिबंधीय तूफान, और पूर्वी तट पर कड़ाके की ठंड। जलवायु परिवर्तन की सबसे बुरे प्रभावों से बचने के लिए हमें अपने उत्सर्जन को तुरंत कम करना चाहिए ताकि हमारे ग्रह को आने वाली पीढ़ियों के लिए रहने लायक बनाया जा सके। सुधार कचरे में कटौती करके और स्थानीय स्तर पर खरीददारी करके,टिकाऊ परिवहन, अपने कार्बन पदचिह्न को कम कर सकते हैं। सामुदायिक जलवायु समाधान की वकालत कर सकते हैं जैसे अक्षय ऊर्जा सिंगल यूज प्लास्टिक पर प्रतिबंध टिकाऊ कृषि। जलवायु से संबंधित घटनाओं की तैयारी करके समुदाय भी अपने जलवायु लचीलेपन में सुधार कर सकते हैं। दुनिया भर के कई संगठन पहले से ही इन जलवायु समाधान के लिए लड़ रहे हैं।[2]

उद्देश्य

जलवायु परिवर्तन अनुकूलन के लक्ष्यों में जलवायु परिवर्तन के जोखिम और भेद्यता को कम करना, लचीलापन को मजबूत करना, भलाई में वृद्धि करना और अनुमान लगाने की क्षमता और परिवर्तन के लिए सफलता प्रतिक्रिया करना शामिल है। भारत के अभीष्ट राष्ट्रीय स्तर पर निर्धारित योगदान में 2030 तक उत्सर्जन तीव्रता को एक तिहाई कम करना शामिल है। बायोमास, पवन, सौर जलविद्युत आदि है जो कि शुद्ध शून्य कार्बन उत्सर्जन हासिल करने के लिए भारत के पास पर्याप्त कार्बन न्यूट्रल संसाधन है।

जलवायु परिवर्तन समष्टि आर्थिक प्रभाव और जोखिमों को कम करना आर्थिक विकास की राह में रुकावट को समाप्त करना।हमारे समक्ष विद्यमान सबसे गंभीर वैश्विक पर्यावरण संकट को समाप्त करने की कोशिश करना बढ़ते पर्यावरण प्रदूषण के कारण धरती के तापमान की बढ़ोतरी को कम करने के लिए उपाय ढूंढना जलवायु परिवर्तन पर राष्ट्रीय कार्य योजना के द्वारा सरकार की कोशिश किया जाना। जलवायु परिवर्तन प्रदर्शन सूचकांक में भारत का स्थान रैंकिंग में आठवां आना और इससे भी कम लाने की कोशिश करना।

हाइड्रोजन ऊर्जा का उद्देश्य पेट्रोलियम उपयोग, ग्रीनहाउस गैस उत्सर्जन एवं वायु प्रदूषण को कम करना और अधिक विविध और कुशल उर्जा अवसंरचना में योगदान करना है। हरित हाइड्रोजन मिशन इस्पात एवं सीमेंट जैसे भारी उद्योगों से न केवल कार्बन उत्सर्जन करने के लिए आवश्यक है, वल्कि यह स्वच्छ ऊर्जा आधारित इलेक्ट्रिक वाहनों के लिए मार्ग प्रशस्त करने हेतु भी महत्त्वपूर्ण है।

साहित्य की समीक्षा

भारतीय संदर्भ में बात करें तो कुछ अध्याय जिन्होंने जलवायु परिवर्तन से उत्पन्न जोखिमों को उजागर कर मुख्य रूप से कृषि क्षेत्र और लोगों के जीवन स्तर से जुड़े जोखिमों को बताया है। भारत, अमेरिका, चीन, रूस और दुनिया के अधिकांश देशों की तुलना में (अफ्रीका को छोड़कर) जलवायु परिवर्तन के प्रति संवेदनशील माना जाता है (जोशी और पटेल 2009)। कर्नाटक में विभिन्न से विभिन्न प्रकार की फसलों की पैदावार जैसे- धान, सफेद मटर, रागी और ज्वार पर अत्यधिक तापमान के प्रभाव का विश्लेषण करने वाला एक अन्य और अध्ययन भी यह दर्शाता है कि अत्यधिक तापमान वाले दिनों की संख्या के बीच एक व्युत्क्रम रैखिक संबंध होता है जो की फसल की पैदावार को प्रभावित करता है क्योंकि पैदावार पर ताप का प्रभाव वर्षा के प्रभाव से अधिक होता है (मुरारी और अन्य 2018), तापमान में वृद्धि कृषि उत्पादकता को कम कर देती है किंतु वर्षा जब तक अधिक मात्रा में ना हो वह कृषि उत्पादकता को प्रभावित नहीं करती है (विर्थल और अन्य , 2014) अगर इस जोखिम को प्रायः दूर करने के लिए नीतियां नहीं बनाई जाती, तो तापमान में हो रही लगातार वृद्धि के कारण वर्ष 2100 तक भारत की प्रति व्यक्ति सकल घरेलू उत्पादन (GDP) में 64 प्रतिशत तक की गिरावट आ सकती है (कहन और अन्य 2019), आईपीसीसी 2019 इस प्रकार प्रौघोगिकी में हो रहे थे तीव्र प्रगति तथा जनांकिकीय बदलावों के साथ मिलकर जलवायु परिवर्तन बड़े आर्थिक उथल-पुथल लाने की क्षमता रखता है। (रूडवुश, 2019) मौसमी परिस्थितियों में होने वाले बदलावों के दीर्घकालिक मैक्रो इकोनॉमिक परिणाम विभिन्न रूपों में देखने को मिल सकते हैं। इसे सर्वाधिक स्पष्ट रूप से कृषि उत्पादन में देखा जा सकता है (दिलीप. अर्चना और सुजाता. कुंडू, 2020)।

विश्लेषण:जलवायु परिवर्तन के कारणों का विश्लेषण करें इन्हें दो भागों में बांटा जा सकता है:

1. प्राकृतिक गतिविधियाँ जिनमें ज्वालामुखी विस्फोट, महाद्वीपीय संवहन, समुद्री धाराएं, पृथ्वी का झुकाव, भूस्खलन, समुद्री तूफान, बाढ़, सूखा, अकाल आदि से पर्यावरण प्रदूषित होता है।
2. मानवीय गतिविधियाँ जिसमें वनोन्मूलन बेतहाशा वृद्धि के कारण भरण-पोषण हेतु अत्यधिक अनाज पैदा करने के लिए रासायनिक कीटनाशकों एवं उर्वरकों का प्रयोग, औद्योगिकीकरण, शहरीकरण आदि जिससे जलवायु पर कुप्रभाव पड़ता है। जलवायु परिवर्तन से प्रभाव में मानव स्वास्थ्य (पर्यावरणीय शरणार्थी) पर प्रभाव, जैव विविधता पर प्रभाव, कृषि पर प्रभाव, समुद्री स्तर पर प्रभाव, वर्षा पर प्रभाव आदि।

जलवायु की दशाओं में यह बदलाव प्राकृतिक भी हो सकता है और मानव की क्रियाकलापों का परिणाम भी कुछ परिवर्तन कारकों का जलवायु में बहुत जल्द ही प्रभाव पड़ता है जैसे सौर विकिरण में बदलाव, पृथ्वी की कक्षा में बदलाव, महाद्वीपों की परावर्तकता में बदलाव, वातावरण, महासागरों पर्वत निर्माण और महाद्वीपीय बहाव तथा ग्रीनहाउस गैसों की सांद्रता में परिवर्तन आदि शामिल है।[3] जैव पानी के चक्र और कार्बन तथा इसके साथ अन्य कारक वाष्पन-उत्सर्जन, बादल गठन, और प्रतिकूल मौसम आदि जो कि जलवायु को प्रभावित करने में अपनी महत्वपूर्ण भूमिका निभाते है। उदाहरण स्वरूप - 2.3 अरब साल पहले हिमाच्छादन में ऑक्सिजेनिक प्रकाश संश्लेषण का विकास होने से ग्रीनहाउस गैस कार्बन डाइऑक्साइड का उपयोग कर ऑक्सीजन मुक्त करने की प्रक्रिया शुरू हो गई। एक और हिमाच्छादन 300 लाख साल पहले दफन संवहनी भूमि-पौधों के अपघटक से कार्बन सिंक और कोयला बनने की प्रक्रिया शुरू हुई । 55 लाख साल पहले समृद्ध समुद्री पादप प्लवक द्वारा पोलिसोसीन युगीन ऊष्मा की अधिकतम समाप्ति। 49 लाख साल पहले, 800,000 साल का आर्कटिक अजोला ब्लूम्स के कारण भूमंडलीय तापक्रम वृद्धि के उत्क्रमण। घास-तृणभोजी पशु परिस्थितिक तंत्र के विस्तार के द्वारा पिछले 40 लाख साल में वैश्विक ठंड का बढ़ना आदि।[4]

जलवायु परिवर्तन सभी जगह थोड़े-थोड़े बदलाव होते रहते हैं किन्तु जलवायु परिवर्तन में मुख्य रूप से उन बदलावों पर ध्यान दिया जाता है जिससे प्रकृति को हानि होती है इसका सबसे ज्यादा प्रभाव जीव-जन्तुओं और पेड़ पौधों पर पड़ता है क्योंकि जलवायु परिवर्तन से कई प्राकृतिक आपदाएं आने लगती हैं और यह सभी इनका सामना करने में मनुष्यों से कम समर्थ होते है। सभी पेड़- पौधे हर प्रकार के जलवायु में नहीं रह सकते क्योंकि सभी के लिए अलग-अलग प्रकार की जलवायु की आवश्यकता होती है जैसे की जीव-जन्तु, पेड़-पौधों सभी प्रकार की जलवायु में नहीं रह सकते।[5] मनुष्य पर इसका मुख्य रूप से प्रभाव: जिनका पक्का मकान नहीं है अधिक गर्मी बरसात या ठंड पड़ना आर्थिक रूप

से कमजोर लोगों पर इसका बहुत अधिक प्रभाव पड़ता है किंतु आर्थिक रूप से मजबूत लोगों भी जलवायु परिवर्तन का प्रभाव कई तरह से पड़ता है।

विश्व के औसत तापमान में हुई वृद्धि के कारण जलवायु परिवर्तन और उसके फलस्वरुप मौसमी चक्र में आ रहा परिवर्तन के कारण उन्नत और उभरती दोनों प्रकार की अर्थव्यवस्थाओं के समष्टि आर्थिक परिदृश्य के सम्मुख प्रमुख जोखिम बनकर उभरा है। संयुक्त राष्ट्र की टिप्पणी है कि जलवायु परिवर्तन के ऐसा मुद्दा है जो हमारे समय को परिभाषित कर रहा है और हम एक निर्णायक क्षण पर खड़े हैं हाल ही की अवधि में भारत भी मौसमी चक्र में बड़े परिवर्तन का साक्षी रहा है।

अखिल भारतीय स्तर पर दो अलग-अलग सूचक सूचकांकों का निर्माण किया गया - तापमान सूचकांक और वर्षण सूचकांक और खाघ स्फीति और आर्थिक गतिविधि संकेतको पर उनके प्रभाव का विश्लेषण किया गया परिणामों से पता चला कि मौसम की स्थिति विशेष रूप से वर्षा, खाघ स्फीति पथ पर मजबूत प्रभाव डालती है और यह प्रमुख कुछ महीनों तक बना रहता है। खाघ के भीतर देखे तो, सब्जियों की कीमतें वर्षा आघात के प्रति सबसे ज्यादा संवेदनशील होती है।[6] परिणामों से यह भी देखने को मिला है कि पीएमआई, आईआईपी, बिजली की मांग, व्यापार, पर्यटन आगमन ट्रैक्टर एवं ऑटोमोबाइल ब्रिकी जैसे आर्थिक गतिविधियों के कुछ प्रमुख संकेतकों पर मौसम की स्थिति का महत्वपूर्ण प्रभाव पड़ता है ।

ग्लोबल वार्मिंग समस्या की बढ़ती हुई गंभीरता को देखते हुए भारत को ऐसे कदम उठाने चाहिए जिससे उत्पन्न गंभीर दुष्परिणामों के प्रभाव को कम कर सके। ग्रीनहाउस गैस सन् 2040 तक दुगुना होने और इस सदी के अंत तक तीन गुना होने की संभावना है। विशेषज्ञों के अनुसार जलवायु परिवर्तन के संबंध में दी गई रिपोर्ट ग्लोबल वार्मिंग के कारण फसल का उत्पादन कम होगा बीमारियां फैलेंगी और यह जैव-विविधता में कमी का कारण होगी। एक अध्ययन के अनुसार यदि तापमान में 1 से 4 डिग्री सेल्सियस तक वृद्धि होती है तो भोज्य पदार्थों के उत्पादन में 30 प्रतिशत तक कमी आ सकती है। कोपनहेगन में जलवायु परिवर्तन सम्मेलन में कृषि वैज्ञानिक डॉ0 एम. एस. स्वामीनाथन ने कहा कि इसके चलते देश में 64 प्रतिशत लोगों पर बहुत अधिक प्रभाव पड़ेगा जिसमे जीवनयापन का साधन कृषि है और सबसे बड़ा डर खाद सुरक्षा से संबंधित है क्योंकि तापमान की वजह से भारत में 7 मिलियन टन गेहूं के उत्पादन में कमी आएगी जिससे 1.5 मिलियन डॉलर गेहूं का वित्तीय नुकसान होने की संभावना है इस तथ्य के मद्देनजर कहा जा सकता है कि आने वाले समय में ग्लोबल वार्मिंग की समस्या और विकराल रूप धारण कर सकती है। वर्ष 2005 की रिपोर्ट में बताया गया कि 1960 के बाद औसत तापमान 3 डिग्री सेल्सियस बढ़ गया है इसकी वजह से मानसून में उथल-पुथल होगी और कहीं सुखे तो कहीं बाढ़ की स्थिति उत्पन्न होगी, इतना ही नहीं समुद्र के जलस्तर में 1 मीटर बढ़ोतरी की उम्मीद जताई गई जलस्तर बढ़ने से दक्षिण पूर्व एशिया में कटाव, डूब का खतरा बढ़ेगा। वायुमंडल में ग्रीनहाउस गैस से जलवायु परिवर्तन पर असर पड़ा है जिससे कुछ प्रजाति खतरे में आ गई है जैसे कि ग्लोबल वार्मिंग की वजह से ऑक्सफोर्ड यूनिवर्सिटी के वैज्ञानिकों के मुताबिक सबसे ज्यादा खतरा तो गुरिल्ला प्रजाति को है इस समय केवल 50 गुरिल्ला जंगलों में है। तापमान में महज 2 डिग्री सेल्सियस की वृद्धि से कोलोबाइन्स सरीखी पत्ते खाने वाली अफ्रीकी बंदरों की प्रजाति विलुप्त हो जाएगी।[7]

जलवायु परिवर्तन पर राष्ट्रीय कार्य योजना में उन उपायों की पहचान की गई है जो हमारे विकास संबंधी उद्देश्यों को बढ़ावा देने के साथ-साथ जलवायु परिवर्तन की समस्या से प्रभावी ढंग से निपटने के लिए सह-लाभ भी उपलब्ध कराते हैं यह कार्य विकास संबंधी मार्ग में एक दिशापरिवर्तन करके तकनीकी दस्तावेज में शामिल वर्तमान और नियोजित कार्यक्रम में वृद्धि करके किया गया है 6 जून 2008 में तत्कालीन प्रधानमंत्री मनमोहन सिंह ने 'जलवायु परिवर्तन व भारत के प्रथम राष्ट्रीय क्रिया योजना' को जारी किया था। 30 जून 2008 को जलवायु परिवर्तन पर भारत के राष्ट्रीय कार्ययोजना का शुभारंभ किया गया था । राष्ट्रीय कार्ययोजना को ध्यान में रखते हुए राष्ट्रीय जलवायु परिवर्तन कार्ययोजना के अंतर्गत 8 राष्ट्रीय मिशन शामिल है। राष्ट्रीय सौर मिशन, राष्ट्रीय ऊर्जा बचत मिशन, सवंवर्धित, राष्ट्रीय सतत पर्यावास मिशन, राष्ट्रीय जल मिशन, राष्ट्रीय हिमालयी पारिप्रणाली सतत परिरक्षण मिशन, राष्ट्रीय हरित भारत मिशन, राष्ट्रीय सतत कृषि मिशन, राष्ट्रीय जलवायु परिवर्तन का कार्यनीतिक-ज्ञान मिशन, मिशन क्रियान्वयन।[8]

संबंधित मंत्रालयों द्वारा संस्थानीकरण कर इन राष्ट्रीय मिशन को इंटरसेक्टरल समूहों द्वारा आयोजित किया गया और इससे संबंधित मंत्रालयों के अतिरिक्त वित्त मंत्रालय और योजना आयोग, उद्योगों, शैक्षिक संस्थाओं और जन समुदाय के विशेषज्ञ शामिल हुए। मिशन द्वारा किए जाने वाले कार्य के आधार पर संस्थानिक ढांचे में परिवर्तन किया गया और इसमें सर्वोत्तम प्रबंधन मॉडल पर प्रतियोगी अवसर शामिल किए गये । सौर शक्ति, वनीकरण तथा अपशिष्ट से ऊर्जा परिवर्तन क्रमशः राष्ट्रीय सौर मिशन, राष्ट्रीय हिमालयी परिप्रणाली परिरक्षण मिशन तथा राष्ट्रीय सतत पर्यावास मिशन में शामिल है, जबकि नाभिकीय शक्ति आणविक ऊर्जा उपयुक्त 8 मिशन में से किसी में भी शामिल नहीं है। देश के 4 राज्यों मणिपुर, केरल, मिजोरम और झारखंड द्वारा प्रस्तावित 'संभावित योजना एवं संचालनों की वार्षिक योजना' को मंजूरी दी गई है। अक्टूबर 2015 में राष्ट्रीय ग्रीन इंडिया मिशन की राष्ट्रीय कार्यकारी परिषद की द्वितीय बैठक में- भारत की कार्य योजना के तहत आईएनडीसीसी के लक्ष्यों में वन एवं

वृक्ष लगाकर कार्बन सिंक को बढ़ावा देना, प्रदूषण उपशमन, स्वच्छ ऊर्जा विशेषकर नवीकरणीय ऊर्जा को बढ़ावा देना, ऊर्जा दक्षता को बढ़ावा इत्यादि शामिल है।[9]

वर्तमान परिप्रेक्ष्य में भारतः climate change Images-1

स्रोत - http:èèwww.google.comèimgres

(जलवायु परिवर्तन प्रदर्शन सूचकांक (CCPI, 2023) के अनुसार भारत आठवें स्थान पर नवम्बर 22, 2022 (JITENä~A PATEL, bharat ke pramukh indc in climate change Images-1) जलवायु परिवर्तन के प्रदर्शन के आधार पर भारत को विश्व के शीर्ष 5 देशों में एवं जी-20 देशों में सर्वश्रेष्ठ स्थान दिया गया है। जर्मनी में स्थित जर्मन वॉच, न्यू क्लाइमेट इंस्टीट्यूट तथा क्लाइमेट एक्शन नेटवर्क इंटरनेशनल द्वारा प्रकाशित जलवायु परिवर्तन प्रदर्शन सूचकांक (क्लाइमेट चेंज परफॉर्मेंस इंडेक्स-सीसीपीआई 2023) के अनुसार भारत ने 2 स्थानों की छलांग लगाईं है और अब वह 8वें स्थान पर है। नवंबर 2022 में सीओपी 27 में जारी सीसीपीआई की नवीनतम रिपोर्ट में डेनमार्क, स्वीडन, चिली और मोरक्को को केवल ऐसे चार छोटे देशों के रूप में दिखाया गया है जो क्रमशः भारत से ऊपर चौथे, 5वें, 6वें और 7वें स्थान पर थे। किसी भी देश को पहला, दूसरा और तीसरा स्थान नहीं दिया गया। इसलिए, सभी बड़ी अर्थव्यवस्थाओं में यह गर्व की बात है कि भारत की रैंकिंग सबसे अच्छी है।

जलवायु परिवर्तन प्रदर्शन सूचकांक (CCPI) का उद्देश्य अंतर्राष्ट्रीय जलवायु राजनीति में पारदर्शिता बढ़ाने के साथ ही उसे जलवायु संरक्षण प्रयासों एवं अलग-अलग देशों द्वारा की गई प्रगति की तुलना करने में सक्षम बनाना है।

ग्राम पंचायतों से अगले पांच वर्षों के लिए एक कार्य योजना तैयार करने का भी आग्रह पीएम मोदी ने किया ताकि जल आपूर्ति से लेकर स्वच्छता और अपशिष्ट प्रबंधन तक के रोडमैप पर विचार किया जा सके पीएम मोदी ने कहा कि पंचायतों को जल जीवन मिशन का नेतृत्व करना चाहिए ताकि सभी ग्रामीण परिवारों को नल से पीने का स्वच्छ पानी उपलब्ध हो सके। मंत्री निर्मला सीतारमण ने वित्त वर्ष 2023-24 के लिए बजट पेश किया। इसमें सरकार द्वारा हरित विकास पर फोकस है हरित विकास को ध्यान रखकर कई प्रोग्राम चलाए जाएगें। देश के अलग-अलग इकोनॉमिक सेक्टर में एनर्जी के बेहतर इस्तेमाल के लिए रिनुअल ग्रीन एनर्जी, ग्रीन फार्मिंग, ग्रीन मोबिलिटी, ग्रीन बिल्डिंग ट्रीटमेंट के लिए कई प्रोग्राम को चलाया जाएगा। ग्रीन एनर्जी की दिशा में उठाए जा रहे कदमों से कार्बन उत्सर्जन में भी कमी आएगी ही साथ ही ग्रीन जॉब के मौके भी मिलेंगे। साथ ही वित्त मंत्री ने प्राकृतिक गैस मंत्रालय और पेट्रोलियम द्वारा ऊर्जा उद्देश्य ऊर्जा सुरक्षा के लिए प्राथमिकता पूंजी निवेश के लिए 35हजार करोड रुपए की घोषणा की है। वित्त मंत्री ने लद्दाख में नवीनीकरण ऊर्जा योजना के लिए 20,700 करोड़ रुपए और हरित मिशन के लिए 15,000 करोड की घोषणा की है साथ ही शहरों में सीवेज को साफ करने और उसे संशोधित करने के लिए मशीनीकरण को प्रोत्साहन किया जाएगा। इसमें सूखे और गीले कचरे प्रबंधन पर विशेष जोर दिया जाएगा। जनवरी में केंद्रीय मंत्रिमंडल ने राष्ट्रीयहाइड्रोजन मिशन के लिए 19,744 करोड़ रुपए के प्रारंभिक परिव्यय को मंजूरी दी थी। केंद्रीय मंत्री अनुराग ठाकुर ने कहा था। देश में इलेक्ट्रोलाइजर और ग्रीन हाइड्रोजन निर्माण के लिए 70,000 करोड़ रुपये से अधिक की प्रोत्साहन राशि आवंटित की जाएगी जबकि देश में ग्रीन हाइड्रोजन हब विकसित करने पर 400 करोड खर्च किए जाएंगे। जनवरी में गुरुवार से भोपाल में आयोजित होने वाले दो दिवसीय जल दृष्टि 2047 सम्मेलन का आयोजन जल शक्ति मंत्री गजेंद्र सिंह शेखावत का ही पानी को बचाने का प्रयास है। उन्होंने कहा कि भारत को 2047 तक अनुमानित जल तनाव की स्थिति के लिए पहले से तैयार रहना चाहिए। वही 2024 तक पानी की आवश्यकता पर आकलन हमारे पास उपलब्ध पानी की कुल मात्रा से अधिक होगा। आज की तारीख में पानी का संचयन योग्य घटक लगभग 1,180 बिलियन क्यूबिक मीटर (बीसीएम) है और हमारी आवश्यकता 880 बीसीएम है लेकिन 2027 तक मांग जारी है। केंद्रीय मंत्री ने कहा कि कृषि में जल उपयोग दक्षता पर केंद्रीय प्रमुख समाधानय सीवेज का पुनर्चक्रण और पुनः उपयोगय भूजल पुनर्भरण गतिविधियाँय जल छाजनय और लोगों के मन में जल के प्रति संवेदनशीलता पैदा करना। दशकों पुराने एसवाईएल विवाद सहित राज्यों के बीच चल रहे जल विवाद के बीच यह सम्मेलन हो रहा है, जहाँ पंजाब और हरियाणा के बीच शांति स्थापित करने के केंद्र के प्रयास विफल हो गए हैं।[10]

शोध प्रविधि

शोध की अध्ययन पद्धति ऐतिहासिक, तुलनात्मक विश्लेषणात्मक हैं।

अध्ययन के स्रोत

किसी भी शोध व अनुसंधान के लिए तथ्यों का संकलन अति आवश्यक है तथ्यों के संकलन के साथ ही उनका विश्वसनीय एवं सार्थक होना भी आवश्यक है । तभी शोध व अनुसंधान में वास्तविकता उभरकर सामने आती है। इस शोध में द्वितीयक स्रोतों का उपयोग किया है ।

निष्कर्ष

वर्तमान में नगरीकरण औद्योगिकीकरण और वैश्वीकरण के दौर में मानवीय गतिविधियों एवं आवश्यकताओं की पूर्ति तथा प्राकृतिक संसाधनों के अंधाधुंध दोहन के कारण जलवायु परिवर्तन के हानिकारक प्रभाव हमारे सामने प्रकट हो रहे हैं अतः हमें प्राकृतिक संसाधनों का

समुचित संतुलित एवं विवेकपूर्ण उपयोग करना अत्यंत आवश्यक है अन्यथा भविष्य में एक बड़ी अनहोनी को नहीं टाला जा सकेगा इसलिए हमें जिम्मेदार नागरिक होने के नाते पर्यावरण या परितंत्र को स्वस्थ एवं स्थाई बनाए रखने के लिए जन आंदोलन व पर्यावरण जागरूकता में अपनी महत्वपूर्ण भूमिका निभानी चाहिए ।

इसके प्रभावों से बचने के उपाय

भू उपयोग प्रारूप में सुधार, वृक्षारोपण को अत्यधिक बढ़ावा देना, जीवाश्म ईंधन का न्यूनतम उपयोग, वनोन्मूलन को नियंत्रित करना, ग्रीनहाउस गैसों के उत्सर्जन पर यथासंभव रोक, प्लास्टिक की वस्तुओं का सीमित उपयोग, परंपरागत ऊर्जा संसाधनों के विकल्प के रूप में गैर परंपरागत ऊर्जा स्रोतों के उपयोग को अधिकाधिक बढ़ावा देना, जैव उर्वरकों का अधिकतम उपयोग एवं रासायनिक कीटनाशकों एवं उर्वरकों के उपयोग पर नियंत्रण, पुनः उपयोग में आ सकने वाले पदार्थों से बनी वस्तुओं का अधिक से अधिक उपयोग करना, पर्यावरण मित्र एवं पर्यावरण हितैषी तकनीकी व विकास पर बल देना, पर्यावरण संरक्षण के आंदोलन को जन आंदोलन का रूप देना आदि। परंपराओं और संरक्षण और संयम के मूल्यों के आधार पर जीवन जीने के एक स्वस्थ और स्थायी तरीके को आगे और आगे बढ़ाने के लिए समाधानः 2030 तक गैर-जीवाश्म ईंधन आधारित ऊर्जा संसाधनों से लगभग 40 प्रतिशत संचयी विद्युत ऊर्जा स्थापित करने की क्षमता प्राप्त करने के लिए हरित जलवायु कोष (GCF) सहित प्रौद्योगिकी और कम लागत वाले अंतर्राष्ट्रीय वित्त की सहायता से आर्थिक विकास के अनुरूप स्तर पर दूसरों के द्वारा पीछा किए जाने की तुलना में जलवायु के अनुकूल और क्लीनर मार्ग को अपनाना जलवायु परिवर्तन, विशेष रूप से कृषि, जल संसाधन, हिमालयी क्षेत्र, तटीय क्षेत्रों, स्वास्थ्य और आपदा प्रबंधन के लिए संवेदनशील क्षेत्रों में विकास कार्यक्रमों में निवेश बढ़ाकर जलवायु परिवर्तन के लिए बेहतर अनुकूलन। 2005 के स्तर से 2030 तक अपने सकल घरेलू उत्पाद की उत्सर्जन तीव्रता को 33 से 35 प्रतिशत तक कम करना। आवश्यक संसाधनों और संसाधन अंतराल के मद्देनजर उपर्युक्त शमन और अनुकूलन कार्यों को लागू करने के लिए विकसित देशों से घरेलू और नए और अतिरिक्त धन जुटाना। क्षमताओं का निर्माण करने के लिए, भारत में अत्याधुनिक जलवायु प्रौद्योगिकी के त्वरित प्रसार के लिए घरेलू ढांचा और अंतर्राष्ट्रीय वास्तुकला बनाएं और भविष्य की ऐसी प्रौद्योगिकियों के लिए संयुक्त सहयोगी अनुसंधान एवं विकास के लिए। 2030 तक अतिरिक्त वन और वृक्ष आवरण के माध्यम से 2.5 से 3 बिलियन टन सीओ 2 के अतिरिक्त कार्बन सिंक बनाने के लिए ।

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योग एवं अध्यात्म

डा0 लाजपति शर्मा

कमला शिक्षक प्रशिक्षण महाविद्यालय एवं जिला संयोजक भारत स्वाभिमान एवं पतंजलि योग समिति, धौलपुर, राजस्थान, भारत

बाहरी मौन व आन्तरिक उमंग के उत्सव और आन्तरिक शान्ति और बाहरी उत्सव एक सुखद सम्मिश्रण है यह अध्यात्म।

जब कभी मन में दुबिधा हो मन में एकदम निश्चलत्ता योगासन का यही बडा प्रभाव है कि मन की सभी दुबिधाए और द्वन्द्व शान्त हो जाते है।

ततो द्वन्द्वानभिघात (पंतजंलि योग सूत्र **2-48)**

मन का नकारात्मक बातों पर चिपकना मन की वृत्ति है परन्तु योगासन एवं ध्यान की सहायता से मन सहज ही निराशा व नकारात्मकता से ऊपर उठ कर जीवन की आनन्द भरी प्राणमयी शक्ति का एहसास करता है। शरीर को ठीक रखने के लिए आसन होते हैं और मन की मानसिकता व भावुकता को ठीक रखने के लिए प्राणायाम।

शरीर के अलावा आसन मन के लिए लाभदायक है और मन के साथ-साथ प्राणायाम शरीर के लिए। दोनों के बीच में कोई स्पष्ट भेद नहीं है। ध्यान से आध्यात्मिक, व्याकुलता, निराशा, खिन्नता और उदासीनता दूर होती है। इसलिए कहा गया है कि योग मन में चलने वाली सभी अनगिनत क्रिया को शान्त करता है।

योगश्चित्तवृत्ति निरोधः (पतजंलि योग सूत्र **1-2)**

योग अभ्यास करने से हमारे जीवन में भौतिक मानसिक, भावनात्मक और आध्यात्मिक स्तरों पर सभी दुख दूर होते हैं। योग के अनुशासन में बधे रहते सभी प्रकार के ज्ञात या अज्ञात, शारीरिक एवं मानसिक दुःख दर्द से छुटकारा पाया जा सकता है।

हेय दुःखम् अनागतम् (पतजंलि योग सूत्र **2-16)**

हमें अपने अन्तः करण की शुद्धि की आवश्यकता है। नींद लेकर हम अपनी थकावट तो दूर कर लेते है पर गहरे छिपे तनाव शरीर में बसे रहते हैं। ध्यान, योग और सुदर्शन क्रिया द्वारा हम चेतना की गहरी से गहरी परत को भी शुद्ध कर सकते हैं। तब हम अन्दर से खिलते हैं और पूर्ण शक्तिशाली और समग्र बनते हैं। वरना छोटी-छोटी बाते और घटनाएं हमें जीवन में बिचलित कर देती हैं। जब जीवन के आध्यात्मिक स्तर पर ध्यान दिया जाता हैं तब एकता, जिम्मेदारी, करुणा, दया आदि के भाव समूचे मानवता के लिए हमारे मन में उजागर होते हैं। ज्ञान जो प्रेम और बुद्धि (दिल व दिमाग) को जोड़ता है मन में आनन्द भर देता है, वही आध्यात्मिकता है। जीवन एक अमूल्य उपहार है और उपहार का आनन्द तब मिलता है जब हम उसके उपर लपेटे रंगीन कागज से परे होकर खोजते हैं।

चिन्ता व तनाव से राहत

चिन्ता, भय, तनाव इन भावनाओं से जुडे अनुभवों पर यदि हम मनन करने लगें तो शायद हम गिनती ही भूल जाएं। परीक्षा के परिणाम की चिन्ता या रिपोर्ट कार्ड के प्रति माता-पिता की प्रतिक्रिया, किसी से पहली मुलाकात या कार्य साक्षात्कार की घबराहट। हम सब इन क्षणों से गुजर चुके हैं। भय, खाने में नमक के समान थोड़ा जरूरी भी है ताकि हम अनुशासित, ध्यानकेन्द्रित एवं गतिशील रहें।

समस्या तब शुरू होती है जब यह भय निरन्तर हावी होकर हमारे दैनिक जीवन में दखल देने लगता है तब यह एक चिन्ता, विकार, अत्यधिक बैचेनी या किसी अनजान चीज के भय का रूप ले सकता है जिसका इलाज करना जरूरी है। यहीं पर योग उपयोगी साबित होता हैं।

योग के आध्यात्मिक पक्ष

सबसे श्रेष्ठ तप है प्राणायाम । इससे मन शुद्ध होता है। जो शुद्ध है वह प्रबुद्ध है सिद्ध है। यदि किसी ने ओ३म् का जप किया तो वह प्राणायाम है और परमात्मा का स्मरण कर उसके नाम का जप है। यह वाचिक जप है। मन में ओ३म् का या गायत्री का जप करना मानसिक जप है। यह भक्ति की पराकाष्ठा है। ज्ञान व भक्ति पूर्वक कर्म करना भक्ति का निर्दोष मार्ग है। जप किसी भी भाषा में किया जा सकता है। क्योकिं परमात्मा सभी भाषाओं का ज्ञाता है। वैसे तो प्राणायाम का मंत्र ओं भूः ओं भुवः ओं स्वः ओं मंहः ओं जनः ओं तपः ओं सत्यम् है। इसे भस्रिका या कपालभाति प्राणायाम के साथ भी किया जा सकता है। सभी मंत्रों की शुरूआत ओंमकार से होती है। शरीर के सभी अंगो की आकृति ओंमकार की है। जैसे - भौं, आँख, नाक, होठ, गला, पेट आदि

ओम इति एकाक्षरः ब्रह्मः

भक्ति पूर्वक प्राणायाम करने से शक्ति मिलती है। अतः ज्ञान पूर्वक श्रद्धा भक्ति व विश्वास के साथ कर्म करना चाहिए। अन्ध विश्वास में नहीं। तर्क एवं निर्णय करके ईश्वर के प्रति श्रद्धा रखनी चाहिए। ईश्वर की प्राप्ति के लिए कहा है -

हर जगह मौजूद है, पर नजर आता नहीं,
योग साधन के बिना, कोई उसे पाता नही॥

योग से आध्यात्मिक भारत व आध्यात्मिक विश्व का निर्माण

योग के समय ओंकार का ध्यान रखना चाहिए। योग से शरीर एवं मन पर अनुशासन होता है। आत्म अनुशासन होता है। योग करना और कराना हमारा परम धर्म है, परम ध्येय है, सनातन धर्म है, ऋषिधर्म है, मानव धर्म है, सेवा धर्म है, युग धर्म है, अतः हम योगमय जीवन जीएं। इससे परिवार, समाज, राष्ट्र आध्यात्मिक विश्व का निर्माण होता है। योग में राजनीति न हो, राजनीति में योग हो, शिक्षा में योग हो, कर्म में योग हो, धर्म में योग हो, जीवन को योगमय बनाने से बड़ा कोई तप नहीं है। यदि हम दिव्य, सुखी, सफल, सुखद और समृद्ध जीवन चाहते है तो हम योगमय जीवन जीएं, यज्ञमय जीवन जीएं।

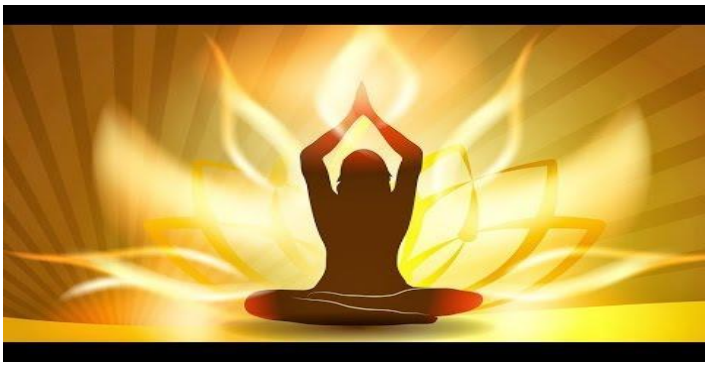
योग से हमारे जीवन पर प्रभाव

योग का प्रभाव हमारे तन पर ही नहीं मन पर भी पड़ता है। इससे जीवन निम्न प्रकार प्रभावित होता है -

1. शरीर होता है स्वस्थ।
2. मन रहता है हमेशा प्रसन्न।
3. विचार होते हैं परिष्कृत।
4. मिट जाते है मानसिक रोग।
5. बढ़ती है सकारात्मक ऊर्जा।
6. बढ़ती है कार्यशीलता।
7. बदल जाता है व्यक्तित्व।
8. आती है अच्छी नींद।
9. आदत से मिलती है मुक्ति।
10. योग से पाता है व्यक्ति सिद्धि।

निष्कर्ष

योग से शारीरिक और मानसिक एकाग्रता बढ़ती है। इससे आन्तरिक मन में झांकने तथा शारीरिक संरचना और विभिन्न अंगो को आपसी सामंजस्य के साथ कार्य करने में बल मिलता है। आध्यात्मिकता योग का एक हिस्सा है। योग का आध्यात्मिक पहलू शान्ति और मन की स्पष्टता की प्राप्ति पर जोर देता है। योग आध्यात्मिक कल्याण और स्वास्थ्य आध्यात्मिक विकास और एकीकृत विश्वदृष्टि के विकास की सुविधा प्रदान करता है। अतः इन लाभो को प्राप्त करने के लिए नियमित योग अभ्यास आवश्यक है।



पर्यावरण शिक्षा

डॉ. माता प्रसाद शर्मा[1] एवं तृप्ति शर्मा[2]

1. निदेशक, अनुसन्धान केन्द्र, एवं अधिष्ठाता, शिक्षा, जरारासं विवि.जयपुर, राजस्थान, भारत

2. शोधार्थी- शिक्षाशास्त्र विभाग, जरारासंविवि., जयपुर, राजस्थान, भारत

सारांश

हमारा सारा जीवन पर्यावरण पर निर्भर करता है। यह हमारे जीवन को निर्देशित करता है और हमारे उचित विकास और वृद्धि को निर्धारित करता है। सामाजिक जीवन के अच्छे और बुरे गुण हमारे प्राकृतिक वातावरण की गुणवत्ता पर निर्भर करते हैं।मनुष्यों की भोजन, पानी, आवास और अन्य वस्तुओं की जरूरत हमारे चारों ओर के पर्यावरण पर निर्भर होती है। पर्यावरण और मनुष्यों, पेड़-पौधों और पशुओं के बीच एक संतुलित प्राकृतिक चक्र मौजूद है। मानव समाज प्राकृतिक वातावरण को गंदा करने में महत्वपूर्ण भूमिका निभा रहा है, जिसके बदले में यह भी ग्रह पर जीवन को नकारात्मक रूप से प्रभावित कर रहा है। इस आधुनिक दुनिया में सभी मानवीय कार्य सीधे पूरे पारिस्थितिकी तंत्र को प्रभावित करते हैं। पर्यावरण के सन्तुलन को बन पर्यावरण शिक्षा जन-समुदाय को पर्यावरण जानकारियों से परिचित कराकर पर्यावरण बोध को पुष्ट करती है, पर्यावरण कठिनाइयों के कारण और निवारण का मार्ग ढूढ़ती है तथा भविष्य की कठिनाइयों से आगाह कर जीवन को निरापद बनाने का मार्ग प्रशस्त करती है। पर्यावरणीय शिक्षा मानव की पर्यावरण जन्य चेतना को जागृत कर मानवीय आचरण को संतुलित बनाती है।

मूलशब्दः पर्यावरण, शिक्षा, प्रकृति, वातावरण, प्रदूषण।

प्रस्तावना

पर्यावरण शिक्षा वह शिक्षा है जो पर्यावरण के माध्यम से पर्यावरण के विषय में और पर्यावरण के लिए प्रदान की जाती है। शिक्षा व्यक्ति को पर्यावरण से अनुकूल करना ही नहीं सिखाती है बल्कि उसे पर्यावरण को अपने अनुकूल परिवर्तित करने के लिए भी प्रशिक्षित करती है। यह व्यक्ति को पर्यावरण पर नियंत्रण रखने की क्षमता प्रदान करती है। पर्यावरण शिक्षा व्यक्ति को पर्यावरण समस्याओं से संबंधित ज्ञान तथा मूल्यों के विकास द्वारा जीवन के लिए तैयार करती है। पर्यावरणीय शिक्षा एकीकृत व्यावहारिक लचीली क्रिया आधारित स्थान तथा आवश्यकता के अनुकूल होनी चाहिए।

मानव का पर्यावरण प्राकृतिक तथा मानव निर्मित सुंदर तथा शिक्षाप्रद है। जब बालक पशु पक्षियों को देख कर उनकी ओर आकृष्ट होता है तब उनके संबंध में परिचित करना वातावरण के माध्यम से शिक्षा प्रदान करना है। यह शिक्षा कक्षा में दी गई शिक्षा से अधिक महत्वपूर्ण है। इसलिए पर्यावरण के माध्यम से व्यक्ति को शिक्षण अधिगम पर्याप्त मात्रा में प्रदान किया जाता है।

मानव अपने अस्तित्व और समृद्धि के लिए प्रतिदिन पर्यावरण के संपर्क में कार्य करता है। वह किसी भी परिस्थिति में इससे बच नहीं सकता है वह परिवार में जन्म लेता है और उसी से उसका पालन पोषण होता है। परिवार मनुष्य के लिए प्राथमिक समूह है। जब शैशवावस्था से बाल्यावस्था में आता है तब वह पड़ोस, समुदाय आदि के संपर्क में आता है। वह इनके क्रियाकलापों में भाग लेता है इस प्रकार वह वातावरण के विषय में सीखता है।

1. जॉन डीवी के अनुसार- समस्त शिक्षा व्यक्ति द्वारा प्रजाति की सामाजिक चेतना में भाग लेने से प्रारंभ होती है।
2. टॉमसन के अनुसार-पर्यावरण ही शिक्षक है और शिक्षा का काम छात्र को उसके अनुकूल बनाना है
3. एनसाइक्लोपीडिया ऑफ एजुकेशनल रिसर्च के अनुसार- पर्यावरण शिक्षा अनेक विषयी होनी चाहिए।जिसमें जैविक, सामाजिक, राजनीतिक, आर्थिक और मानवीय संसाधनों से सामग्री प्राप्त होती हो। इस शिक्षा के लिए संप्रत्ययात्मक विधि सर्वोत्तम है।
4. स्वान महोदय के अनुसार- पर्यावरण शिक्षा की अवधारणा यह है कि ऐसी सद् नागरिकता का विकास किया जाएं, जो अपने पर्यावरण एवं उससे जुड़ी हुई समस्याओं से परिचित हो। इन समस्याओं के समाधान के लिए अपनी भागीदारी के अवसरों की जानकारी रखता हो। और इसके लिए आप प्रेरित भी हो दूसरे शब्दों में गुणवत्ता के प्रति चिंता के सुविज्ञ दृष्टिकोण का विकास करना ही पर्यावरण शिक्षा है।
5. श्री सुखदेव प्रसाद के अनुसार- पर्यावरण का तात्पर्य उस समूची भौतिक एवं जैविक व्यवस्था से हैं। जिसमें जीवधारी रहते हैं, बढ़ते पनपते हैं और अपने स्वाभाविक प्रवृत्तियों का विकास करते हैं।
6. बोशिंग महोदय के अनुसार- शिक्षा का कार्य व्यक्ति का पर्यावरण से सीमा तो सामान्य से स्थापित करना है जिससे व्यक्ति और समाज को स्थाई संतोष मिल सकें।

7. नेहरू फाउंडेशन फॉर डेवलपमेंट अहमदाबाद के अनुसार- पर्यावरणीय शिक्षा एक प्रक्रिया है जिसका उद्देश्य विश्व में ऐसी जनसंख्या का विकास करना है जो संपूर्ण पर्यावरण इसकी समस्याओं के प्रति सहज हो एवं उस से संबंध रखती हो तो सामूहिक रूप से इसका ध्यान रखें अभिप्रवृतियां रखें, अभिप्रेरणा रखें तथा इनके उन्नयन हेतु व्यक्तिगत तथा सामूहिक रूप से कार्य कर इससे संबंधित समस्याओं के समाधान तथा नई समस्याओं को उत्पन्न होने से रोकने के प्रयास करें।

अत एव पर्यावरणीय शिक्षा एक सामान्य शिक्षा नहीं अपितु पर्यावरण की समस्याओं, उनके निराकरण व संबंधित जानकारी प्राप्त करने की शिक्षा है।

पर्यावरण शिक्षा के उद्देश्य

1. पर्यावरणीय शिक्षा का उद्देश्य आधुनिक विकास एवं पर्यावरण के मध्य ऐसा समीकरण स्थापित करना है जो मानव को विनाश से बचा सके।
2. इसका उद्देश्य मनुष्य तथा प्रकृति के बीच सीधे ओर आत्मीय संवाद की स्थिति बनाना है जिससे एक ओर तो सृजनात्मकता के नए आयाम और द्वार सामने आते हैं तथा दूसरी और मनुष्य की कल्पनाओं और संवेदनाओं को नए-नए ऊंचे क्षितिज प्राप्त होते हैं।
3. वास्तविक जीवन की पर्यावरणीय समस्याओं को समझाने में भागीदारी करने की दृष्टि कौशल तथा योग्यता का विकास करना ऐसी समस्याओं का ज्ञान और जानकारी प्राप्त करने में सहयोग देना भी पर्यावरण की शिक्षा का उद्देश्य हैं। पर्यावरण की समस्याएं मनुष्य द्वारा उत्पन्न हो गई हैं जिनका विवेक तथा साहस से उनका समाधान करना होगा।इसके लिए सही दृष्टिकोण सही कौशल और समस्याएं सुलझाने की लगन का होना आवश्यक है तथा पर्यावरण शिक्षा इस प्रकार के ज्ञान और कौशल का संचरण करती है
4. पर्यावरण के विश्व के विभिन्न भाग होने की भावना को बालकों में विकसित करना भी पर्यावरण शिक्षा का उद्देश्य हैं। प्रकृति से सहकार की यह भावना ही मानव को उचित दिशा में आगे बढ़ा पाएंगीतथा नई नागरिक समाज की स्थापना हो पाएगी फिर न तो प्रदूषण होगा और ने प्राकृतिक संसाधनों का अति शोषण एवं विनाश ही होगा इसलिए पर्यावरण शिक्षा का उद्देश्य पर्यावरण तथा मानव में आत्मीय संबंधों की स्थापना करना है।

पर्यावरण शिक्षा मानव मूल्यों तथा गुणों के विकास का कार्य भी संपन्न करती है। पर्यावरण शिक्षा मुख्यतः सहानुभूति अहिंसा सह अस्तित्व और वसुधैव कुटुंबकम सहयोग तथा परस्पर आत्मनिर्भरता की शिक्षा देती है। अतः इन गुणों का विकास को भी पर्यावरण शिक्षा के क्षेत्र के अंतर्गत रखा जाता है।पर्यावरण मनुष्य के जन स्वास्थ्य को प्रभावित करता है। इसलिए पर्यावरण शिक्षा के क्षेत्र में जन स्वास्थ्य उसकी समस्याएं उसकी सुरक्षा तथा उपायों आदि को भी शामिल किया जाता है आज राष्ट्रीय तथा अंतरराष्ट्रीय स्तर पर अनेक संस्थाएं पर्यावरण से संबंधित कार्य कर रही है।

निष्कर्ष

पर्यावरण शिक्षा वह शिक्षा है, जो हमें अपने संरक्षण,गुणवत्ता, संवर्धन और सुधार की व्याख्या करती है। मनुष्य प्रकृति से सीखे, प्रकृति के अनुसार अपने आपको ढाले और प्रकृति को प्रदूषित करने के बजाए उसका संरक्षण करें। यही संचेतना हमें पर्यावरण शिक्षा से मिलती है।यह सिखाने के सुनियोजित प्रयास की ओर संकेत करती है कि किस प्रकार मनुष्य चिरस्थायी अस्तित्व के लिए स्वाभाविक वातावरण की क्रियाओं और, विशेषतः अपने व्यवहार और पारिस्थितिक तंत्र में सामंजस्य स्थापित कर सकता है। पर्यावरण शिक्षा अधिगम की एक प्रक्रिया है जो पर्यावरण व इससे जुड़ी चुनौतियों के सम्बन्ध में लोगों की जानकारी और जागरूकता को बढ़ाती हैं, चुनौतियों का सामना करने के लिए आवश्यक कुशलताओं व प्रवीणता को विकसित करती हैं और सुविज्ञ निर्णय तथा ज़िम्मेदारी पूर्ण कदम बढ़ाने के लिए इस ओर प्रवृत्ति, प्रेरणा व प्रतिबद्धता का प्रोत्साहन करती हैं।

सन्दर्भ ग्रन्थ सूची

1. प्रो. सन्तोष मित्तल, 21 वीं सदी में पर्यावरण एवं पर्यावरण शिक्षा, नवचेतना पब्लिकेशन्स जयपुर राजस्थान।
2. प्रो. एच पी सिंह, पर्यावरण शिक्षण, राधा प्रकाशन मन्दिर आगरा उत्तरप्रदेश।
3. डॉ. एम के गोयल, पर्यावरण शिक्षा, विनोद पुस्तक मन्दिर आगरा उत्तरप्रदेश।
4. पर्यावरण अध्ययन 1, राज्य शैक्षिक अनुसन्धान और प्रशिक्षण परिषद भोपाल।

समाज में योगा के महत्त्व का समाजशास्त्रीय विश्लेषण

डॉ. नीरू शर्मा

व्याख्याता, कमला महाविद्यालय, धौलपुर, राजस्थान, भारत

प्रिचय: योग तत्वतः बहुत सूक्ष्म विज्ञान पर आधारित एक आध्यात्मिक विषय है जो मन एवं शरीर के बीच सामंजस्य स्थापित करने पर ध्यान देता है। यह स्वस्थ जीवन यापन की कला एवं विज्ञान है। योग शब्द संस्कृत की युज धातु से बना है जिसका अर्थ जुड़ना या एक जुट होना या शामिल होना है। योग से जुडे ग्रंथों के अनुसार योग करने से व्यक्ति की चेतना ब्रह्मांड की चेतना से जुड़ जाती है। जो मन एवं शरीर, मानव एवं प्रकृति के बीच परिपूर्ण सामंजस्य का घोतक है। आधुनिक वैज्ञानिकों के अनुसार ब्रह्मांड की हर चीज उसी परिमाण नभ की अभिव्यक्ति मात्र है। जो भी अस्तित्व की इस एकता को महसूस कर लेता है। उसे योग में स्थित कहा जाता है। उसे योगी के रूप में पुकारा जाता है। जिसने मुक्त अवस्था प्राप्त कर ली है, उसे मुक्ति निर्वाण या मोक्ष कहा जाता है।

योग का अभिप्राय एक आंतरिक विज्ञान से भी है, जिसमे कई तरह की विधि शामिल होती हैं। जिसके माध्यम से मानव इस एकता को साकार कर सकता है। और अपनी नीयत को अपने वश में कर सकता है। चूंकि योग को बडे पैमाने पर सिंधु - सरस्वती घाटी सभ्यता जिसका इतिहास **2700** ईसा पूर्व से है, के अमर सांस्कृतिक परिणाम के रूप में बडे पैमाने पर माना जाता है, इसलिए इसने शाबित किया है कि यह मानवता के भौतिक एवं आध्यात्मिक दोनों तरह के उत्थान को संभव बनाता है। बुनियादी मानवीय मूल्य योग साधना की पहचान है।

योग का संक्षिप्त इतिहास: ऐसा माना जाता है कि जब से सभ्यता शुरू हुई है तभी से योग शुरू किया जा रहा है। योग के विज्ञान की उत्पत्ति हजारों साल पहले हुई थी। पहले धर्मो या आस्था के जन्म लेने से काफी पहले हुई थी। योग विद्या में शिव को पहले योगी या आदि योगी तथा पहले गुरू के रूप में माना जाता है। कई हजार वर्ष पहले, हिमालय में क्रांति सरोवर झील के तटों पर आदि योगी ने अपने प्रबुद्ध ज्ञान को अपने प्रसिद्ध शप्तऋषि को प्रदान किया। शप्तऋषियों ने योग के इस ताकतवर विज्ञान को एशिया मध्यपूर्व उत्तरीय अफ्रीका एवं दक्षिण अमरीका सहित विश्व के भिन्न-भिन्न भागों में पहुंचाया।

वैदिक काल के दौरान सूर्य को सबसे अधिक महत्त्व दिया गया। हो सकता है कि इस प्रभाव की वजह से आागे चलकर, 'सूर्य नमस्कार' की प्रथा का आविष्कार किया गया होगा। प्राणायाम दैनिक संस्कार का हिस्सा था। तथा यह समर्पण के लिये किया जाता था। हालांकि पूर्व वैदिक काल में योग किया जाता था, महान संत महर्षि पतंजलि ने अपने योग सूत्रों के माध्यम से उस समय विद्यमान योग की प्रथाओं, इसके आशय एवं इससे संबंधित ज्ञान को व्यवस्थित एवं कूटबद्ध किया। पतंजलि के बाद, अनेक ऋषियों एवं योगाचार्यों ने अच्छी तरह प्रलेखित अपनी प्रथाओं एवं साहित्य के माध्यम से योग के परीक्षण एवं विकास में काफी योगदान दिया।

पूर्व वैदिक काल (**2700**ईसा पूर्व) में एवं इसके बाद पतंजलि काल तक योग की मौजूदगी के ऐतिहासिक साक्ष्य देखे गये। मुख्य स्रोत, जिन से हम इस अवधि के दौरान योग की प्रथाओं तथा संबंधित साहित्य के बारे में सूचना प्राप्त करते हैं। वेदों (**4**) उपनिषदों (**18**) स्मृतियों, बौद्धिक धर्म, जैन धर्म, पाणिनी, महाकाव्यों (**2**) के उपदेशों, पुराणों (**11**) आदि में उपलब्ध होता है।

मुख्य लेख: मन्त्र योग

'मंत्र' का समान्य अर्थ है- 'मननात् त्रायते इति मंत्रः'। मन को त्राय (पार कराने वाला) मंत्र ही है। मंत्र योग का सम्बन्ध मन से है, मन को इस प्रकार परिभाषित किया है- मनन इति मनः। जो मनन, चिन्तन करता है वही मन है। मन की चंचलता का निरोध मंत्र के द्वारा करना मंत्र योग है। मंत्र योग के बारे में योगतत्वोपनिषद में वर्णन इस प्रकार है-

योग सेवन्ते साधकाधमाः।

(अल्पबुद्धि साधक मंत्रयोग से सेवा करता है अर्थात मंत्रयोग अनसाधकों के लिए है जो अल्पबुद्धि है।)

मंत्र से ध्वनि तरंगें पैदा होती है मंत्र शरीर और मन दोनों पर प्रभाव डालता है। मंत्र में साधक जप का प्रयोग करता है मंत्र जप में तीन घटकों का काफी महत्व है वे घटक-उच्चारण, लय व ताल हैं। तीनों का सही अनुपात मंत्र शक्ति को बढ़ा देता है। मंत्रजप मुख्यरूप से चार प्रकार से किया जाता है।

(1) वाचिक **(2)** मानसिक **(3)** उपांशु **(4)** अणपा।

हठयोग

हठ का शाब्दिक अर्थ हठपूर्वक किसी कार्य करने से लिया जाता है। हठ प्रदीपिका पुस्तक में हठ का अर्थ इस प्रकार दिया है-

हकारेणोच्यते सूर्यष्ठकार चन्द्र उच्यते।
सूर्या चन्द्रमसो र्योगाद्धठयोगोऽभिधीयते॥

ह का अर्थ सूर्य तथ ठ का अर्थ चन्द्र बताया गया है। सूर्य और चन्द्र की समान अवस्था हठयोग है। शरीर में कई हजार नाड़ियाँ है उनमें तीन प्रमुख नाड़ियों का वर्णन है, वे इस प्रकार हैं। सूर्यनाड़ी अर्थात पिंगला जो दाहिने स्वर का प्रतीक है। चन्द्रनाड़ी अर्थात इड़ा जो बायें स्वर का प्रतीक है। इन दोनों के बीच तीसरी नाड़ी सुषुम्ना है। इस प्रकार हठयोग वह क्रिया है जिसमें पिंगला और इड़ा नाड़ी के सहारे प्राण को सुषुम्ना नाड़ी में प्रवेश कराकर ब्रहमरन्ध्र में समाधिस्थ किया जाता है। हठ प्रदीपिका में हठयोग के चार अंगों का वर्णन है- आसन, प्राणायाम, मुद्रा और बन्ध तथा नादानुसधान। घेरण्डसंहिता में सात अंग- षटकर्म, आसन, मुद्राबन्ध, प्राणायाम, ध्यान, समाधि जबकि योगतत्वोपनिषद में आठ अंगों का वर्णन है- यम, नियम, आसन, प्राणायाम, प्रत्याहार, धारणा, ध्यान, समाधि

लययोग

चित्त का अपने स्वरूप विलीन होना या चित्त की निरूद्ध अवस्था लययोग के अन्तर्गत आती है। साधक के चित्त् में जब चलते, बैठते, सोते और भोजन करते समय हर समय ब्रह्म का ध्यान रहे इसी को लययोग कहते हैं। योगत्वोपनिषद में इस प्रकार वर्णन है-

गच्छस्तिष्ठन स्वपन भुंजन् ध्यायेन्त्रिष्कलमीश्वरम् स एव लययोगः स्यात **(22-23)**

राजयोग

राजयोग सभी योगों का राजा कहलाया जाता है क्योंकि इसमें प्रत्येक प्रकार के योग की कुछ न कुछ सामग्री अवश्य मिल जाती है। राजयोग महर्षि पतंजलि द्वारा रचित अष्टांग योग का वर्णन आता है। राजयोग का विषय चित्तवृत्तियों का निरोध करना है। महर्षि पतंजलि के अनुसार समाहित चित्त वालों के लिए अभ्यास और वैराग्य तथा विक्षिप्त चित्त वालों के लिए क्रियायोग का सहारा लेकर आगे बढ़ने का रास्ता सुझाया है। इन साधनों का उपयोग करके साधक के क्लेशों का नाश होता है, चित्तप्रसन्न होकर ज्ञान का प्रकाश फैलता है और विवेकख्याति प्राप्त होती हैै।

योगाडांनुष्ठानाद शुद्धिक्षये ज्ञानदीप्तिरा विवेक ख्यातेः **(2/28)**

राजयोग के अन्तर्गत महिर्ष पतंजलि ने अष्टांग को इस प्रकार बताया है-

यमनियमासनप्राणायामप्रत्याहारधारणाध्यानसमाधयोऽष्टांगानि।

योग के आठ अंगों में प्रथम पाँच बहिरंग तथा अन्य तीन अन्तरंग में आते हैं। उपर्युक्त चार पकार के अतिरिक्त गीता में दो प्रकार के योगों का वर्णन मिलता है-

छममतनः चार पकार के अतिरिक्त गीता में दो प्रकार के योगों का वर्णन मिलता है-

(१) ज्ञानयोग

(२) कर्मयोग

ज्ञानयोग, सांख्ययोग से सम्बन्ध रखता है। पुरुष प्रकृति के बन्धनों से मुक्त होना ही ज्ञान योग है। जब तक शारीरिक स्वास्थ्य बरकरार है तब तक मन स्पष्ट और केन्द्रित रहता है। शारीरिक स्वास्थ्य, मानसिक स्वास्थ्य, अध्यात्मिक स्वास्थ्य, स्वंम का अहसास, सामाजिक स्वास्थ्य,। नियमित रुप से योग का अभ्यास करने के कारण योग एक कला है जो हमारे शरीर मन और आत्मा को एक साथ जोड़ता है और हमें मजबूत और शान्ति पूर्ण बनाता है। योग आवश्यक है योग हमें फिट रखता है तनाव को कम करने में मदद करता है योग का अभ्यास करके आप निम्न बिन्दुबओं पर लाभ प्राप्त कर सकते है।

आंतरिक शांति

योग आतंरिक शांति प्राप्त करने और तनाव तथा अन्य समस्याओं के खिलाफ लड़ाई में मदद करता है। योग एक व्यक्ति में शांति के स्तर को बड़ाता है और उसके आत्म विस्वास को और अधिक बढ़ाने तथा उसे खुश रहने में मदद करता है।

स्वास्थ्य

एक स्वस्थ व्यक्ति एक अस्वस्थव्यक्ति की तुलना में अधिक काम कर सकता है। आजकल जीवन बहुत तनाव पुर्ण है और हमारे आसपास बहुत प्रदूषण है। यह कई स्वास्थ्य समस्याओं का कारण है। सिर्फ **10-20** मिनट का योग हर दिन आपके स्वास्थ्य को अच्छा रहने में मदद कर सकता है। बेहतर स्वास्थ्य का मतलब बेहतर जीवन है।

सक्रियता

आजकल लोग आलसी, थके हुऐ या नींद की कमी महसूस करते हैं जिसके कारण वे अपने जीवन में अधिकतर मौज मस्ती से चूक जाते हैं और अपने काम को सही ढगं से पूरा करने में सक्षम नहीं है। सक्रियता होने के नाते आप अपने आस पास होने वाली चीजों के बारे में अधिक जागरूक रहते हैं। आज दुनिया भर में इसका अभ्यास किया जा रहा है। लोगों ने योग के गुणों के बारे में सीखा है और इसे व्यायाम और ध्यान के रूप

में स्वीकार किया है। मूल रूप से योग न केवल व्यायाम का एक रूप है बल्कि यह स्वस्थ, खुशहाल और शांतिपूर्ण तरीके से जीने का एक प्राचीन ज्ञान है। यह आंतरिक शांति और आत्मीय ज्ञान प्राप्त करने में मदद करता है। लोगों को आम तौर पर लगता है कि योग व्यायाम का एक रूप है जिसमें शरीर के हिस्सों को हिलान-डुलाना शामिल है लेकिन योग व्यायाम से बढ़कर है। योग मानसिक, आध्यात्मिक और शारीरिक पथ के माध्यम से जीवन जीने की कला है। यह स्थिरता प्राप्त करने और आंतरिक आत्मा की चेतना में ध्यान लगाने में सहायता करता है। मन, भावनाओं और शारीरिक आवश्यकताओं के बारे में ज्यादा ना सोचने और दिन-प्रतिदिन जीवन की चुनौतियों का सामना कैसे करें यह भी सीखने में मदद करता है। योग शरीर, मन और ऊर्जा के स्तर पर काम करता है। योग का नियमित अभ्यास शरीर में सकारात्मक बदलाव लाते हैं जिनमें मजबूत मांसपेशियां, लचीलापन, धैर्य और अच्छा स्वास्थ्य शामिल है। हमें योग के प्रति धैर्य रखना चाहिए। आम तौर पर लोगों को वजन कम करने के लिए दवा, स्टेरॉयड या सर्जरी के उपयोग की तरह शॉर्टकट पसंद हैं जो स्पष्ट रूप से समय के साथ शरीर पर खराब प्रभाव डालते हैं। योग आसन शक्ति, शरीर में लचीलेपन और आत्मविश्वास विकसित करने के लिए जाना जाता है।

योग के फायदे

मांसपेशियों के लचीलेपन में सुधार शरीर के आसन और एलाइनमेंट को ठीक करता है। बेहतर पाचन तंत्र प्रदान करता है। आंतरिक अंग मजबूत करता है। अस्थमा का इलाज करता है मधुमेह का इलाज करता है। दिल संबंधी समस्याओं का इलाज करने में मदद करता है। त्वचा के चमकने में मदद करता है। शक्ति और सहनशक्ति को बढ़ावा देता है। एकाग्रता में सुधार मन और विचार नियंत्रण में मदद करता है। चिंता, तनाव और अवसाद पर काबू पाने के लिए मन शांत रखता है तनाव कम करने में मदद करता है। रक्त परिसंचरण और मांसपेशियों के विश्राम में मदद करता है। वज़न घटाना चोट से संरक्षण करता है। ये सब योग के लाभ हैं। योग स्वास्थ्य और आत्म-चिकित्सा के प्रति आपके प्राकृतिक प्रवृत्ति पर ध्यान केंद्रित करता है।

योग सत्र में मुख्य रूप से व्यायाम, ध्यान और योग आसन शामिल होते हैं जो विभिन्न मांसपेशियों को मजबूत करते हैं। दवाओं, जो हमारे मानसिक और शारीरिक स्वास्थ्य के लिए हानिकारक है, से बचने का यह एक अच्छा विकल्प है। योग अभ्यास करने के मुख्य लाभों में से एक यह है कि यह तनाव कम करने में मदद करता है। तनाव का होना इन दिनों एक आम बात है। जिससे शरीर और मन पर विनाशकारी प्रभाव पड़ता है। तनाव के कारण लोगों को सोते समय दर्द, गर्दन का दर्द, पीठ दर्द, सिरदर्द, तेजी से दिल का धड़कना, हथेलियों में पसीने आना, असंतोष, क्रोध, अनिद्रा और ध्यान केंद्रित करने में असमर्थता जैसी गंभीर समस्याएं पैदा होती हैं। समय गुज़रने के साथ इन समस्याओं का इलाज करने में योग वास्तव में प्रभावी है। यह एक व्यक्ति को ध्यान और साँस लेने के व्यायाम से तनाव कम करने में मदद करता है और एक व्यक्ति के मानसिक कल्याण में सुधार करता है। नियमित अभ्यास मानसिक स्पष्टता और शांति बनाता है जिससे मन को आराम मिलता है।

निष्कर्ष

योग एक बहुत ही उपयोगी अभ्यास है जिसे करना बहुत आसान है और यह कुछ गंभीर स्वास्थ्य समस्याओं, जो आज के जीवन शैली में सामान्य हैं, से भी छुटकारा पाने में मदद करता है।

मानव मूल्यः एक विश्लेषण

डॉ प्रतिभा राव

सहआचार्य, रसायन शास्त्र, सेठ मुरलीधर मानसिंहका राजकीय कन्या महाविद्यालय, भीलवाडा, राजस्थान, भारत

सारांश

आज मानव समाज एवं संस्कृति के समक्ष गिरते मानवीय मूल्यों के कारण अनेंको समस्याएं उत्पन्न हो गई है। समाज में संकट का कारण मानवीय मूल्यों की उपेक्षा ही है। मानव जीवन के नैतिक नियम, आचरण संबंधी नियम, जीवो पर दया, वसुधैव कुटुंबकम की अवधारणा, विश्व शांति, सत्य आशावाद अनेंकों परिकल्पनाए वेदों में है जो मानव को एक उच्च जीवन जीने की ओर प्रेरित करती है।

मुख्य शब्दः मानव मूल्य, पुरूषार्थ चतुष्टय, विश्व शांति, मानव कल्याण।

प्रस्तावना

मनु ने वेदों की महत्ता को प्रदर्शित करते हुए कहा है, "सर्वज्ञानमयों हिसः" जिसमें ज्ञान विज्ञान की समस्त संपदा निहित है।

मानव मूल्य एक ऐसी आचरण संहिता है जिन्हें संस्कारों एवं पर्यावरण के माध्यम से अपनाकर व्यक्ति अपने निश्चित लक्ष्यों की प्राप्ति हेतु एक विशिष्ट जीवन पद्धति का निर्माण करता है। जीवन मूल्यों का अभिप्राय व्यक्ति को कर्तव्यों, सत्कर्म एवं सद्गुणों की ओर ले जाना है तथा उसकी आकांक्षाओं रुचियों आवश्यकताओं के मध्य संतुलन बनाकर मानवीय व्यवहार का नियमन एवं नियंत्रण करना है।

प्रत्येक मूल्य प्रणाली का निर्माण विभिन्न प्रकार के मूल्यों यथा सामाजिक, आर्थिक, धार्मिक, राजनैतिक मूल्य आदि से होता है, किंतु किसी भी मूल्य प्रणाली में सभी प्रकार के मूल्य समस्तरीय नही होते उनमें एक महत्त्व अनुक्रम अथवा वरीयता क्रम होता है। मूल्य संबंधी मतभेद प्रायः मूल्यों की स्वीकृति-अस्वीकृति से उतने संबंधित नही होते जितने उनके वरीयता क्रम से संबंधित होते है और यह मतभेद अंततः जीवन दर्शन संबंधी मतभेद पर आधृत होते है।

मानवीय मूल्यों का कोई भी विवरण व व्याख्या अंततः मानव स्वरूप की व्याख्या पर आश्रित होता है। मानव के यथार्थ स्वरूप की जितनी सम्यक व्याख्या होगी मूल्य प्रणाली भी उतनी ही उत्कृष्ट व सर्वांगीण होगी।

भारतीय दर्शन के अनुसार मानव न केवल शरीर, न केवल मन, न केवल प्राण, न केवल बुद्धि है वरन यह आत्मन भी है, इतना ही नही तत्वतः वह आत्मन ही है। शरीर मन प्राण बुद्धि आदि उसी की शक्ति से संचालित है इसलिए भारतीय मूल्य प्रणाली में जैविकीय मूल्यों को मनोवैज्ञानिक मूल्यों से, मनोवैज्ञानिक मूल्यों को बौद्धिक मूल्यों से, और बौद्धिक मूल्यों को आध्यात्मिक मूल्यों से निम्न स्तरीय माना जाता है। इसलिए मोक्ष को सर्वोच्च मूल्य घोषित किया गया है वस्तुतः आत्मा को आधार मानकर चलने वाली मूल्य प्रणाली ही मानव कल्याण व विश्व शांति की क्षमता रखती है भारतीय मूल्य प्रणाली का उद्देश्य मनुष्य अर्थात जैविक सत्ता को नर अर्थात नैतिक सत्ता के स्तर तक उठाना ही नही है वरन सर्वोच्च लक्ष्य नर को पुरूष (Spiritual being) के रूप में आत्मोपलब्धि कराना है।

भारतीय मनीषियों ने मूल्यों का वरीयता क्रम स्वैच्छिक आधार पर निर्धारित नही किया था वह मानव स्वरूप की गहन गंभीर व्याख्या पर वैयक्तिक एवं सामाजिक जीवन की आवश्यकताओं के बुद्धि संगत अनुक्रम पर आधारित था ऐसा ना होता तो "अर्थ" को कदापि पुरूषार्थ की श्रेणी में न रखा जाता। अर्थ को साध्य न मानकर कामनाओं की तुष्टि का साधन माना गया इतना ही नही इस साधन की शुद्धता के लिए धन उपार्जन पर धर्म अथवा नैतिकता का अंकुश लगाया गया अर्थात उचित तरीके से अर्जित धन को ही वैध घोषित किया गया, धन और उसके उपार्जन को धर्माधीन कर धर्म की श्रेष्ठता स्वीकार की गई है।

कार्ल मार्क्स के द्वन्द्वात्मक भौतिकवाद ने आर्थिक मूल्यों की सर्वोच्चता की शिक्षा देकर हमारे पारंपरिक आध्यात्मिक जीवन दर्शन को भौतिकवादी जीवन दर्शन से स्थानापन्न कर हमें अर्थ लोलुप बना दिया। मार्क्स की विचारधारा का ऐसा व्यापक प्रभाव पडा कि आर्थिक विकास को ही संपूर्ण विकास का मापदंड माना जाने लगा और आज देशों को इसी आधार पर विकसित, विकासशील व अविकसित आदि श्रेणियों में रखा जाता है विकास की यह परिभाषा क्या वस्तुतः विश्व शांति या मानव कल्याण का आधार बन सकती है? कदापि नही, वस्तुतः आंतरिक मानवीय विकास के बिना बाहय विकास न केवल निरर्थक है अपितु घातक भी है क्योंकि ऐसी स्थिति में साध्य (मानव) को साधन बना दिया है।

भारतीय परंपरा में मूल्यों की कल्पना पुरूषार्थ के रूप में की गई है। अध्यात्म प्रधान जीवन शैली के महत्त्व के कारण यहां साधन तथा साध्य मूल्यों को वर्गीकरण भी आत्म तुष्टि के आधार पर किया गया है। पुरूषार्थ चतुष्टय में काम तथा मोक्ष को साध्य मूल्य माना जाता है। काम में महत्त्व को स्वीकार करते हुए उसे धर्म अर्थात नीति या नियम से संयमित होने पर ही पुरूषार्थ की श्रेणी में रखा जाता हैं। मोक्ष की गणना सर्वोच्च मूल्य के रूप में की जाती है मोक्ष को सर्वोच्च मूल्य मानना भारतीयों के आध्यात्मिक दृष्टिकोण का प्रतिफल है अर्थ और धर्म साधन मूल्य कहे जाते हैं

क्योंकि वे साध्य मूल की प्राप्ति के उपकरण है। व्यावहारिक दृष्टि से धर्म, अर्थ, काम इन तीनों पुरूषार्थो के सम्यक और उचित सेवन को उत्तम पुरूष के लक्षण मानते हुए इनमें से एक पुरूषार्थ में आसक्त व्यक्ति को जघन्य, दो पुरूषार्थों में आसक्ति रखने वाले को मध्यम कोटि का कहा गया है तीनों पुरूषार्थों के सम्यक आचरण को सफल एवं समग्र जीवन दृष्टि स्वीकार किया गया है।

भारतीय पारंपरिक मूल्यों को आध्यात्मिक, धार्मिक, नैतिक, सामाजिक तथा राजनैतिक मूल्यों में पृथक पृथक वर्गीकृत करना असंभव है। मूल्य प्रणाली की यह विशेषता भी भारतीयों की समन्वयात्मक समग्र जीवन दृष्टि का परिणाम है। ऋषियों ने बदलती हुई जीवन परिस्थितियों के साथ जीवन मूल्यों का पुनः पुनः विश्लेषण एवं विवेचन कर नियमों में परिवर्तन करते हुए अपवादों का उल्लेख किया छांदोग्योपनिषद **(1/10)** के उषस्ति का महावत में उच्छिष्ट उंङद खाना तथा महाभारत **(12/141)** में ऋषि विश्वामित्र का कुत्ते की जांघ का मांस खाने का आग्रह आपद् धर्म के उदाहरण हैं। इन उदाहरणों से यह ध्यनित होता है कि मृत्यु की अपेक्षा जीवन श्रेष्ठ है अतः येन केन प्रकारेण जीवन की रक्षा की जानी चाहिए जीवित रहने पर ही मनुष्य पुनः धर्म आचरण कर कल्याण को प्राप्त कर सकता है अतः धर्म अधर्म का निर्णय विवेक द्वारा किया जाना चाहिए। इसी प्रकार सत्य वचन को सनातन मूल्य मानते हुए आत्म रक्षार्थ अथवा अन्य के प्राण रक्षार्थ असत्य वचन को अनुचित नही प्रत्युत् धर्म कहा गया है। आपद् धर्म के कारण शाश्वत मूल्यों की अवहेलना न होने लगे इसलिए इनके उल्लंघन होने पर प्रायश्चित की व्यवस्था स्वीकार की गई है।

निष्कर्ष

वैदिक काल में मानव मानवीय मूल्यों के प्रति सदैव सजग एवं जागरूक रहा है उसका जीवन अनुशासन पूर्ण एवं संयमित था तथा ईश्वर से "असतो मा सद्गमय तमसो मा ज्योतिर्गमय" जैसे श्रेष्ठ मानवीय मूल्यों की प्रार्थना करता है।

भारत की यह आध्यात्म प्रधान मूल्य प्रणाली "सर्वे भवंतु सुखिनः" तथा "वसुधैव कुटुंबकम्" का संदेश प्रदान करते हुए विश्व शांति की स्थापना की सतत् प्रेरणा देती है।

संदर्भ ग्रन्थ सूची

1. मनुस्मृति - **2/3**
2. राधाकृष्णन, भारतीय दर्शन, भाग-**1** पृष्ठ **36**
3. एम हीरियना, भारतीय दर्शन की रूपरेखा, पृष्ठ **100**
4. कठोपनिषद: पृष्ठ **132**
5. छांदोग्योपनिषद: **1/10**
6. महाभारत **12/141**
7. बृहदारण्यकोपनिषद- प्रथम अध्याय

योग और स्वास्थ्य में संस्कृत की भूमिका

श्रीमती राजकुमारी

सह आचार्य, संस्कृत विभाग, एम.एस.जे.कॉलेज, भरतपुर, राजस्थान, भारत

सारांश

"योग", सार्वभौमिक एवं सार्वजनीन महत्व की ऋषि-मुनियों की एक अनमोल विरासत है। कर्म करने में सबसे बड़ी कुशलता (चातुर्य) ही योग है। योग का अर्थ है-जुड़ना। यानि आत्मा का परमात्मा से मिलन ही योग कहलाता है। ज्ञानयोग, कर्मयोग व भक्तियोग यह योग की त्रिवेणी है। योग विज्ञान सम्मत जीवन शैली का नाम है। प्रतिदिन योग करने से व्यक्ति के जीवन से रोग, चिन्ता, तनाव, मोटापा आदि समाप्त हो जाते हैं। तन और मन दोनों स्वस्थ रहते हैं। वह मानवमात्र के लिए वैज्ञानिकता और व्यावहारिकता से युक्त परम उपहार है। महर्षि पतंजलि-प्रदत्त योग की परिभाषा योगश्चित्तवृत्तिनिरोधः - यो.सू.-1/2 वहीं 'यमनियम ..... अष्टाअंगानि' - यो.सू.-2/29, योगाभ्यास के सहारे मानव अपने शारीरिक व मानसिक स्वास्थ्य को तो अक्षुण्ण रखता ही है, साथ ही परमात्मा की प्रकृति रूपी वाटिका से उसका गहन साहचर्य का जागरण प्रारम्भ होता है, जिससे व्यक्ति को शाश्वत व अनन्त आनन्द की प्राप्ति के साथ मानव द्वारा मानवत्व की गहराई में उतरने की योग एक ऋषियों द्वारा अनुसंधित वैज्ञानिक प्रणाली है। हम विश्व की सबसे प्राचीन संस्कृति के संवाहक हैं। यदि व्यक्ति ध्यान, आसन, प्राणायाम का नियमित अभ्यास करता है तो निःसन्देह हमारे ऋषियों ने 'निरोगमय राष्ट्र व विश्व' बनाने में अपनी महती भूमिका अदा की। यह सम्पूर्ण विश्व, योग, स्वास्थ्य व प्रकृति को अपनायेगा तभी मनुष्य सही मायने में ऋषियों के ऋण से उऋण होगा।

मुख्य शब्दः चिंता, मानसिक तनाव, मोटापा, धारणा, समाधि, ध्यान सांख्ययोग, प्राणायाम अन्तःकरण, आसन, हृदयरोग, आत्मतत्व, प्रकृति, कर्मयोग।

प्रस्तावना

"योग" मानवमात्र के लिए वैज्ञानिकता और व्यावहारिकता से युक्त परम उपहार है, जो किसी भी धर्म, सम्प्रदाय, मत, पन्थ और जाति के लिए समान रूप से ग्रहणीय और लाभप्रद है। जहाँ एक ओर ज्ञान की सर्वोच्च स्थिति का नाम योग है, वहीं उस स्थिति तक आरोहण कराने के साधन का नाम भी योग है। जहाँ महर्षि पतंजलि प्रदत्त योग की परिभाषा 'योगश्चित्तवृत्तिनिरोधः' - यो.सू.-1/2, (चित्त की वृत्तियों के निरोध को योग कहते है) प्रज्ञा की सर्वोच्च स्थिति की ओर संकेत करती है, वहीं 'यमनियमासनप्राणायामप्रत्याहारधारणध्यानसमाधयोष्टाअंगानि'- यो.सू.-2/29, सूत्र सर्वोच्च स्थिति तक पहुँचाने के साधन के रूप में योग को परिभाषित करता है।

योग से व्यक्ति के समूचे जीवन में सकारात्मक व गुणात्मक परिवर्तन होते हैं। योगाभ्यास के सहारे मानव अपने शारीरिक व मानसिक स्वास्थ्य को अक्षुण्ण रखता है। मानव जीवन स्वयं में छिपे दिव्य गुणों के प्राकट्य की दिव्य प्रयोगशाला है। इसकी प्रयोग पद्धति है योग। योग दिव्य जीवन शैली है। प्रकृति के साथ सामंजस्य की ऋषिप्रणीत विधा है। मानव द्वारा मानवत्व की गहराई में उतरने की योग एक ऋषियों द्वारा अनुसंधित वैज्ञानिक प्रणाली है, जो भारतीय संस्कृति की तेजस्विनी -ओजस्विनी-वर्चास्विनी चेतना से ओतप्रोत मनोभूमि में ही फलित होती है।

योगाभ्यास से जुड़ने वाले हर नर-नारी का जीवन न केवल रोग-शोक से मुक्त होता है, अपितु परमात्मा की प्रकृति रूपी वाटिका से उसका गहन साहचर्य का जागरण प्रारम्भ होता है। यदि एक वाक्य में कहा जाये, तो योग एक समग्र आध्यात्मिकता व आधिभौतिकता के उच्चतम बिन्दु पर पहुँचकर मानवमात्र को शाश्वत व अनन्त आनन्द की प्राप्ति कराता है। यद्यपि यह योग प्राचीनतम है, हमारे पतंजलि आदि ऋषियों ने विश्वबन्धुत्व की भावना स्वरूप प्राचीन योग-वाग्मय को खंगाला, परिशोधित किया और हमारे समक्ष प्रस्तुत किया। ऋषियों ने सदैव अपने हृदय में -

'वसुधैव कुटुम्बकम्' पंचतन्त्र - 5/38

यह योग सभी धर्मों, वर्गो एवं समूहों के लिए बहुत उपयोगी है चिकित्सा-जगत् में चाहे वह एलोपैथिक हो या आयुर्वेद, कोई ऐसी दवा नहीं बनायी जा सकी है, जो घृणा, द्वेष, नफरत, ईर्ष्या, क्रोध को कम कर सके, लेकिन यदि व्यक्ति ध्यान, प्राणायाम का अभ्यास नियमित रूप से करता है, तो उसके अन्दर व्याप्त इस प्रकार के नकारात्मक विचार सहज ही खत्म होंगे। योग का एक वैज्ञानिक, सार्वभौमिक, पंथनिरपेक्ष एवं सर्वहितकारी अभ्यासक्रम है, जो कि हर दृष्टिकोण से मानवमात्र के लिए अत्यन्त उपयोगी है। योग से न केवल अभ्यासी का शरीर, बल्कि उसके मन, विचार और चरित्र भी सन्तुलित और शुद्व होते हैं। इस विद्या का सम्यक् रूप से अभ्यास करने वाला व्यक्ति सदाचार, शांत व स्वस्थ-संवेदनशील जीवन जीता है। योग की एक विशेषता यह है कि इसमें योग और व्यायाम का अत्यन्त सुन्दर समायोजन किया गया है। इससे व्यक्ति न केवल रोग मुक्त होता है, बल्कि समाधि की भी प्राप्ति कर लेता है। हमारे ऋषियों का स्वप्न है कि:-

'सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामयाः'।

'योगः समाधिः' (योगसूत्र-व्यासभाष्य **1.1)** योग समाधि है, योग आत्मदर्शन आत्मसाक्षात्कार या आत्मबोध का आध्यात्मिक दर्शन है। योग जीवन-दर्शन है। योग जीवन-प्रबन्धन है। योग आत्मानुशासन है। योगमात्र शारीरिक व्यायाम नहीं अपितु सम्पूर्ण जीवन शैली है। योग चित्त को निर्मल व निर्बीज करने की आध्यात्मिक विद्या है। योग एक सम्पूर्ण चिकित्सा विज्ञान है। योग जीवन का विज्ञान है। योग व्यक्ति, समाज, राष्ट्र व विश्व की सम्पूर्ण समस्याओं का समाधान है।

ष्समत्वं योग उच्यतेष् (गीता **2.48)** अंधेरों को उजालों में, दुःख को सुख में प्रतिकूलता को अनुकूलता में व पराजय को विजय में, बदलने की शक्ति तुम्हारे भीतर है। रोगी देह को निरोगी बनाने की ऊर्जा तुम्हारे भीतर विद्यमान है, बिना विचलित हुये समभाव से जीवन में निरन्तर आगे बढ़ते रहना। एक दिन सफलता अवश्य मिलेगी, यही योग है। विषाद-योग से मुक्त होकर, तुम गीता के सांख्य, कर्म व ज्ञानयोग सहित अठारह **(18)** योगों में प्रवेश पाना चाहते हो, तो प्राणयोग का अभ्यास करना क्योकि प्राणयोग में सब योगों का संयोग है। गीता में कहा गया हैं-

'योगस्थ कुरू कर्मणि संगत्यक्त्वा धनंजय।
सिद्वयासिद्वयोः समो भूत्वा समत्वं योग उच्यते॥' गीता **2/48**

'योगश्चित्तवृत्तिनिरोधः' (योगसूत्र **1/2) -** असत्य, झूठ में, कल्पनाओं में, स्वप्नों में रहना मन को रुचिकर लगता है। मन या तो खोया होता है भूत की व्यथा में पीड़ा में, अतीत की स्मृतियों में अथवा भविष्य की चिन्ता में योग का अर्थ है - वर्तमान में जीना, जहाँ न ही व्यथा है और न ही चिन्ता वर्तमान में है सृजन, वर्तमान ही भूत को निर्मित करता है और वर्तमान ही भविष्य की आधारशिला तैयार करता है। भूत, भविष्यत् सत्ताविहीन हैं। सत्ता है केवल वर्तमान की वर्तमान में जीना, जीवन को उत्सव बनाना है मन के पार जाने से ही चेतन-आत्मा का अस्तित्व स्वरूप में आता है। अतः योग का अर्थ है - अपनी चेतना, केन्द्र या अस्तित्व से जुड़ना। स्व को पहचानना और अपने ही अन्तःकरण में निहित अन्तर्यामी परमात्मा को पहचानना। पिण्ड को ब्रह्माण्ड में और ब्रह्माण्ड को पिण्ड में देखना व पाना। मैं को संकीर्णता की परिधि से बाहर सर्वत्र विस्तृत कर देना। मैं सबमें हूँ और सब मुझमें हैं, इसी मैं का विस्तार है, योग।

'योगश्चित्तवृत्तिनिरोधः।' यो.सू. **1/2**

जो यम-नियम-आसन-प्राणायाम-प्रत्याहार-धारणा-ध्यान एवं समाधि, इस अष्टांगयोग एवं सम्पूर्ण भारतीय धर्म, दर्शन, अध्यात्म एवं सांस्कृतिक परम्पराओं, ऋषि-मुनियों द्वारा प्रतिपादित जीवन मूल्यों व आदर्शो के प्रतिपूर्ण निष्ठावान व प्रतिबद्व है, वह आध्यात्मिक है, वह धार्मिक है, हम महर्षि पतंजलि प्रतिपादित अहिंसा, सत्य, अस्तेय, ब्रहाचर्य व अपरिग्रह इन पाँचयम तथा शौच, संतोश, तप, स्वाध्याय व ईश्वर प्रणिधान इन पांच नियमों को सार्वभौमिक, वैज्ञानिक व वैश्विक धर्म, आध्यात्मिक व संस्कृति के रूप में स्वीकार कर मनसा, वाचा, कर्मणा इनका पालन करने के लिए संकल्पित हैं। यमनियमों के विपरीत हिंसा, असत्य व चोरी इत्यादि करना, कराना व समर्थन करना पाप एवं अपराध समझते हैं। भारत एक बहु आयामी सांस्कृतिक परम्पराओं का देश है। अतः विविध धार्मिक, आध्यात्मिक, सांस्कृतिक व साम्प्रदायिक परम्पराओं में जो भी सार्वभौमिक व वैज्ञानिक सत्य है, हम उन्हीं को धर्म मानते हैं। ओउम् के वैज्ञानिक प्रभावों पर गहन अनुसंधान से पता चला है कि ओउम् एक पवित्र, वैज्ञानिक व चिकित्सकीय शब्द है। अष्टांग योग में जीवन के सामान्य व्यवहार से लेकर ध्यान एवं समाधि सहित, अध्यात्म की उच्चतम अवस्थाओं का अनुपम समावेश है। विश्व में शांति स्थापित करने का एकमात्र समाधान है - अष्टांगयोग का पालन योग के द्वारा ही वैयक्तिक व सामाजिक समरसता, शारीरिक स्वास्थ्य, मानसिक शांति एवं आत्मिक आनन्द की अनुभूति हो सकती है।

महर्षि पतंजलि द्वारा योग की परिभाषाः-

'यमनियमासनप्राणायामप्रत्याहारधारणाध्यानसमाधयोअष्टाअंगानि' - यो.सू. - **2/29**

महर्षि पतंजलि प्रकृति के सूक्ष्म रहस्यों से परिचय करवाते है। वे सविकल्प, निर्विकल्पक, सविचार तथा निर्विचार समाधि की विवेचना करते हैं। उनकी दृष्टि पूरी तरह वैज्ञानिक है, उनकी राह सत्य, प्रेम, समर्पण एवं पूर्ण आनन्द की है। वे प्रकृति की यथार्थता, नश्वरता और दुःखपूर्णता का अहसास दिलाते हैं। वे योग की व्याख्या विज्ञान की तरह करते हैं। वे ज्ञानयोग, भक्तियोग एवं कर्मयोग के संयोग को ही योग की पूर्णता मानते है। वे एकांगी नहीं है। वे कोई आग्रह नहीं रखते हैं। वे वैज्ञानिक दृष्टिकोण के साथ, अध्यात्म की यात्रा करते हैं। वे तुम्हें भगाते नहीं, जगाते हैं। वे युद्व एवं पलायन के बीच तुम्हें स्थिर रखते हैं। हम सबकी मंजिल है पूर्ण सत्य की उपलब्धि, स्वरूप का बोध, अस्तित्व की तलाश। महर्षि कहते हैं - क्रियायोग का लक्ष्य समाधि अर्थात् संबोधि, स्वरूपोपलब्धि तथा क्लेशों की परिसमाप्ति। कर्म ही जीवन व जगत का सत्य है। यह सम्पूर्ण सृष्टि, कर्म का ही परिणाम है।

'स्वकर्मणातमभ्पर्च्यसिद्विविन्दति मानवः।' **(**गीता **2/47),** योगेश्वर श्रीकृष्ण कहते हैं कि अपने कर्म से भगवान की पूजा कर। कर्म ही पूजा है। जो **'**कर्मण्येवाधिकारस्ते मा फलेषु कदाचन**'** (गीता **2/47),** को अपना आदर्श मानता हो, वह पराक्रमी है।

ज्ञानयोग, भक्तियोग एवं कर्मयोग के संयोग से होती है योग की पूर्णता। योग विद्या अति प्राचीनकाल से ही भारतीय मनीषियों के अन्तःकरण में विमल-मन्दाकिनी की अविच्छिन्न धारा की तरह प्रवाहित होती आ रही है, योग हमारे ऋषियों का साधनालब्ध ऐसा आन्तर विज्ञान है,

जिसकी उपज श्रुति, स्मृति, दर्शनशास्त्र, उपनिषद्, पुराण, धर्मशास्त्र एवं ज्योतिष आदि सभी विधाएं इसी योगशास्त्र द्वारा प्राप्त हुई हैं। इस योग विद्या की एक कल्पतरू वृक्ष से तुलना की गई है। अतः सर्वोच्च अवस्था की प्राप्ति को ज्ञानयोग, अपने कर्त्तव्य कर्म करते हुए कुशलतापूर्वक कर्मो को करना कर्मयोग, तथा ईश्वरीय सत्ता की दिव्य अनुभूति ही भक्तियोग हैं। अर्थात् आत्मा का परमात्मा से मिलन ही योग हैं। योग को हमारे ऋषि-मुनियों ने मानव कल्याण के लिए प्रतिपादित किया हैं। जिसका स्पष्ट संकेत इस ऋचा में मिलता है- 'ऋचों अक्षरे परमे व्योम ..... समासतेः।' ऋग्वेद - **1/64/39**

निष्कर्ष

'सा प्रथमा संस्कृतिर्विश्ववारा।' यजुर्वेद **7/14** हम विश्व की सबसे प्राचीन संस्कृति के संवाहक हैं। लगभग दो सौ करोड़ वर्ष पुराना वैभवशाली इतिहास है हमारा, योग का अर्थ है-जोड़ना योग के द्वारा एक स्वस्थ, समृद्व व संस्कारवान राष्ट्र व विश्व का निर्माण करना होगा। यही हमारे जीवन का ध्येय है। यदि संसार के लोग वास्तव में इस बात को लेकर गंभीर हैं कि विश्व में शांति स्थापित होनी ही चाहिए तो इसका एकमात्र समाधान है - अष्टांगयोग का पालन क्योंकि योग से ही शारीरिक स्वास्थ्य, मानसिक शांति एवं आत्मिक आनन्द की प्राप्ति सम्भव है। योग - आन्दोलन से इस धरती पर ऋषियों की संस्कृति को पुनः स्थापित कर सकें। क्योंकि योग भारतीय संस्कृति का आधार स्तम्भ है।

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महाकवि कालिदास विरचित अभिज्ञानशाकुन्तलम् नाटक में तनाव प्रबंधन

डॉ. समय सिंह मीना

सहायक आचार्य, संस्कृत, राजकीय कला महाविद्यालय, कोटा, राजस्थान, भारत

सारांश

साहित्य मानव-जीवन की प्रतिध्वनि है। साहित्य और समाज का सम्बन्ध अटूट एवं अन्योन्याश्रित है। आज का मानव जीवन कल का साहित्य बन जाता है और कल का साहित्य भावी जीवन का दिग्दर्शक बन खड़ा हो जाता है इसीलिए हम अपनी हर समस्या का समाधान पुरातन साहित्य में ढूँढ़ने की कोशिश करते हैं और समाधान भी पाते हैं। सम्पूर्ण वैश्विक साहित्य में प्राचीनता, महत्ता, वैज्ञानिकता और समकालीनता की दृष्टि से संस्कृत वाङ्मय का स्थान अनुपम और अद्वितीय है।महाकवि कालिदास का साहित्य तो इस श्रेणी में अपने आप में ही अनुपम है। संस्कृत नाटकों के सरताज 'अभिज्ञानशाकुन्तलम्' तो उनकी एक अद्वितीय रचना है। इसकी उदात्ता का प्रमुख कारण है-इसमें मानवीय भावों का अद्भुत चित्रांकन। सात अंकीय इस नाटक में मानव-जीवन को सहजतापूर्ण तरीके से जीने तथा तनावमुक्ति के उपायसूत्र पग-पग पर देखने को मिलते हैं। यहाँ बताया गया है कि यदि व्यक्ति के जीवन में अच्छे मित्र, कुशल मार्गदर्शक व गुरुजन, सदाचार, उदारहृदयता, विनम्रता, क्षमाशीलता, अपनी गलती को स्वीकार करने का भाव, ईश्वर की नियति के प्रति स्वीकार्यता, संगीत और कला के साथ जुड़ाव, प्रकृति से संपृक्ति आदि गुण होते हैं तो वह कभी भी चिन्ताग्रस्त नहीं होता है। वह बड़ी से बड़ी समस्या से सहज ही पार पा सकता है। ऐसा व्यक्ति न केवल स्वयं तनाव से दूर रहकर शांत और खुशहाल जीवन जीता है अपितु दूसरों को भी सहज व तनावमुक्त जीवन जीने की राह दिखलाता है। अतः सात अंकीय यह सुप्रसिद्ध नाटक उनकी सर्वश्रेष्ठ एवं कालजयी रचना है और उनकी यश-पताका और कीर्ति का स्तम्भ है।

मुख्य शब्दः मनोभाव, स्थायी भाव, अवसाद, तनावमुक्ति, प्रतिध्वनि, मित्र, नियति, राजपुरोहित, चित्तवृत्तियाँ, अनन्यमानसा, अभिज्ञानशाकुन्तलम्, आत्मग्लानि, चित्रपट, रसवेत्ताओं, अपराधबोध, ऋषिकण्वसुता।

प्रस्तावना

मानव मन में मनोभावों का साम्राज्य है। विविध वस्तुओं के दर्शन, श्रवण अथवा स्पर्श करने पर मानव एक विशेष प्रकार की अनुभूति प्राप्त करता है और यही अनुभूति उसके मस्तिष्क में एक प्रभाव या संस्कार छोड़ जाती है। मानव मन में स्थायी रूप से रहने के कारण विद्वज्जनों ने इन्हें 'स्थायी भाव' के नाम से अभिहित किया जाता है। ये मनोभाव सुखात्मक और दुःखात्मक उभयविध हुआ करते हैं। सुखात्मक और दुःखात्मक ये दोनों मनोभाव मानव मन की क्रमशः सुखद और दुःखद अवस्था के परिचायक हुआ करते हैं। साहित्याचार्यों द्वारा इन मनोभावों के स्वरूपगत वैविध्य को पहचानकर इनकी नियत संख्या निर्धारित की गई है। आचार्य मम्मट ने अपने प्रसिद्ध काव्यशास्त्रीय ग्रन्थ 'काव्यप्रकाश' में इनकी संख्या आठ मानी है-

रतिर्हासश्च शोकश्च क्रोधोत्साहौ भयं तथा।
जुगुप्सा विस्मयश्चेति स्थायीभावाः प्रकीर्त्तिताः॥[1]

अर्थात् रति, हास, शोक, क्रोध, उत्साह, भय, जुगुप्सा और विस्मय-ये आठ स्थायी भाव या मनाभाव हैं। आचार्य विश्वनाथ ने 'शम' नामक एक और मनोभाव को जोड़कर इनकी संख्या नौ बतायी है-

रतिर्हासश्च शोकश्च क्रोधोत्साहौ भयं तथा।
जुगुप्सा विस्मयश्चेत्थमष्टौ प्रोक्ताः शमोऽपि च॥[2]

रसवेत्ताओं का मन्तव्य है कि ये मनोभाव विभाव, अनुभाव एवं संचारीभाव के संयोग से क्रमशः श्रृंगार, हास्य, करुण, रौद्र, वीर, भयानक,, वीभत्स, अद्भुत और शान्त नामक रसों का आस्वादन कराया करते हैं। मानव जीवन में इन रसों की महत्ता सर्वविदित है। मानव जीवन को सचेष्ट और प्रेरणाशील बनाये रखने में इन रसों की महत्ता अक्षुण्ण है। परन्तु यह भी सर्वविदित है कि इन मानवीय मनाभावों पर बुद्धि और विवेक का नियंत्रण परम आवश्यक हो जाता है। मानवीय आचार संहिता हेतु यह परम आवश्यक भी है। मानव ने जैसे-जैसे वैज्ञानिक प्रगति कर स्वयं के जीवन को आसान बनाने की कोशिश की है, वैसे-वैसे उसके जीवन से शांति का अभाव होता जा रहा है। आज व्यक्ति आधुनिक चकाचौंध के वशीभूत होकर अपने मनोभावों पर नियंत्रण खोता जा रहा है। इसी का परिणाम है- मानसिक अवसाद या तनाव। आज यह समस्या बहुत ही भयावह हो गयी है जिसके कारण समकालीन बुद्धिजीवी वर्ग एक स्वतन्त्र विषय के रूप में इस पर विचार करने लगा है। इस पर नियंत्रण या प्रबंधन हेतु आज विविध मंचों पर बहुत अधिक चर्चा होने लगी है। फलतः तनाव प्रबंधन समकालीन विश्व में एक नूतन अवधारणा की भाँति जाना जाने लगा है। परन्तु ऐसा बिल्कुल भी नहीं है। भारतीय संस्कृति और साहित्य स्वरूप हमारे त्रिकालदृष्टा मनीषियों के चिन्तन में इसके सूत्र पहले से ही

निहित हैं और एक मर्यादित और संतुलित जीवन शैली में ये रचे-बसे हुए हैं। बहुत ही सहजता के साथ तनाव प्रबंधन के समाधान यहाँ प्रस्तुत किए हैं।

चूँकि साहित्य मानव-जीवन की प्रतिध्वनि है। साहित्य और समाज का सम्बन्ध अटूट एवं अन्योन्याश्रित है। आज का मानव जीवन कल का साहित्य बन जाता है और कल का साहित्य भावी जीवन का दिग्दर्शक बन खड़ा हो जाता है इसीलिए हम अपनी हर समस्या का समाधान पुरातन साहित्य में ढूँढ़ने की कोशिश करते हैं और समाधान भी पाते हैं। सम्पूर्ण वैश्विक साहित्य में प्राचीनता, महत्ता, वैज्ञानिकता और समकालीनता की दृष्टि से संस्कृत वाङ्मय का स्थान अनुपम और अद्वितीय है। संस्कृत साहित्य में हमारी संस्कृति, धर्म, दर्शन और लोकजीवन की अनुपम निधियाँ सन्निहित हैं। इसी कारण तनाव प्रबंधन की दृष्टि से हमारे प्राक्तन संस्कृत साहित्य के अनुपम रत्नों जैसे-श्रीमद्भगवद्गीता, रामायण, महाभारत, सकल वैदिक साहित्य एवं लौकिक साहित्य आदि का आलोड़न किया जा रहा है। महाकवि कालिदास का साहित्य तो इस श्रेणी में अपने आप में ही अनुपम है। कविवर कालिदास मानव मन के कुशल चितेरे हैं। उनकी सातों रचनाएँ-रधुवंशम्, कुमारसम्भवम्, ऋतुसंहारम्, मेधदूतम्, मालविकाग्निमित्रम्, विक्रमोर्वशीयम् तथा अभिज्ञानशाकुनतलम् न केवल संस्कृत साहित्य अपितु विश्व साहित्य की अनुपम निधि है। इनमें संस्कृत नाटकों के सरताज 'अभिज्ञानशाकुन्तलम्' तो एक अद्वितीय रचना ही है। इसकी उदात्तता का प्रमुख कारण है-इसमें मानवीय भावों का अद्भुत चित्रांकन। सात अंकीय इस नाटक में मानव जीवन के सभी उतार-चढ़ावों और इनसे पार पाने की कहानी को बडी रोचकता और सहजता के साथ दर्शाया गया है। समकालीन मानव जीवन में बढ़ते तनाव, तनाव के कारणों और उन पर पार पाने के तरीकों का यहाँ कुशलता के साथ चित्रण किया गया है।

व्यक्ति अपने जीवन में अनेक अवसरों और परिस्थितियों के वशीभूत होकर अनिर्णय की स्थिति में होता है और अपने मानसिक उद्वेगों के आगोश में इस तरह आ जाता है कि वह अपनी मन की बात किसी विश्वस्त व्यक्ति से कहकर स्वयं को हलका अर्थात् तनावमुक्त महसूस करता है। यह अक्सर समवयस्क ही हुआ करता है, इसलिए इसे मित्र की संज्ञा से अभिहित किया जाता है। अभिज्ञानशाकुन्तलम् नाटक में जब राजा दुष्यन्त स्वयं को काम के वशीभूत पाकर राजकार्य के प्रति उदासीन हो जाता है तब वह अपनी अभिलाषा के बारे में अपने मित्र विदूषक माढ़व्य को बताता है कि जब से मैंने तपोवन निवासिनी ऋषिकण्वसुता शकुन्तला को देखा है, तब से मेरा मन उसी के बारे में सोचता रहता है। राजा दुष्यन्त कहता है कि मित्र! तुम से ज्यादा क्या कहूँ-

चित्रे निविश्य परिकल्पितसर्वयोगान्
रूपोच्चयेन विधिना विहिता कृशाङ्गी।
स्त्रीरत्नसृष्टिरपरा प्रतिभाति सा मे
धातुर्विभुत्वमनुचिन्त्य वपुश्च तस्याः॥[3]

अर्थात् विधाता की सृष्टि करने की सामर्थ्य तथा शकुन्तला के शरीर को देखने से मुझे यही प्रतीत होता है कि विधाता द्वारा सृष्टि करने की सब सामग्रियों को मन में रखकर मात्र रूपराशि के द्वारा ही की गई इस कृशाङ्गी की रचना मानो अद्वितीय स्त्रीरत्न की सृष्टि है।

परन्तु माढव्य उसे सन्मित्र के रूप में अनेक तरह से कार्य-अकार्य के विषय में विचार करने के लिए कहता है कि अन्तःपुर की उत्तम रमणियों को छोड़कर एक तपस्वी कन्या की इच्छा आप उसी भाँति कर रहे हैं जैसे मीठे खजूर के फलों से ऊबकर कोई इमली खाने की इच्छा रखता है- "भो! यथा पिण्डीखर्ज्जूरैरुद्वेजितस्य तिन्तिड्यां श्रद्धा भवति, तथा अन्तःपुरस्त्रीरत्नपरिभोगिनो भवत इयं प्रार्थना।'[4]

राजा दुष्यन्त जब शकुन्तला से मिलने पुनः आश्रम में जाने का बहाना तलाश रहे होते हैं तभी तवस्वीजन वहाँ आकर राजा से कुलपति कण्व की अनुपस्थिति में राक्षसों से आश्रम की रक्षा करने का निवेदन करते हैं उसी समय राजमाता का संदेश लेकर करभक वहाँ पहुँचता है और राजा को शीघ्र राजधानी लौटने का संदेश देता है। तब दुष्यन्त कहता है कि इधर तपस्वीजनों का कार्य और उधर गुरुजनों की आज्ञा, दोनों ही अनुलंघनीय हैं, तो क्या करना चाहिए-

कृत्ययोर्भिन्न्ादेशत्वाद् द्वैधीभवति मे मनः।
पुरः प्रतिहतं शैलैः स्रोतः स्रोतोवहां यथा॥[5]

अर्थात् दोनों कार्यों के भिन्न्-भिन्न् स्थान पर होने के कारण मेरा मन सामने पहाड़ से रुककर दो भागों में विभक्त होकर बहने वाले नदी के प्रवाह के समान दुविधा में पड़ गया है।

तब दुष्यन्त के कहने पर माधव्य राजा के स्थान पर स्वयं राजधानी लौटता है और उसे आश्रम की रक्षा सम्बन्धी कार्य में व्यस्त बताता है। इस प्रकार मित्र की सहायता से राजा का मनोरथ सिद्ध हो जाता है। लगभग यही स्थिति कामसंतप्त शकुन्तला की भी होती है। वह कामताप से पीड़ित हो अस्वस्थ हो जाती है किंतु अपने मन की बात किसी से कह नहीं पाती है। तब उसकी दोनों सखियाँ अनुसूया और प्रियंवदा द्वारा उसकी स्थिति को भली-भाँति समझकर उसके संताप का कारण पूछने पर शकुन्तला उनसे कहती है कि आप दोनों के सिवाय मैं किससे कहूँगी परन्तु मैं

तुम लोगों के कष्ट का कारण नहीं बनना चाहती। तब दोनों कहती हैं कि सखि! स्नेहीजनों में बँटा हुआ दुःख सह्य हो जाता है- "स्निग्धजनसंक्तिं खलु दुःखं सह्यवेदनं भवति।"[6] तब शकुन्तला कहती है कि तपोवन की रक्षा करने वाले राजर्षि को देखा है तभी से उनकी प्राप्ति की तीव्र अभिलाषा से मैं इस अवस्था को प्राप्त हो गयी हूँ। अतः यदि आप दोनों को उचित लगे तो कुछ ऐसा प्रयत्न करो जिससे मैं उस राजर्षि की कृपाभाजन बन जाऊँ। तब दोनों सखियाँ कहती हैं कि तुम्हारी अभिलाषा बिल्कुल उचित ही है क्योंकि वह राजर्षि यथायोग्य वर के अनुरूप ही है। तब दोनों सखियाँ शकुन्तला और राजर्षि के मनोभाव एक-दूसरे तक पहुँचाने के लिए कमलिनी के पत्ते पर मदनलेख लिखवाती हैं। इतने में अवसर पाकर राजा दुष्यन्त लता मण्डप में उनके समक्ष उपस्थित हो जाता है। उस समय दोनों सखियाँ राजा दुष्यन्त को सोच-विचार कर निर्णय लेने के लिए कहती हैं। वे कहती हैं- "ऐसा सुना जाता है कि राजाओं की बहुत सी स्त्रियाँ होती हैं। इसलिए वैसा करिए जिससे हमारी यह प्रिय सखी अपने सम्बन्धियों के लिए शोचनीय न बने- बहुवल्लभाः खलु राजानः श्रूयन्ते। तद् यथा इयं नः प्रियसखी बन्धुजनशोचनीया न भवति ; तथा करिष्यति।"[7]

तब राजा दुष्यन्त के यह कहने पर कि "मेरे कुल की दो ही प्रतिष्ठा रहेंगी- समुद्र पर्यन्त यह पृथ्वी और तुम्हारी प्रिय सखी।"[8] तब जाकर वे दोनों पूरी तरह आश्वस्त होकर दोनों का प्रणयमिलन करवाती हैं। वे दोनों लता मण्डप के आस-पास ठहरकर पहरेदारी करती हैं और आर्या गौतमी के आने पर सूचना सांकेतिक भाषा में दोनों को देती हैं-" चक्रवाकवधु! आमन्त्रयस्व सहचरम्, ननु उपस्थिता रजनी।"[9]

राजा दुष्यन्त के अपनी राजधानी लौट जाने पर शकुन्तला अपनी सुध-बुध खोकर रात-दिन उसके चिन्तन में ही डूबी रहती है। इसी कारण अनन्यमानसा वह आश्रम में पधारे दुर्वासा ऋषि का अतिथि सत्कार नहीं कर पाने के कारण उनके शाप की भागी बन जाती है। तब अनुसूया दुर्वासा ऋषि के पैरों गिरकर और शकुन्तला की मनोदशा से उन्हें अवगत करवाकर प्रसन्न्ा कर लेती है और शाप के निवारण का उपाय पूछती है। तब दुर्वासा ऋषि कहते हैं कि किसी पहचान चिह्न के दिखाने पर जिसे यह याद कर रही है उसे सब कुछ स्मरण आ जायेगा। इस बात को भी दोनों सखियाँ पूरी तरह से गोपनीय रखती हैं ताकि पहले से ही चिन्तित उनकी सखी और अधिक चिन्ताग्रस्त नहीं हो- " हला! द्वयोरेवावयोर्हृदये एष वृत्तान्तस्तिष्ठतु। रक्षणीया खलु प्रकृतिपेलवा प्रियसखी।"[10]

दोनों सखियाँ शकुन्तला की विदाई के अवसर पर बड़े ही चातुर्यपूर्ण तरीके से उससे कहती हैं कि कहीं राजर्षि तुम्हें पहचानने में असमर्थ हों तो उन्हें यह उनके नामांकित अंगूठी दिखा देना-" सखि! यदि नाम स राजर्षिः प्रत्यभिज्ञानमन्थरो भवेत्, तदा अस्य इदमात्मनो नामधियाङ्कितमङ्गुरीयकं दर्शयिष्यसि।"[11]

मनुष्य अपने जीवन में हर परिस्थिति व घटनाक्रम को अपने अनुसार मोड़ने की कोशिश करता है और जब मनोनुकूल घटित नहीं होता है तो गहरी निराशा में डूब जाता है। अतः यदि हमें चिन्तारहित होकर खुशहाल जीवन जीना है तो हमें नियति को भी स्वीकारना पड़ेगा। वस्तुस्थिति की सत्यता को पहचानकर एवं शान्त चित्त से ही हम समुचित समाधान की ओर अग्रसर हो पाते हैं। घर-परिवार में यदि कोई हमारे अनुसार नहीं चलता है तो हम अपनी समस्त ऊर्जा उसको अपने अनुसार ढालने में लगा देते हैं और दिन-रात उसी चिन्तन में डूबे रहकर स्वयं के साथ-साथ अन्य परिजनों को भी तनावग्रस्त करते रहते हैं। अतः जीवन की सत्यता को स्वीकार कर हमें आगे बढ़ते रहना चाहिए। इसका उत्तम दृष्टान्त हमें कुलपति कण्व की जीवनशैली के रूप में देखने को मिलता है। ऋषि कण्व जब तीर्थयात्रा से लौटकर आश्रम आते हैं तो अग्निशाला में प्रवेश करते ही उन्हें आकाशवाणी के माध्यम से पता चलता है कि उनकी पुत्री शकुन्तला गर्भवती है और हस्तिनापुर के राजा दुष्यन्त के साथ इसका गान्धर्व विवाह हो चुका है-

दुष्यन्तेनाहितं तेजो दधानां भूतये भुवः।
अवेहि तनयां ब्रह्मन्न्ाग्निगर्भां शमीमिव॥[12]

अपनी पुत्री शकुन्तला विषयक इस वृत्तान्त को सुनकर ऋषि कण्व क्रोधित और चिन्ताग्रस्त होने की बजाय घटनाक्रम की औचित्यता और सभी पक्षों पर समुचित विचार कर शकुन्तला को उसके पति के घर भेजने का निश्चय कर लेते हैं। वे अपनी पुत्री के निर्णय को स्वीकार कर और उसे गले लगाकर कहते हैं- "वत्से! दिष्ट्या धूमोपरुद्धदृष्टेरपि यजमानस्य पावकस्यैव मुखे आहुतिर्निपतिता; सुशिष्यपरिदत्तेव विद्या अशोचनीयासि में संवृत्ता। अद्यैव त्वाम् ऋषिपरिरक्षितां कृत्वा भर्तुः सकाशं विसर्जयामि।"[13] इस प्रकार ऋषि कण्व विधि-विधानपूर्वक सहर्ष अपनी पुत्री को विदा करते हैं।

राजा दुष्यन्त जब आश्रमवासीजनों के द्वारा लाई गई शकुन्तला को पहचानने से इनकार करते हुए उसे पत्नी के रूप में स्वीकार नहीं करते हैं तब ऋषि कण्व का शिष्य शार्ङ्गरव शकुन्तला को समझाते हुए जो कहता है वह हम सब के लिए अनुकरणीय है और जीवन में चिन्ता मुक्त रहने का उपाय है। वह कहता है-

अतः परीक्ष्य कर्त्तव्यं विशेषात् संगतं रहः।
अज्ञातहृदयेष्वेवं वैरीभवति सौहृदम्॥[14]

कहने का तात्पर्य यह है कि हमें अपने वरिष्ठ एवं अनुभवीजनों के मार्गदर्शन में कार्य करने चाहिए। यदि किसी कारण से सफलता नहीं भी मिले तो हमारा बुरा नहीं हो सकता है। परन्तु आज के दौर में बढ़ता एकाकीपन और स्वच्छन्दता हमारे जीवन में बढ़ते तनाव और चिन्ताओं का महत्त्वपूर्ण कारण है क्योंकि विपरीत समय में हमारे साथ कोई खड़ा नहीं रहता है। फिर भी ऐसे समय में हमें निराश होकर कोई गलत कदम उठाने की बजाय अपने गुरुजनों के साथ अपने मन की बात अवश्य साझा करनी चाहिए। ऐसा करने से कोई न कोई समाधान निश्चित ही निकल आता है। राजा दुष्यन्त के शकुन्तला को पहचानने से इनकार करने पर शकुन्तला और उसके परिजन जब उसको तरह-तरह की खरी-खोटी सुनाते हैं तब वह अपने राजगुरु से इस विषय में समुचित परामर्श देने के लिए कहते हैं। तब राजपुरोहित राजा से कहते हैं कि जब तक इसका प्रसव नहीं हो तब तक यह मेरे घर रहेगी और यदि इसका पुत्र चक्रवर्ति राजा के लक्षणों से युक्त होगा तो वह आपकी संतान और यह आपकी धर्मपत्नी होगी क्योंकि ज्योतिषियों ने पूर्व में ही आपके चक्रवर्ती पुत्र की प्राप्ति के बारे में बताया था-"त्वं साधुनैमित्तिकैरुपदिष्टपूर्वः प्रथममेव चक्रर्त्तिनं पुत्रं जनयिष्यसीति। स चेन्मुनिदौहित्रस्तल्लक्षणोपपन्ाो भविष्यति, ततोऽभिनन्द्य शुद्धान्तमेनां प्रवेशयिष्यसि। विपर्यये त्वस्याः पितुः समीपगमनं स्थितमेव।"[15]

जब भी व्यक्ति का मन उद्विग्न रहता है, तनावग्रस्त रहता है तब इस तनावमुक्ति का सर्वोत्तम उपाय है- प्रकृति की शरण में जाना। व्यक्ति को स्थान परिवर्तित करते हुए मनोरम स्थलों पर जाना चाहिए। इससे मन बहलता है। साथ ही ऐसी स्थिति में एकाकी रहने की बजाय अपने परिजनों अथवा आत्मीयजनों के साथ समय बिताना चाहिए। इसके अलावा तनावमुक्ति का एक और अतिमहत्त्वपूर्ण साधन है-संगीत और कला से जुड़ाव। संगीत और कला मानव जीवन के उतार-चढ़ावों का ही रूप है। इसके माध्यम से व्यक्ति अपने मनोभावों की अभिव्यक्ति बहुत ही सहज रूप से कर लेता है। दुर्वासा ऋषि के शापवश राजा दुष्यन्त शकुन्तला के साथ हुए गान्धर्व विवाह विषयक वृत्तान्त को भूल जाता है और इस कारण उसे स्वीकार करने से इनकार कर देता है। परन्तु जैसे ही धीवर के माध्यम से अपनी अंगूठी मिलती है तो उसे देखकर सब कुछ स्मरण हो आता है। शकुन्तला के परित्याग के पाश्चात्ताप की अग्नि से वह अहर्निश पीड़ित रहता है और शकुन्तला के साथ बिताये पलों एवं पूर्व वृत्तान्तों को स्मरण कर विह्वल होता रहता है। अपने कृत्य पर उन्हें आत्मग्लानि होती रहती है। राजकार्य में भी उनका मन नहीं लगता है। उन्होंने प्रतिवर्ष मधुमास में मनाये जाने वाले वसन्तोत्सव पर भी प्रतिबन्ध लगा दिया। राजा दुष्यन्त चित्रकला में पारंगत है। अतः वह शकुन्तला के स्वहस्तनिर्मित चित्रफलक को अपने प्रमदवन में स्थित माधवी लतामण्डप में मंगवाता है और अपने मित्र माढव्य के साथ शकुन्तला विषयक वर्तालाप करते हैं। राजा चित्रपट को देखकर शकुन्तला के स्वरूप का जीवन्त वर्णन करते हैं-

दीर्घापाङ्गविसारि नेत्रयुगलं लीलांचितभ्रूलतं
दन्तान्तःपरिकीर्णहासकिरणज्योत्स्नाविलिप्ताधरम्।
कर्कन्धूद्युतिपाटलोष्ठरुचिरं तस्यास्तदेतन्मुखं
चित्रेऽप्यालपतीव विभ्रमलसत्प्रोöिन्नकान्तिद्रवम्॥[16]

अर्थात् विशाल कोरों के विस्तार से मुक्त नेत्रद्वय वाला, विलास से शोभित भ्रूलता वाला, दाँतों के बीच विस्तीर्ण हास्य किरणों की प्रभा से व्याप्त दोनों ओष्ठ वाला, पक्व बदरीफल की कान्ति के समान शोभा से युक्त रक्तिम वर्ण वाले अधर के कारण मनोहर, शोभायमान पसीने की बूँदों में मानो लावण्य टपकाने वाला यह शकुन्तला का वह मेरे द्वारा चुम्बित मुख चित्र में भी मानो बातें कर रहा है। इस तरह राजा दुष्यन्त नाना भाँति अपने मन को बहलाने की कोशिश करता रहता है।

यदि हम अपने जीवन में सुख-शांति चाहते हैं, तनावमुक्त रहना चाहते हैं तो हमें अपने व्यवहार में कुछ आवश्यक परिवर्तन लाने होंगे। जिसमें महत्त्वपूर्ण है-अपनी गलती को स्वीकार कर पीड़ित व्यक्ति से क्षमा मांग लेना और दूसरों की गलती को भी उदारहृदय से क्षमा कर देना। ऐसा करने से मन के अन्तर्द्वन्द्व शान्त हो जाते हैं। हमारा चित्त निर्मल और अन्तःकरण शुद्ध हो जाता है। यह कोई साधारण बात न होकर महान् व्यक्तित्व का लक्षण है। कहा भी गया है-'क्षमा वीरस्य भूषणम्।'

श्रीमöगवद्गीता में भगवान् वासुदेव कहते हैं कि तेज (प्रभाव), क्षमा, धैर्य, शरीर की शुद्धि, वैरभाव का त्याग, मान की चाह न होना, हे भरतवंशी अर्जुन! ये सभी दैवी सम्पदा को प्राप्त हुए पुरुष के लक्षण हैं-

तेजः क्षमा धृतिः शौचमद्रोहो नातिमानिता।
भवन्ति सम्पदं दैवीमभिजातस्य भारत॥[17]

देवासुर संग्राम में दानवों पर विजय प्राप्त कर राजा दुष्यन्त जब देवराज इन्द्र के सारथि मातलि के साथ अपनी राजधानी लौट रहे होते हैं तो रास्ते में भगवान् मारीच (कश्यप) ऋषि का आश्रम पड़ता है। उसे देखकर राजा के मन में उनके दर्शन की इच्छा होती है तो आश्रम में प्रवेश करने पर वहाँ तापसी वेश में अपनी पत्नी शकुन्तला व अपने पुत्र सर्वदमन को देखते हैं। पूर्व में अज्ञानवश परित्याग करने के अपराधबोध से ग्रस्त हो राजा दुष्यन्त शकुन्तला के पैरों में गिरकर क्षमा याचना करते हैं। वह कहते हैं-

सुतनु! हृदयात् प्रत्यादेशव्यलीकमपैतु ते

किमपि मनसः सम्मोहो मे तदा बलवानभूत्।
प्रबलतमसामेवंप्रायाः शुभेषु हि वृत्तयः
स्रजमपि शिरस्यन्धः क्षिप्तां धुनोत्यहिशङ्कया॥[18]

अर्थात् हे सुन्दरि! तुम्हारे हृदय से परित्याग सम्बन्धी दुःख दूर हो। क्योंकि उस समय मेरे मन में बलवान् अज्ञान उत्पन्न हो गया था। अत्यन्त अज्ञानी की चित्तवृत्तियाँ कल्याण कामना करने वालों के विषय में प्रायः इसी प्रकार हुआ करती हैं। देखो, किसी अन्धे के गले में एकाएक यदि कोई फूल की माला भी डाल दे तो वह उसे साँप समझकर फेंक ही देता है। इस प्रकार राजा होने के बावजूद दुष्यन्त अपनी गलती पर अतिविनम्रता के साथ क्षमा माँगते हैं। उसके ऐसा करने पर उदारहृदया शकुन्तला भी विगत दुःख-भरे दिनों को अपना प्रारब्ध मानकर राजा को क्षमा कर देती है। राजा को उठाती हुई वह कहती है-"उत्तिष्ठतु आर्यपुत्रः। नूनं मे सुखप्रतिबन्धकं पुराकृतं तेषु दिवसेषु परिणाममुखमासीत्; येन सानुक्रोशोऽपि आर्य्यपुत्रो मयि विरसः संवृत्तः।"[19]

व्यक्ति अपने जीवन में कितनी भी उन्नति कर ले, कितना भी बड़ा आदमी क्यों न बन जाए, उसे इसका श्रेय परमपिता परमेश्वर को तथा अपने सहायकों को ही देना चाहिए। ऐसा करने से व्यक्ति में अहंभाव जागृत नहीं होता है और विपरीत समय में विचलित भी नहीं होता है। देवराज इन्द्र द्वारा विदाई वेला पर अपने आसन पर बिठाकर किए गए सत्कार से भावविभोर होकर राजा दुष्यन्त मातलि से कहते हैं कि देवराज इन्द्र ने मेरा आशातीत सम्मान किया। तब मातलि राजा दुष्यन्त से कहते हैं कि आपने स्वर्ग को दानवरूपी कन्टकों से रहित कर देवराज का बहुत बड़ा काम किया है। इसके लिए आप देवराज से क्या नहीं प्राप्त कर सकते ? तब राजा कहते हैं कि दानवों रूपी कन्टकों को नाश करने में देवराज की महिमा और कृपा ही कारण है-"तत्रखलु शतक्रतोरेव महिमा। पश्य-

सिद्धयन्ति कर्मसु महत्स्वपि यन्नियोज्याः
सम्भावनागुणमवेहि तमीश्वराणाम्।
किं प्राभविष्यदरुणस्तमसां वधाय
त´चेत् सहस्रकिरणे धुरि नाकरिष्यत्॥[20]

अर्थात् महान् कार्यों में भी सेवक जो सफल हो जाते हैं, उसे स्वामियों के गौरव का माहात्म्य ही जानिए। सूर्य अपने आगे धुरा में यदि न बिठाते तो क्या अरुण अन्धकार को नष्ट करने में समर्थ होते।

इसी भाँति राजा दुष्यन्त कश्यप मुनि से कहते हैं कि भगवन्! आपका अनुग्रह अनोखा है क्योंकि पहले तो पत्नी व पुत्र प्राप्ति रूप हमारी अभीष्ट सिद्धि हुई; बाद में आपके दर्शन हुए। यह आपकी महानता ही है। क्योंकि-

उदेति पूर्वं कुसुमं ततः फलं
घनोदयः प्राक् तदनन्तरं पयः।
निमित्तनैमित्तकयोरयं क्रम-
स्तव प्रसादस्य पुरस्तु सम्पदः॥[21]

अर्थात् पहले फूल आते हैं, उसके बाद फल। पहले मेघ दिखते हैं बाद में जल। इस तरह निमित्त और नैमित्तिक (कार्य और कारण) का क्रम बँधा हुआ है, पर आपकी कृपा के फलस्वरूप सम्पत्तियाँ पहले ही उपस्थित हो जाती हैं।

इस प्रकार राजा दुष्यन्त बहुत ही विनम्रभाव से सभी को अभिवादन करते हैं और स्वीकार भी करते हैं। क्योंकि व्यक्ति के जीवन में मधुर एवं प्रेमपूर्ण वाणी और स्मित मुस्कान बड़ी से बड़ी समस्याओं का समाधान करने वाली होती हैं। विश्व की सभी भाषाओं के साहित्य में इसकी महिमा नाना प्रकार से वर्णित की है। नाटककार भवभूति भी लिखते हैं कि मधुर, प्रिय और संयमयुक्त वाणी व्यक्ति को अकारण वैर व तनाव से बचाती है। अतः हमेशा सबसे मधुर व्यवहार करना चाहिए क्योंकि हमारे मंत्रदृष्टा ऋषियों ने उन्मत्त और घमण्डी पुरुषों की वाणी को 'राक्षसी वाणी' कहकर सब प्रकार से अशांन्ति का कारण बतलाया है-

ऋषयो राक्षसीमाहुर्वाचमुन्मत्तदृप्तयोः।
सा योनिः सर्ववैराणां, सा हि लोकस्य निष्कृतिः॥[22]

इस प्रकार 'अभिज्ञानशाकुन्तलम्' नाटक के अनुशीलन उपरान्त कहा जा सकता है कि महाकवि कालिदास विलक्षण रचनाधर्मिता के धनी थे। उनकी नाट्यशैली में वाच्यार्थ की प्रधानता है। वे व्यर्थ के वागाडम्बर एवं वाग्विलास से हमेशा बचते रहे हैं। उन्होंने प्रकृति के सुकुमार एवं विकराल दोनों स्वरूपों को कुशलतापूर्वक अपने पद्यों में रूपायित किया है। साथ ही अर्थ के अनुरूप ही ध्वनि उत्पन्न करने का नैपुण्य हमें उनके पद्यों में देखने को मिलता है। यह एक नाटक ही उनकी प्रतिभा और पाण्डित्य को अभिव्यक्त करने में अलं है। उनकी पद्य रचनाओं में वेद, उपनिषद् आदि विविध शास्त्रीय ज्ञान नाना प्रकार के आलंकारिक तत्त्वों में पिरोये हुए हैं। वे श्रृंगार, करुण, विप्रलम्भ, हास्य आदि सभी रसों के अंकन में

अद्वितीय हैं। मानव जीवन को सहजपूर्ण तरीके से जीने तथा तनावमुक्ति के उपायसूत्र इस नाटक में पग-पग पर देखने को मिलते हैं। यहाँ बताया गया है कि यदि व्यक्ति के जीवन में अच्छे मित्र, अच्छे मार्गदर्शक, गुरुजन, सदाचार, उदारहृदयता, विनम्रता, क्षमाशीलता, अपनी गलती को स्वीकार करने का भाव, ईश्वर की नियति के प्रति स्वीकार्यता, संगीत और कला के साथ जुड़ाव, प्रकृति से जुड़ाव आदि गुण होते हैं तो वह कभी भी चिन्ताग्रस्त नहीं होता है। वह बड़ी से बड़ी समस्या से सहज ही पार पा सकता है। ऐसा व्यक्ति न केवल स्वयं तनाव से दूर रहकर शांत और खुशहाल जीवन जीता है अपितु दूसरों को भी सहज व तनावमुक्त जीवन जीने की राह दिखलाता है। अतः सात अंकीय यह सुप्रसिद्ध नाटक उनकी सर्वश्रेष्ठ एवं कालजयी रचना है और उनकी यश-पताका और कीर्ति का स्तम्भ है। उत्कृष्ट नाटक का यही वैशिष्ट्य होता है कि वह समाज में सकारात्मक वातावरण विकसित करता है। मानव-जीवन में कर्तव्य का उपदेशक बनकर अकारण तनाव से मुक्ति दिलाता है। जैसाकि नाट्यशास्त्रकार लिखते हैं-

धर्म्यनर्थ्यं यशस्यं च सोपदेशं ससंग्रहम्।
भविष्यतश्च लोकस्य सर्वकर्मानुदर्शकम्॥
सर्वशास्त्रार्थसम्पन्नं सर्वशिल्पप्रवर्तकम्।
नाट्याख्यं प०चमं वेदं सेतिहासं करोम्यहम्॥[23]

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पर्यावरण और जलवायु परिवर्तन : एक ऐतिहासिक अध्ययन

सत्य प्रकाश

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सारांश

पर्यावरण को नियंत्रित और प्रभावित करने वाला कारक जलवायु है जो कि जलवायु से प्राकृतिक वनस्पति, मिट्टी, जल तथा जीव जंतु प्रभावित होते हैं। सामान्यतः जलवायु मानव की मानसिक और शारीरिक क्रिया पर भी गहरा प्रभाव डालती है। जलवायु ही मानव पर सर्वाधिक प्रभाव डालती है । सृष्टि के विकास क्रम के प्रारंभ से ही यह देखा गया कि पर्यावरण और जलवायु में छोटे बड़े बदलाव होते रह रहे हैं। जैसे अफ्रीका के सहारा क्षेत्र की भूदृश्यों से भरी झील कुछ ही सदियों में एक अनुपजाऊ मरुस्थल में परिवर्तित हो गई। आज के हिमालय पर्वत की जगह पर कभी सागर हुआ करता था। भविष्य में ग्रीन हाउस के निर्माण से उत्पन्न गैसों से भी बहुत बड़ी संख्या में परिवर्तन हो रहे हैं।

गैसे ग्रहों के तापमान में क्रमिक वृद्धि करके पृथ्वी पर गंभीर रूप से जीवन को कठिन बनाती हैं । आज वैश्विक तापन के परिणाम स्वरूप पृथ्वी के तापमान में निरंतर अप्रत्याशित वृद्धि हो रही है । ध्रुवीय प्रदेशों की बर्फ पिघल रही है जिसके परिणाम स्वरूप सागरो का जल स्तर बढ़ रहा है। सागरों में स्थित छोटे छोटे द्वीपों जलमग्न होने का खतरा बढ़ जाएगा। समताप मंडल की ऊपरी परत में ओजोन परत स्थिति है जो सूर्य से आने वाली पराबैंगनी किरणें के दुष्प्रभाव से जीव जंतु और पादपों को सुरक्षा प्रदान करती है। आज मानव ही नहीं बल्कि जीव जंतु और पादपों पर प्रदूषित पर्यावरण का गहरा प्रभाव पड़ रहा है । आज मृदा प्रदूषण, जल प्रदूषण ,वायु प्रदूषण और ध्वनि प्रदूषण जीव, जंतु और पादपों को अत्यधिक प्रभावित कर रहे हैं । वैश्विक तापन के कारण विश्व की कई दुर्लभ प्रजातियां विलुप्त हो चुकी हैं। निरंतर पशु पक्षियों और पादपों की संख्या में आश्चर्यजनक रूप से कमी हो रही है। आज समुद्री तूफान, आंधी, चक्रवात,भूकंप जैसी प्राकृतिक आपदाएं बढ़ती जा रही हैं। आम और खास आदमी के साथ सरकार को भी गंभीरता दिखाते हुए ठोस एवं नीतिसंगति कदम उठाने होंगे। तब ही इस विश्वव्यापी पर्यावरण और जलवायु परिवर्तन की समस्या से मुक्ति प्राप्त की जा सकती है।

प्रस्तावना

भारत एक विभिन्नता में एकता वाला देश रहा है जिसमें न केवल विविध जाति ,प्रजाति , धर्म, भाषाएं पाई जाती है बल्कि भौगोलिक, सामाजिक और आर्थिक विभिन्नताएं भी पाई जाती है। वर्तमान में पश्चिमीकरण, नगरीकरण, औद्योगिकरण, सांस्कृतिकरण तथा वैश्वीकरण की दूधिया रोशनी में रेड कारपोरेट परी प्रगति और विकास के पुण्य धाम में चहलकदमी कर रहा है। फिर कौन से कारण हैं जिनके चलते हैं हमारा पर्यावरण और जलवायु परिवर्तन जैसी विशाल समस्याओं के समाधान करने में मानव बेबस महसूस कर रहा है। आज देश की सर्वाधिक गंभीर समस्या तीव्र जनसंख्या वृद्धि, गिरती शिक्षा, स्वास्थ्य, बेरोजगारी, पर्यावरण और जलवायु परिवर्तन की तो है पर सबसे अधिक गंभीर समस्या पर्यावरण और जलवायु की सुरक्षा और संरक्षण की है । माना कि यह चुनौती केवल भारत के समक्ष ही नहीं बल्कि संपूर्ण विश्व के समक्ष है। पर्यावरण और जलवायु संरक्षण को महान यूनानी दार्शनिक सुकरात ने सर्वश्रेष्ठ शैक्षिक विचार व्यक्त किया है। "वही व्यक्ति सर्वाधिक धनवान है जो प्रकृति की संपदा का सामग्री के रूप में सबसे कम उपयोग करता है।"[1] भारत में पर्यावरण संरक्षण संबंधित अज्ञानता के विषय में क्या अंधाधुंध पर्यावरण, प्रकृति या वनो का दोहन हो रहा है। वनों की कटाई तथा औद्योगिक माफियाओं के माध्यम से जल, ध्वनि और वायु प्रदूषण द्वारा देश के प्राकृतिक पर्यावरण का विनाश हो रहा है। जबकि कई वर्ष पूर्व बीबीसी की एक विश्व प्रसारण सेवा द्वारा भारत की संदर्भ में यह चेतावनी दी गई थी कि, "औसतन प्रत्येक व्यक्ति 24 घंटे में 50 बार पर्यावरण को प्रदूषित करता है।" एक वैश्विक चुनौती के रूप में भी पर्यावरण और जलवायु संरक्षण पर शैक्षिक और सांस्कृतिक अध्ययन करना अति आवश्यक है।

पर्यावरण शब्द अंग्रेजी के Environment का हिंदी रूपांतर है जोकि परि़आवरण से मिलकर बना है। जिसका अर्थ है 'चारो ओर से ढका हुआ। अर्थात जीव, जंतु और पादपों को चारों ओर से घेरे हुए जो भी भौतिक-अभौतिक पदार्थ या वस्तु है वह सम्मिलित रूप से उस वस्तु का पर्यावरण हैं। रोस के अनुसार,"पर्यावरण कोई भी बाहरी शक्ति है जो हमें प्रभावित करती है ।"[2] प्रकृति में सभी जीव अपने चारों ओर अनेक प्राकृतिक शक्तियों पदार्थों जैसे- चांद, तारे , पहाड़, नदी, ताप तथा सामाजिक सांस्कृतिक तत्वों जैसे सामाजिक समूह, संस्था, समिति तथा परंपरा धर्म लोकाचार, नैतिकता मूल्यों आदि से घिरे हुऐ हैं जो उनका पर्यावरण कहलाता है। जिंसबर्ट ने कहा है कि, "पर्यावरण वह सब कुछ है जो किसी वस्तु के चारों ओर से जुड़े हुए हैं और उसे प्रत्यक्ष रूप से प्रभावित कर रहा है।"[3] इससे यह स्पष्ट होता है कि पर्यावरण में धरती पर भौतिक, प्राकृतिक तथा मानव निर्मित वस्तुओं से जीवो को चारों ओर से घेरे हुए हैं और उन्हें प्रभावित करती है। उपर्युक्त कर्म और गुण के आधार पर संपूर्ण पर्यावरण का वर्गीकरण किया जा सकता है। पर्यावरण समाजशास्त्री लैनडिश ने निम्न प्रकार से वर्गीकृत किया है:

प्राकृतिक पर्यावरण

प्रकृति निर्मित शक्तियों जैसे भूमि, सूर्य, चंद्रमा ,तारे , पर्वत, समुद्र, जल वायु, पेड़-पौधे पशु-पक्षी, बाढ़, ज्वालामुखी, भूकंप, पठार इत्यादि।

सामाजिक पर्यावरण

जीव समाज निर्मित अंतः क्रिया एवं अंतर्संबंधों द्वारा संपन्न समाज सेवा संगठन समिति, संस्था में जो मानव समाज को जन्म से मृत्युपर्यंत प्रभावित करती है।

सांस्कृतिक पर्यावरण

मानव समाज में संपन्न सभी सांस्कृतिक तत्वों जैसे धर्म, अध्यात्म, परंपराओं, लोकाचार, उत्सव त्योहार, कानून, प्रौद्योगिकी, कला, व्यवहार, तत्व, नेतृत्व और मूल्य जिनके अनुभव आश्रित ज्ञान द्वारा मानव संचालित और नियंत्रित होता है।"[4] अर्थात पर्यावरण में सभी तत्वों को भौतिक, प्राकृतिक तथा मानव निर्मित वस्तुएं सम्मिलित है जो जीवो को चारों ओर से घेरे हुए हैं और उन्हें प्रभावित और नियंत्रित करती हैं।

जलवायु परिवर्तन पृथ्वी के औसत तापमान में हो रही वृद्धि से है। कारण पृथ्वी के चारों ओर व्याप्त गैसों का कवच ही वायुमंडल है। वायुमंडल में मौजूद ग्रीन हाउस गैसें सूर्य की कुछ किरणों को परावर्तित होने से रोक लेती हैं । तब ही पृथ्वी पर गर्मी रहती है। यदि सूर्य से आने वाली सूर्य की सभी किरणें परावर्तित हो जाएं तो पृथ्वी पर इतनी ठंड होगी कि इंसानों का तो क्या बहुत से जीव जंतु भी पृथ्वी पर नहीं रह पाएंगे खेती करना भी आसान नहीं होगा फिर लोगों का पेट भर पाना संभव नहीं हो पाएगा। मानव के पर्यावरण के विरुद्ध कार्यों के चलते ग्रीन हाउस गैसों जैसे कार्बन डाइऑक्साइड, मीथेन, जलवाष्प, ओजोन, नाइट्रोजन ऑक्साइड और क्लोरोफ्लोरोकार्बन (सीएफसी) शामिल है जो सूर्य की किरणों को ज्यादा सोख लेती है। इस तरह पृथ्वी का तापमान बढ़ने लगा यहीं से जलवायु परिवर्तन की समस्या शुरू हुई । इनमें सबसे ज्यादा खतरनाक CO_2 है जो पर्यावरण में लंबे समय तक बनी रहती है । इंसानी गतिविधियों से जो भी CO_2 पैदा हुई उसकी बड़ी वजह जीवाश्म ईंधन का प्रयोग है। जैसे कोयला डीजल पेट्रोल और जमीन से निकलने वाली गैसों का अत्यधिक प्रयोग करना है। 1750 में औद्योगिक क्रांति की शुरुआत से लेकर अब तक हमारे पर्यावरण में CO_2 की मात्रा 30% तक बढ़ गई है जितनी CO_2 आज हमारे पर्यावरण में है उतनी पृथ्वी के 8 लाख साल के इतिहास में कभी नहीं रही। समस्या का मूल कारण कार्बन को सोखने वाले जंगलों को अंधाधुंध तरीके से काटना है। विश्व मौसम विज्ञान संगठन का कहना है कि व्यापक औद्योगिकरण शुरू होने के पहले के मुकाबले पृथ्वी का तापमान 1 डिग्री सेल्सियस तक बढ़ गया है। सर्वे में कहा गया है कि 1850 से लेकर इस सदी के अंत तक पृथ्वी का तापमान में 1.5 डिग्री सेल्सियस की वृद्धि हो सकती है। यदि यह बदलाव 2% तक पहुंच गया तो मानव बर्बादी के मुहाने पर होगा । वैश्विक तापन में वृद्धि के कारण ध्रुवीय प्रदेशों की बर्फ पिघल रही है जिसके कारण समुद्र का जलस्तर बढ़ रहा है । सन 2005 से 2015 के बीच हर साल समुद्र का जल स्तर 3.6 मिली मीटर की वृद्धि के साथ बड़ा है । यह ऐसे ही वृद्धि होती रही तो दुनिया के कई देश और शहर जलमग्न हो जाएंगे । बढ़ते तापमान की वजह से मौसम में अनेक बदलाव देखने को मिल रहे हैं । जैसे - बे मौसम बरसात का होना, अत्यधिक सूखा, अत्यधिक बाढ़ आना और तूफानों का आना इत्यादि।

जब मानव ने प्रकृति की गोद में जीव और वनस्पति जगत के साथ पृथ्वी पर निवास करना आरंभ किया उसका पर्यावरण जलवायु, मिट्टी और ऊर्जा तथा प्रदूषणरहित थे। किंतु धीरे-धीरे उसने जब आग उत्पन्न करना, घर बनाना, पहिए की खोज की तब से लोग वनों को काटना आरंभ किये।मस्तिष्क ज्ञान से विज्ञान की दशा में बढ़ते हुए यह करोड़ों वर्ष की यात्रा में जीव से इंद्रियों महाशक्ति संपन्न और प्रकृति का विश्व विजेता बना। हालांकि विकासवाद की समग्र प्रक्रिया में उसने अनेक वैज्ञानिक चमत्कार किए जिसमें प्रकृति का आकार और गतिविधियां सूर्य और उसके ग्रह नक्षत्रों तथा समस्त ब्रह्मांड की आंतरिक शक्तियां दूरबीन गुरुत्वाकर्षण चंद्रयान राकेट भाप इंजन मशीनरी और आधुनिकतम संचार प्रौद्योगिकी इत्यादि किंतु जैसे कि संस्कृति सूक्ति है "अति सर्वत्र वर्जयेत्", पूर्वजों की विपरीत दशा में प्रकृति के विपरीत विगत एक शताब्दी में आधुनिक मानव ने अपने जीवन के सभी क्षेत्रों में सामाजिक आर्थिक क्षेत्र में संतत उन्नति हेतु पर्यावरण को इतना परिवर्तित कर दिया कि पर्यावरण और जलवायु का संतुलन ही बिगड़ गया और प्राकृतिक- पारिस्थितिकी तंत्र कृत्रिमता की ओर बढ़ता चला गया । परिणाम स्वरूप प्रदूषण से वन्य जीव और वनस्पति की अनेकों प्रजातियां आंशिक रूप से विलुप्त होती जा रही है । "प्राकृतिक संसाधनों का अंधाधुंध दोहन, जनसंख्या वृद्धि ओजोन परत का क्षरण, जलवायु परिवर्तन और वैश्विक तापन में वृद्धि के लिए जिम्मेदार हैं। विनाशक ग्रीन हाउस गैसों में अम्लीय वर्षा, विषैले कृषि रसायनों और गैस उत्सर्जन की विनाशकारी प्रक्रिया निरंतर गतिशील है और मानव प्रकृति से स्वतंत्र होने की नकारात्मक कोशिश में उल्टे प्रकृति का दास होता जा रहा है।"[5]

मनुष्य प्रकृति का जितना ज्यादा दोहन कर रहा है। प्रकृति उतना ही परिवर्तित होकर मनुष्य के ऊपर विपरीत असर डाल रही है । पर्यावरण प्रदूषण और संरक्षण की अध्ययन प्रक्रिया में हमें वातावरण का उल्लेख करना भी आवश्यक है। जो निम्नलिखित प्रकार से स्पष्ट है-

1. स्थलमंडल जिसमें पृथ्वी की ऊपरी परत रेत, मिट्टी ,चट्टान, इत्यादि।

2. जलमंडल जिसमें जल स्रोत नदी, तालाब, समुद्र और भूगर्भ जल इत्यादि।

3. वायुमंडल जोकि स्थलमंडल व जलमंडल की ऊपर परत लगभग 320 किलोमीटर तक स्थित है जिसमें मुख्यतः दो गेसें ऑक्सीजन और नाइट्रोजन का अस्तित्व जीव जगत की प्राणवायु के रूप में उपस्थित है। अन्य कई गैस भी पर्यावरण संतुलन हेतु मानसिक रूप से मिश्रित हैं। इसी वातावरण में पृथ्वी की सतह के 9.6 किलोमीटर ऊपर और इतनी ही नीचे का भाग जल मंडल के नाम से जाना जाता है।"[6]

सामान्यतः पर्यावरण प्रदूषण का अर्थ है "पर्यावरण समस्त घटक भौतिक ,रासायनिक या जैविक लक्षणों का वह अवांछनीय परिवर्तन है जो मानव और अन्य समस्त जीवो की लाभदायक दशाओं के विरुद्ध है उनकी जैविक प्राकृतिक सांस्कृतिक तथा स्थाई अस्थाई अन्य समस्त संस्था धर्म की हानि पहुंचाना ही पर्यावरण प्रदूषण कहलाता है। अर्थात प्रदूषण प्राकृतिक पर्यावरण की गुणवत्ता में प्रतिकूल परिवर्तन या कृत्रिम मिश्रण है।"[7]

पर्यावरण प्रदूषण निम्नलिखित प्रकार से होता है;

1- जल प्रदूषण- जनतंत्र औद्योगिक कृषि, ईधन ,दहन डिटर्जेंट्स, नाभिकीय ऊर्जा तथा सूक्ष्मजीव अवशिष्ट पदार्थ का अशुद्ध जल मिश्रण जल प्रदूषण है।

2- वायु प्रदूषण - वायु के भौतिक, रासायनिक और जैविक भाग का वह प्रतिकूल परिवर्तन जो धूंआ, गैस, दुर्गंध ,विषैले सूक्ष्म धूल या कारखाने पर एडजस्ट पंखों की विषेली वायु जो कि प्रदूषक के रूप में प्रकृति और जीवो को गंभीर हानि पहुंचाती है।

3- ध्वनि प्रदूषण- तेज ध्वनि शोर जो ध्वनि मापक इकाई डेसिबल के मानक प्राय शून्य से **120** से अधिक तीव्र हो जैसे मशीन मोटर रेल हवाई जहाज जेट राकेट सिनेमा रेडियो डीजे हाउस लाउडस्पीकर जागरण नमाज अजान इत्यादि ध्वनि प्रदूषण का कारण है।

4- मृदा प्रदूषण - भूमि कटाव कीटनाशक रसायन उर्वरक फसल रोग जो मृदा उर्वरक का क्षरण करते हैं। मृदा प्रदूषण में आते हैं।

5- रेडियोधर्मी प्रदूषण - परमाणु के अंदर असीम शक्ति(ऊर्जा) का जीव के विरुद्ध प्रयोग और प्रभाव की तीव्रता से कई किलोमीटर तक जीव और वनस्पति वर्ग की समाप्ति । यहां तक कि मानव विनाश की संभावना भी परमाणु परीक्षण विस्फोट रिसाव का प्रदूषण है।"[8]

पर्यावरण प्रदूषण के संक्षिप्त विवरण के उपरांत प्रदूषण नियंत्रण और संरक्षण को भी यहां भारत के विशेष संदर्भ में उल्लेखित किया जाना शामिल होगा । पर्यावरण और जलवायु परिवर्तन भारत की ही नहीं बल्कि वैश्विक सामाजिक समस्या बन गई है जिससे एक चुनौती के रूप में भारत में लिया जाना आवश्यक है जिसका मुख्य उत्तरदायित्व समाज के साथ-साथ आम और खास आदमी के साथ सरकार की भी जिम्मेदारी बनती है । समय-समय पर सरकार द्वारा उठाए गए प्रयास या ठोस कदम निम्न प्रकार से हैं-

1. जल प्रदूषण निवारण एवं नियंत्रण अधिनियम 1974
2. जल प्रदूषण निवारण एवं नियंत्रण उपकरण अधिनियम 1977
3. वायु प्रदूषण निवारण एवं नियंत्रण अधिनियम 1981
4. पर्यावरण सुरक्षा अधिनियम 1988

सरकार द्वारा उपर्युक्त प्रयासों के अतिरिक्त "जलवायु ध्वनि मृदा परमाणु स्वच्छ जल तथा समुद्र तटीय जल के अध्ययन प्रबंधन और पर्यावरण प्रदूषण नियंत्रण के अनेक उपयोग के अतिरिक्त विभिन्न राज्यों ने भी अपने क्षेत्राधिकार में अनेक उपाय शुरू किए हैं।"[8]

भूमि वन जैव विविधता प्राकृतिक संपदा संपन्न भारत में पर्यावरण प्रदूषण और जलवायु परिवर्तन की समस्या दिनोंदिन गंभीर होती जा रही है । मुख्य बिंदु की तह में जाने और गंभीर चिंतन के उपरांत एक मुख्य कारण राजनीतिक इच्छाशक्ति का अभाव स्पष्ट होता है हालांकि नौकरशाही सामाजिक बौद्धिक शिथिलता स्वार्थी और जड़ मानसिक निरक्षरता ग्रामीण और सरल समाज की अज्ञानता तथा अंधविश्वास प्रकृति के साथ ही औद्योगिकरण एवं नगरीकरण की तीव्रता ने भी इस गंभीर समस्या वृद्धि आग में घी डालने का काम किया है । पर्यावरण संरक्षण के प्रति समाज और सरकार दोनों ही बेबस होकर रह गए हैं।

वर्तमान में सरकार ही नहीं बल्कि विश्व मानव समाज और देश वासियों को पर्यावरण प्रदूषण और जलवायु परिवर्तन के प्रति जागरूक होने की आवश्यकता है । साथ ही वैज्ञानिकों समाजशास्त्री बौद्धिक शिक्षाविद्, इतिहासकारों साहित्यकारों ,संस्कृतीकरण और सभी पर्यावरणविद अदम्य जीवट तथा दृढ़ इच्छाशक्ति के साथ महात्मा गांधी तथागत, गौतम बुद्ध की लोकनुकंपा भावना कहां का अनुसरण करें। गरीबी भुखमरी ,उच्च जन्म और मृत्यु दर डायबिटीज हृदय रोग कैंसर नेत्रहीन ता बेरोजगारी भ्रष्टाचार इत्यादि की भूमि बनकर रह गए हैं। आज विश्व मानव विकास सूचकांक में भारत अपने पड़ोसी देशों से भी नीचे पहुंच गया है । हम एक आशावादी समाज के अंग हैं और इसकी ताजा आईआईटी मद्रास के प्रोफेसर देवदास मैनन ने यदा-कदा सृष्टि विनाश की शुद्ध भविष्यवाणी की है। वर्तमान में समय की पुकार है कि समाज और सरकार पर्यावरण प्रदूषण और जलवायु परिवर्तन की गंभीरता को समझें। बुजुर्गों के अनुभव पर आधारित ज्ञान का सम्मान करते हुए युवा शक्ति का सदुपयोग करें नहीं तो अज्ञानता समस्या को और मजबूत बनाने वाली है।

"जलवायु परिवर्तन और वैश्विक ताप वृद्धि की भयानक स्थिति के विरुद्ध विश्व समुदाय की मार्मिक अपील के बावजूद विश्व के 5 सर्वाधिक प्रदूषक देशों में भारत, अमेरिका, जापान और रूस की मंद गति से बहुत आगे खतरनाक सीमा तक बढ़कर चीन के 44% की प्रदूषण वृद्धि से मामूली अंतर का पर 43% की वृद्धि कर अपनी और विश्व मानव समाज की नींद में खलल अवश्य डाल सकता है।"[9]

अब पर्यावरण प्रदूषण और जलवायु परिवर्तन की चुनौती सामूहिक रूप से सोचे समझे जाने का विषय है। हमें प्रकृति के उस नियम को नहीं भूलना चाहिए जिसके अनुसार जो भूखे वह जोड़े भी जब प्रकृति के संसाधनों का इस्तेमाल करते हैं तो उसका संरक्षण भी सबकी जिम्मेदारी है। पृथ्वी पर जीवन को गति देने में समुद्र की भी महत्वपूर्ण भूमिका होती है लेकिन प्रदूषण की मार केवल वायुमंडल या जैव मंडल में ही नहीं झेल रहा वरन जलमंडल भी प्रदूषित हो रहा है। एक नए अध्ययन में शोधकर्ताओं ने दावा किया है कि "पृथ्वी के सबसे गहरे स्थान अटाकामा ट्रेंच तक प्रदूषण पहुंच गया है। वैज्ञानिकों ने दावा किया है कि प्रशांत महासागर में 8065 मीटर अर्थात 26460 फीट की गहराई पर मानव निर्मित प्रदूषण पाया है।"[10] पेरू और चिल्ली के तट से 160 किलोमीटर दूर यह समुद्री खाई मौजूद है । यह गहराई मोटे तौर पर एवरेस्ट की ऊंचाई के बराबर है ।

संयुक्त राष्ट्र पर्यावरण कार्यक्रम के कार्यकारी निदेशक रिंग एंडरसन का कहना है कि ताजा हालात की बात करें तो 1000000 पौधे और जानवरों की प्रजातियां के विलुप्त होने का खतरा मंडरा रहा है। वैज्ञानिकों के अनुसार, "मानव के अच्छे स्वभाव और संतुलित पर्यावरण के लिए जैव विविधता का होना बेहद आवश्यक है। हाल ही में प्रोसीडिंग्स ऑफ द नेशन अकैडमी आफ साइंसेज के अध्ययन में सामने आया है कि अगले 20 वर्षों में वन्यजीवों की 500 प्रजातियां विलुप्त हो जाएंगे अगर कुदरत के साथ इंसानी खिलवाड़ नहीं होता तो यह प्रजातियां अगले 10000 साल तक जीवित रहती। वही 515 प्रजातियां की आबादी 1000 से भी कम मिली है।"[11]

निष्कर्ष

पर्यावरण प्रदूषण और जलवायु परिवर्तन आज वैश्विक समस्या बन गई है। जिसके प्रति सामूहिक रूप से लोगों को सोचना और समझना होगा। विकसित और विकासशील देशों को इस पर गंभीरता से विचार मंथन करके ठोस एवं कारगर कदम उठाने होंगे। मुख्यतः औद्योगिकरण की प्रक्रिया में विश्वास रखने वाले देशों को आगे आना होगा। विश्व मानव समुदाय को प्रकृति के साथ हो रहे खिलवाड़ को बंद करना होगा। प्लास्टिक यूज, पेस्टिसाइड का अत्यधिक प्रयोग, औद्योगिकरण ,वृक्षों का काटना इत्यादि पर समाज को और सरकार को मंथन करना होगा। जब इंसान सामूहिक रूप से सकारात्मक दृष्टिकोण लेकर पर्यावरण प्रदूषण और जलवायु प्रवृत्त परिवर्तन के प्रति जागरूक होकर आगे बढ़ेगा तब ही निश्चित रूप से इस वैश्विक तापन और पर्यावरण प्रदूषण की समस्या से निजात प्राप्त की जा सकती है। आज जलवायु परिवर्तन और पर्यावरण प्रदूषण की समस्या को हल करना अत्यंत आवश्यक है। ध्यान रहे -आज बाढ़ आना, सूखा पड़ना ,समुद्र में तूफान आना, भूकंप की प्रवृत्ति बने रहना चक्रवात आना ,भूस्खलन होना, समुद्र जलस्तर में वृद्धि इत्यादि जैसी प्राकृतिक आपदाएं बढ़ती जा रही हैं । आम आदमी, खास आदमी के साथ सरकारों को भी गंभीरता दिखाते हुए पर्यावरण प्रदूषण और जलवायु परिवर्तन के प्रति ठोस एवं कारगर कदम उठाने होंगे ।सबकी जबावदेही सुनिश्चित की जाये तब ही विश्वव्यापी इस समस्या से मुक्ति प्राप्त की जा सकती है । पर्यावरण ,प्रकृति और जलवायु को मानव समाज, जीव-जंतुओं और पादपों के अनुकूल बनाया जा सकता है।

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11. डॉ अनिल प्रकाश जोशीः संस्थापक - हिमालयन एनवायरनमेंट स्टडीज एंड कंजर्वेशन ऑर्गेनाइजेशन देहरादून

औद्योगिक विकास और पर्यावरण क्षरण

डा0 सुरेश चन्द सिंघल[1] एवं डा0 अनिल सक्सैना[2]

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सारांश

औद्योगिक विकास और पर्यावरण क्षरण अक्सर साथ-साथ चलते हैं। औद्योगीकरण ने कई नए उत्पादों और सेवाओं का निर्माण किया है, जिसने कई तरह से लोगों के जीवन में सुधार किया है। हालांकि इससे पर्यावरण को भी काफी नुकसान हुआ है। उद्योगों के विकास के परिणामस्वरूप प्रदूषण, वनों की कटाई, मिट्टी की गिरावट और जल प्रदूषण में वृद्धि हुई है। औद्योगिक गतिविधियों में अक्सर जहरीले रसायनों और प्रदूषकों को हवा और पानी में छोड़ना शामिल होता है, जो मानव स्वास्थ्य और पर्यावरण पर गंभीर नकारात्मक प्रभाव डाल सकता है।

पर्यावरणीय गिरावट के अलावा, औद्योगिक विकास से संसाधनों की कमी भी हो सकती है। उद्योगों को महत्वपूर्ण मात्रा में प्राकृतिक संसाधनों की आवश्यकता होती है, जैसे कि जीवाश्म ईंधन, खनिज और पानी। इन संसाधनों के अत्यधिक उपयोग और दुरुपयोग से उनकी कमी हो सकती है और पर्यावरणीय समस्याएं बढ़ सकती हैं। औद्योगिक विकास और पर्यावरण संरक्षण के बीच संतुलन बनाना आवश्यक है। यह स्थायी प्रथाओं के कार्यान्वयन के माध्यम से प्राप्त किया जा सकता है, जैसे नवीकरणीय ऊर्जा स्रोतों का उपयोग करना, अपशिष्ट और प्रदूषण को कम करना और स्थायी संसाधन प्रबंधन प्रथाओं को बढ़ावा देना। सरकारें, व्यवसाय और व्यक्ति सभी स्थायी औद्योगिक विकास को बढ़ावा देने और पर्यावरण की रक्षा करने में भूमिका निभा सकते हैं।

प्रस्तावना

औद्योगिक विकास निस्संदेह महत्वपूर्ण आर्थिक लाभ और तकनीकी प्रगति लाया है, लेकिन इसके परिणामस्वरूप गंभीर पर्यावरणीय गिरावट भी हुई है। पर्यावरण पर औद्योगिक विकास के परिणामों में वायु और जल प्रदूषण, वनों की कटाई, मिट्टी का क्षरण और ग्रीनहाउस गैसों का उत्सर्जन शामिल है।

वायु प्रदूषण औद्योगिक विकास से जुड़ी एक महत्वपूर्ण पर्यावरणीय चिंता है। बिजली संयंत्र, कारखाने और परिवहन जैसे उद्योग हानिकारक गैसों और कणों का उत्सर्जन करते हैं जो वायु प्रदूषण में योगदान करते हैं। वायु प्रदूषण मनुष्यों और जानवरों के लिए श्वसन रोग और अन्य स्वास्थ्य समस्याओं का कारण बनता है।

जल प्रदूषण औद्योगिक विकास से जुड़ी एक अन्य पर्यावरणीय समस्या है। उद्योग हानिकारक रसायनों, भारी धातुओं और अन्य प्रदूषकों को नदियों, झीलों और महासागरों में छोड़ते हैं, जिससे जल निकायों का प्रदूषण होता है। प्रदूषण न केवल जलीय जीवन को नुकसान पहुँचाता है बल्कि मानव उपभोग के लिए पानी की गुणवत्ता को भी प्रभावित करता है।

औद्योगिक विकास ने भी वनों की कटाई में योगदान दिया है, जिसका पर्यावरण पर गंभीर प्रभाव पड़ा है। औद्योगिक उद्देश्यों के लिए जंगलों की सफाई से कई जानवरों के आवास कम हो गए हैं, और इसके परिणामस्वरूप जैव विविधता में भी गिरावट आई है। वनों की कटाई भी वातावरण से कार्बन डाइऑक्साइड को अवशोषित करने वाले पेड़ों की संख्या को कम करके जलवायु परिवर्तन में योगदान करती है।

मृदा क्षरण औद्योगिक विकास से जुड़ी एक अन्य पर्यावरणीय समस्या है। रसायनों और अन्य प्रदूषकों का औद्योगिक उपयोग मिट्टी की गुणवत्ता को कम करता है, जिससे मिट्टी की उर्वरता और उत्पादकता में गिरावट आती है। मिट्टी का क्षरण न केवल पर्यावरण को नुकसान पहुंचाता है बल्कि कृषि के लिए कृषि योग्य भूमि की उपलब्धता को भी कम करता है।

विकासशील दुनिया और औद्योगिक गतिविधियों की प्रदूषणकारी गतिविधियाँ

विकासशील दुनिया ने हाल के दशकों में महत्वपूर्ण औद्योगिक विकास देखा है, जिससे आर्थिक लाभ, तकनीकी प्रगति और रोजगार सृजन हुआ है। हालाँकि, इस वृद्धि ने औद्योगिक क्षेत्र के भीतर भारी प्रदूषणकारी गतिविधियों में भी योगदान दिया है।

इसका एक कारण यह है कि कई विकासशील देशों में यह सुनिश्चित करने के लिए बुनियादी ढांचे, संसाधनों और विनियमों की कमी है कि उनके उद्योग पर्यावरण की दृष्टि से स्थायी तरीके से संचालित होते हैं। नतीजतन, इन देशों के उद्योग अक्सर पुरानी तकनीकों का उपयोग करते हैं और अपने संचालन को चलाने के लिए कोयले जैसे प्रदूषणकारी ऊर्जा स्रोतों पर निर्भर रहते हैं।

विकासशील दुनिया में औद्योगिक क्षेत्र के भीतर अत्यधिक प्रदूषणकारी गतिविधियों में योगदान देने वाला एक अन्य कारक सस्ते उत्पादों की मांग है। कई बहुराष्ट्रीय निगम कम श्रम लागत और ढीले पर्यावरण नियमों के कारण अपने विनिर्माण कार्यों को विकासशील देशों में ले जाते हैं, जो उन्हें कम लागत पर माल का उत्पादन करने में सक्षम बनाता है। हालांकि, यह अक्सर पर्यावरण और मानव स्वास्थ्य की कीमत पर आता है।

विकासशील दुनिया में औद्योगिक क्षेत्र के भीतर अत्यधिक प्रदूषणकारी गतिविधियों के परिणाम महत्वपूर्ण हैं। वायु और जल प्रदूषण श्वसन संबंधी बीमारियों और अन्य स्वास्थ्य समस्याओं का कारण बनता है, और मिट्टी और प्राकृतिक संसाधनों के क्षरण से पर्यावरण और उन समुदायों की आजीविका पर लंबे समय तक प्रभाव पड़ सकता है जो उन पर निर्भर हैं। इसके अलावा, औद्योगिक क्षेत्र से ग्रीनहाउस गैसों का उत्सर्जन जलवायु परिवर्तन में योगदान देता है, जो पूरे ग्रह को प्रभावित करता है।

इन मुद्दों को हल करने के लिए, विकासशील दुनिया में सरकारों को स्थायी बुनियादी ढांचे में निवेश करने, पर्यावरणीय नियमों को लागू करने और स्वच्छ ऊर्जा स्रोतों को बढ़ावा देने की आवश्यकता है। साथ ही, बहुराष्ट्रीय निगमों को अपने परिचालनों के पर्यावरणीय प्रभाव के लिए जिम्मेदारी लेनी चाहिए, और उपभोक्ताओं को उनके द्वारा खरीदे जाने वाले उत्पादों के पर्यावरणीय प्रभाव पर विचार करना चाहिए। एक साथ काम करके, हम टिकाऊ औद्योगिक विकास को बढ़ावा दे सकते हैं जो अर्थव्यवस्था और पर्यावरण दोनों को लाभ पहुंचाता है।

उद्योगों के प्रकार और संबंधित पर्यावरण प्रदूषण

विभिन्न प्रकार के उद्योग विभिन्न प्रकार के पर्यावरण प्रदूषण उत्पन्न करते हैं। यहाँ उद्योगों और उनके द्वारा उत्पन्न होने वाले पर्यावरण प्रदूषण के कुछ उदाहरण दिए गए हैं:

बिजली संयंत्र - बिजली संयंत्र सल्फर डाइऑक्साइड, नाइट्रोजन ऑक्साइड और कण पदार्थ के उत्सर्जन के माध्यम से वायु प्रदूषण पैदा करते हैं। वे ठंडे पानी और अपशिष्ट उत्पादों के निर्वहन के माध्यम से जल प्रदूषण भी उत्पन्न करते हैं।

रासायनिक निर्माण - रासायनिक निर्माण अस्थिर कार्बनिक यौगिकों, जहरीले रसायनों और भारी धातुओं के उत्सर्जन के माध्यम से वायु और जल प्रदूषण पैदा करता है। रासायनिक निर्माण से निकलने वाले अपशिष्ट उत्पाद मिट्टी और भूजल को भी दूषित कर सकते हैं।

खनन - खनन गतिविधियाँ धूल, भारी धातुओं और जहरीले रसायनों के उत्सर्जन के माध्यम से वायु और जल प्रदूषण उत्पन्न करती हैं। वे मिट्टी के क्षरण और वनों की कटाई में भी योगदान दे सकते हैं।

कृषि - कीटनाशकों, शाकनाशियों और उर्वरकों के उपयोग के माध्यम से कृषि से मिट्टी का क्षरण और जल प्रदूषण हो सकता है। पशुधन की खेती भी मीथेन उत्सर्जन पैदा करती है, जो जलवायु परिवर्तन में योगदान करती है।

कपड़ा निर्माण - कपड़ा निर्माण नदियों और अन्य जल निकायों में जहरीले रसायनों और रंगों के निर्वहन के माध्यम से जल प्रदूषण उत्पन्न करता है। यह पार्टिकुलेट मैटर और ग्रीनहाउस गैसों के उत्सर्जन के माध्यम से वायु प्रदूषण में भी योगदान देता है।

परिवहन - परिवहन क्षेत्र ग्रीनहाउस गैसों, कण पदार्थ, और नाइट्रोजन ऑक्साइड के उत्सर्जन के माध्यम से वायु प्रदूषण में योगदान देता है। यह ध्वनि प्रदूषण भी उत्पन्न करता है, जिसका मानव स्वास्थ्य पर नकारात्मक प्रभाव पड़ सकता है।

निर्माण - निर्माण गतिविधियों से मिट्टी का कटाव और वनों की कटाई हो सकती है। वे धूल और अन्य कणों के उत्सर्जन के माध्यम से भी वायु प्रदूषण उत्पन्न करते हैं।

अंत में, विभिन्न प्रकार के उद्योग विभिन्न प्रकार के पर्यावरण प्रदूषण उत्पन्न करते हैं, और आर्थिक विकास की योजना बनाते समय औद्योगिक गतिविधियों के पर्यावरणीय प्रभाव पर विचार करना आवश्यक है। स्थायी प्रथाओं को अपनाकर, उद्योग अपने पर्यावरणीय प्रभाव को कम कर सकते हैं और एक स्वस्थ और अधिक टिकाऊ भविष्य को बढ़ावा दे सकते हैं।

उद्योगों का देश के आर्थिक विकास में योगदान

उद्योग देश के आर्थिक विकास में महत्वपूर्ण भूमिका निभाते हैं। यहां कुछ ऐसे तरीके दिए गए हैं जिनसे उद्योग किसी देश के आर्थिक विकास और विकास में योगदान करते हैं:

रोजगार सृजन - उद्योग लोगों के लिए रोजगार के अवसर पैदा करते हैं, जिससे जीवन स्तर में सुधार होता है और गरीबी कम होती है।

सकल घरेलू उत्पाद में वृद्धि - उद्योगों के विकास से देश के सकल घरेलू उत्पाद (जीडीपी) में वृद्धि होती है। ऐसा इसलिए है क्योंकि उद्योग वस्तुओं और सेवाओं का उत्पादन करते हैं जो देश के समग्र आर्थिक उत्पादन में योगदान करते हैं।

निवेश के अवसर - उद्योगों का विकास घरेलू और विदेशी दोनों निवेशकों के लिए निवेश के अवसर प्रदान करता है। इससे देश में पूंजी प्रवाह में वृद्धि होती है, जो आर्थिक विकास को और बढ़ावा दे सकता है।

तकनीकी प्रगति - उद्योग नवाचार और तकनीकी प्रगति को बढ़ावा देते हैं, जिससे नए उत्पादों और सेवाओं का निर्माण हो सकता है। इससे उत्पादकता और दक्षता में वृद्धि हो सकती है, जो अंततः अर्थव्यवस्था को लाभान्वित कर सकती है।

निर्यात आय - उद्योग निर्यात के माध्यम से विदेशी मुद्रा आय उत्पन्न करने में योगदान करते हैं। यह उन देशों के लिए विशेष रूप से सच है जो प्राकृतिक संसाधनों से समृद्ध हैं या किसी विशेष उद्योग में प्रतिस्पर्धात्मक लाभ रखते हैं।

अवसंरचना विकास - उद्योगों के विकास से परिवहन, संचार और ऊर्जा जैसे बुनियादी ढांचे का विकास होता है। बदले में, इसका अर्थव्यवस्था के अन्य क्षेत्रों पर सकारात्मक प्रभाव पड़ सकता है।

अंत में, उद्योग किसी देश के आर्थिक विकास में महत्वपूर्ण भूमिका निभाते हैं, रोजगार सृजन, सकल घरेलू उत्पाद की वृद्धि, निवेश के अवसर, तकनीकी प्रगति, निर्यात आय और बुनियादी ढांचे के विकास में योगदान करते हैं। सरकारों को यह सुनिश्चित करते हुए सतत औद्योगिक विकास को बढ़ावा देने का प्रयास करना चाहिए कि औद्योगिक गतिविधियों का पर्यावरणीय प्रभाव कम से कम हो।

शून्य कार्बन अर्थव्यवस्था

एक शून्य-कार्बन अर्थव्यवस्था एक ऐसी आर्थिक प्रणाली है जो किसी कार्बन उत्सर्जन या शुद्ध ग्रीनहाउस गैस उत्सर्जन का उत्पादन नहीं करती है। यह भविष्य की अर्थव्यवस्था का एक दृष्टिकोण है जो जलवायु परिवर्तन में योगदान किए बिना पर्यावरण के साथ सामंजस्य स्थापित करता है। रणनीतियों के संयोजन के माध्यम से एक शून्य-कार्बन अर्थव्यवस्था प्राप्त की जा सकती है, जिसमें निम्न शामिल हैं:

नवीकरणीय ऊर्जा

नवीकरणीय ऊर्जा वह ऊर्जा है जो प्राकृतिक संसाधनों से आती है जो समय के साथ भर जाती हैं और समाप्त नहीं होती हैं, जैसे कि धूप, हवा, बारिश, भूतापीय गर्मी और ज्वार। अक्षय ऊर्जा जीवाश्म ईंधन जैसे गैर-नवीकरणीय ऊर्जा स्रोतों का एक विकल्प है, जो परिमित हैं और जलवायु परिवर्तन में योगदान करते हैं।

1. **सौर ऊर्जा** - सौर ऊर्जा सूर्य के विकिरण से प्राप्त होती है, और बिजली उत्पन्न करने के लिए सौर पैनलों का उपयोग करके इसका उपयोग किया जा सकता है।
2. **पवन ऊर्जा** - बिजली पैदा करने के लिए पवन टर्बाइनों का उपयोग करके पवन ऊर्जा का उपयोग करके पवन ऊर्जा प्राप्त की जाती है।
3. **पनबिजली शक्ति** - पनबिजली उत्पन्न करने के लिए बहते पानी की ऊर्जा का उपयोग करके पनबिजली शक्ति प्राप्त की जाती है।
4. **भूतापीय ऊर्जा** - भूतापीय ऊर्जा बिजली पैदा करने के लिए पृथ्वी के कोर से गर्मी में टैप करके प्राप्त की जाती है।
5. **बायोमास ऊर्जा** - बायोमास ऊर्जा बिजली पैदा करने के लिए लकड़ी, फसलों और कचरे जैसे कार्बनिक पदार्थों को जलाकर प्राप्त की जाती है।

अक्षय ऊर्जा इसके कई लाभों के कारण तेजी से लोकप्रिय हो रही है, जिनमें निम्न शामिल हैं:

1. **ग्रीनहाउस गैस उत्सर्जन में कमी** - नवीकरणीय ऊर्जा स्रोत कार्बन डाइऑक्साइड या अन्य ग्रीनहाउस गैसों का उत्पादन नहीं करते हैं, जो जलवायु परिवर्तन में योगदान करते हैं।
2. **ऊर्जा सुरक्षा** - नवीकरणीय ऊर्जा स्रोत जीवाश्म ईंधन की कीमत में उतार-चढ़ाव के अधीन नहीं हैं, जिससे वे ऊर्जा का अधिक विश्वसनीय स्रोत बन जाते हैं।
3. **स्थानीय आर्थिक विकास** - नवीकरणीय ऊर्जा परियोजनाओं के विकास से रोजगार सृजित हो सकते हैं और स्थानीय आर्थिक विकास को प्रोत्साहन मिल सकता है।
4. **लागत बचत** - हाल के वर्षों में अक्षय ऊर्जा प्रौद्योगिकियों, जैसे सौर और पवन, की लागत में काफी कमी आई है, जिससे वे अधिक सस्ती और लागत प्रभावी हो गई हैं।
5. **बेहतर वायु गुणवत्ता** - अक्षय ऊर्जा स्रोत वायु प्रदूषकों का उत्पादन नहीं करते हैं, जो वायु की गुणवत्ता में सुधार कर सकते हैं और वायु प्रदूषण से जुड़ी स्वास्थ्य समस्याओं को कम कर सकते हैं।

कुल मिलाकर, नवीकरणीय ऊर्जा कम कार्बन वाली अर्थव्यवस्था में परिवर्तन का एक महत्वपूर्ण घटक है, क्योंकि यह ग्रीनहाउस गैस उत्सर्जन को कम करने, ऊर्जा सुरक्षा को बढ़ावा देने और आर्थिक लाभ प्रदान करने में मदद कर सकता है।

ऊर्जा दक्षता

ऊर्जा दक्षता प्रदर्शन या उत्पादन के समान स्तर को प्राप्त करने के लिए कम ऊर्जा का उपयोग करने का अभ्यास है। इसमें प्रदान की जाने वाली सेवाओं की गुणवत्ता को बनाए रखने या सुधारने के दौरान ऊर्जा खपत को कम करने के लिए प्रौद्योगिकी, डिजाइन और व्यवहार संशोधनों का उपयोग करना शामिल है। ग्रीनहाउस गैस उत्सर्जन को कम करने, ऊर्जा सुरक्षा को बढ़ाने और ऊर्जा बिलों पर पैसे बचाने के लिए ऊर्जा दक्षता एक महत्वपूर्ण रणनीति है।

1. **कुशल प्रकाश व्यवस्था** - पारंपरिक गरमागरम बल्बों को ऊर्जा-कुशल एलईडी बल्बों से बदलकर ऊर्जा की बचत की जा सकती है और बिजली के बिल को कम किया जा सकता है।
2. **इन्सुलेशन** - दीवारों, फर्शों और छतों पर इन्सुलेशन जोड़ने से गर्मी का नुकसान कम हो सकता है और हीटिंग बिल कम हो सकता है।
3. **कुशल उपकरण** - रेफ्रिजरेटर, वाशिंग मशीन और एयर कंडीशनर जैसे ऊर्जा-कुशल उपकरणों का चयन करने से ऊर्जा की बचत हो सकती है और बिजली के बिल में कमी आ सकती है।
4. **भवन डिजाइन** - इमारतों को ऊर्जा-कुशल बनाने के लिए डिजाइन करना, जैसे कि निष्क्रिय सौर डिजाइन और उच्च-प्रदर्शन वाली खिड़कियों का उपयोग करना, हीटिंग और कूलिंग के लिए ऊर्जा की खपत को कम कर सकता है।
5. **परिवहन** - सार्वजनिक परिवहन का उपयोग, कारपूलिंग और ईंधन-कुशल वाहन चलाने से परिवहन से ऊर्जा की खपत और ग्रीनहाउस गैस उत्सर्जन को कम किया जा सकता है।
6. **व्यवहार संशोधन** - व्यवहार में सरल परिवर्तन, जैसे कमरे से बाहर निकलते समय रोशनी बंद करना, ऊर्जा दक्षता में भी योगदान दे सकता है।

ऊर्जा दक्षता के कई लाभ हैं, जिनमें शामिल हैंः

1. **कम ऊर्जा लागत** - ऊर्जा दक्षता उपाय ऊर्जा के बिल को कम करने और समय के साथ पैसे बचाने में मदद कर सकते हैं।
2. **बेहतर आराम** - ऊर्जा-कुशल इमारतें अधिक आरामदायक रहने और काम करने की स्थिति प्रदान कर सकती हैं।
3. **ग्रीनहाउस गैस उत्सर्जन में कमी** - ऊर्जा दक्षता उपायों से ग्रीनहाउस गैस उत्सर्जन को कम करने और जलवायु परिवर्तन से निपटने के प्रयासों में योगदान करने में मदद मिल सकती है।
4. **बढ़ी हुई ऊर्जा सुरक्षा** - ऊर्जा की खपत को कम करने से आयातित ऊर्जा स्रोतों पर निर्भरता कम करने और ऊर्जा सुरक्षा बढ़ाने में मदद मिल सकती है।

कुल मिलाकर, ऊर्जा दक्षता कम कार्बन वाली अर्थव्यवस्था में संक्रमण का एक महत्वपूर्ण घटक है, क्योंकि यह ग्रीनहाउस गैस उत्सर्जन को कम करने, ऊर्जा सुरक्षा बढ़ाने और ऊर्जा बिलों पर पैसे बचाने में मदद कर सकता है।

कार्बन कैप्चर और स्टोरेज

कार्बन कैप्चर एंड स्टोरेज (CCS) एक ऐसी प्रक्रिया है जो बिजली संयंत्रों और औद्योगिक प्रक्रियाओं से कार्बन डाइऑक्साइड उत्सर्जन को कैप्चर करती है, उन्हें स्टोरेज साइट तक पहुँचाती है, और उन्हें भूगर्भीय संरचनाओं में भूमिगत रूप से संग्रहीत करती है। (CCS) इसका लक्ष्य ग्रीनहाउस गैस उत्सर्जन को कम करना और वातावरण में प्रवेश करने से पहले कार्बन डाइऑक्साइड को कैप्चर करके जलवायु परिवर्तन को कम करना है। सीसीएस प्रक्रिया में तीन मुख्य चरण शामिल हैंः

1. **कार्बन कैप्चर** - रासायनिक अवशोषण, झिल्ली पृथक्करण, या क्रायोजेनिक पृथक्करण जैसी तकनीकों का उपयोग करके बिजली संयंत्रों या औद्योगिक प्रक्रियाओं की फ्लू गैस से कार्बन डाइऑक्साइड कैप्चर किया जाता है।
2. **परिवहन** - कैप्चर की गई कार्बन डाइऑक्साइड को पाइपलाइन या अन्य माध्यमों से भंडारण स्थल तक पहुँचाया जाता है।
3. **भंडारण** - कब्जा किए गए कार्बन डाइऑक्साइड को भूगर्भीय संरचनाओं जैसे कि समाप्त तेल और गैस जलाशयों, गहरे खारे संरचनाओं, या अचूक कोयला सीमों में संग्रहीत किया जाता है।

सर्कुलर इकोनॉमी -

एक सर्कुलर इकोनॉमी एक आर्थिक मॉडल है जिसका उद्देश्य कचरे को कम करना और संसाधनों के सतत उपयोग को बढ़ावा देना है। यह कचरे और प्रदूषण को डिजाइन करने, उत्पादों और सामग्रियों को उपयोग में रखने और प्राकृतिक प्रणालियों को पुनर्जीवित करने के सिद्धांतों पर आधारित है। एक चक्रीय अर्थव्यवस्था में, संसाधनों को पुनर्चक्रण, पुनः उपयोग और पुनः निर्माण के माध्यम से यथासंभव लंबे समय तक उपयोग में रखा जाता है।परिपत्र अर्थव्यवस्था पारंपरिक रैखिक अर्थव्यवस्था से प्रस्थान है, जो उत्पादन और खपत के "टेक-मेक-डिस्पोज" मॉडल पर आधारित है। एक रैखिक अर्थव्यवस्था में, संसाधनों को निकाला जाता है, उत्पादों में बदल दिया जाता है, उपयोग किया जाता है और फिर अपशिष्ट के रूप में त्याग दिया जाता है।

परिपत्र अर्थव्यवस्था का लक्ष्य निम्नलिखित लक्ष्यों को प्राप्त करना हैः

1. **अपशिष्ट और प्रदूषण को कम करें** - संसाधनों को यथासंभव लंबे समय तक उपयोग में रखकर, एक चक्रीय अर्थव्यवस्था अपशिष्ट और प्रदूषण को कम करने में मदद कर सकती है।

2. **संसाधनों के उपयोग का इष्टतम उपयोग** - एक चक्रीय अर्थव्यवस्था का उद्देश्य वस्तुओं और सेवाओं का उत्पादन करने के लिए आवश्यक सामग्री और ऊर्जा की मात्रा को कम करते हुए संसाधनों का सबसे कुशल तरीके से उपयोग करना है।
3. **आर्थिक मूल्य उत्पन्न करें** - एक चक्रीय अर्थव्यवस्था पुनर्चक्रण, पुनर्निर्माण और मरम्मत जैसे क्षेत्रों में नए व्यापार मॉडल और नौकरी के अवसर बनाकर आर्थिक मूल्य उत्पन्न कर सकती है।
4. **प्राकृतिक प्रणालियों का संरक्षण** - नए संसाधनों की मांग को कम करके और कचरे को कम करके, एक चक्रीय अर्थव्यवस्था वनों, महासागरों और जैव विविधता जैसी प्राकृतिक प्रणालियों के संरक्षण में मदद कर सकती है।

इन लक्ष्यों को प्राप्त करने के लिए, एक परिपत्र अर्थव्यवस्था को डिजाइन, उत्पादन, खपत और अपशिष्ट प्रबंधन में बदलाव की आवश्यकता होती है। सर्कुलर इकोनॉमी प्रथाओं के कुछ उदाहरणों में शामिल हैं:

1. **दीर्घायु और पुनर्चक्रण के लिए उत्पाद डिजाइन** - उत्पादों को लंबे समय तक चलने और आसानी से अलग करने और पुनर्नवीनीकरण करने के लिए डिजाइन करना।
2. **बंद-लूप आपूर्ति श्रृंखला** - आपूर्ति श्रृंखला बनाना जो सामग्री को पुनः उपयोग और पुनर्नवीनीकरण करने की अनुमति देती है।
3. **अर्थव्यवस्था को साझा करना** - कार, बाइक और उपकरण जैसे संसाधनों को अलग-अलग रखने के बजाय साझा करना।
4. **मरम्मत और रखरखाव** - उत्पादों को हटाने और नए खरीदने के बजाय उनकी मरम्मत करना।

कुल मिलाकर, एक अधिक टिकाऊ और समृद्ध भविष्य बनाने के लिए एक परिपत्र अर्थव्यवस्था एक आशाजनक दृष्टिकोण है, लेकिन इसे लागू करने के लिए व्यवसायों, सरकारों और व्यक्तियों से एक ठोस प्रयास की आवश्यकता है।

सतत कृषि

सतत कृषि खाद्य उत्पादन के लिए एक दृष्टिकोण है जो किसानों, उपभोक्ताओं और पर्यावरण की जरूरतों को संतुलित करना चाहता है। यह पर्यावरणीय प्रबंधन, आर्थिक व्यवहार्यता और सामाजिक उत्तरदायित्व के सिद्धांतों पर आधारित है। दीर्घकालिक कृषि पद्धतियों का उद्देश्य कृषि प्रणालियों के दीर्घकालिक स्वास्थ्य और उत्पादकता को बढ़ावा देते हुए पर्यावरण पर कृषि के नकारात्मक प्रभावों को कम करना है।
स्थायी कृषि पद्धतियों के कुछ उदाहरणों में शामिल हैं:

1. **संरक्षण कृषि** - इसमें मिट्टी के कटाव को कम करने, मिट्टी के स्वास्थ्य में सुधार और पानी के संरक्षण के लिए न्यूनतम जुताई, कवर फसल, और फसल चक्र जैसे अभ्यास शामिल हैं।
2. **एकीकृत कीट प्रबंधन** - इस दृष्टिकोण में सिंथेटिक कीटनाशकों के उपयोग को कम करते हुए कीटों और रोगों के प्रबंधन के लिए सांस्कृतिक, जैविक और रासायनिक तरीकों के संयोजन का उपयोग करना शामिल है।
3. **एग्रोफोरेस्ट्री** - इसमें मिट्टी की उर्वरता में सुधार, पानी के संरक्षण और इमारती लकड़ी, फल और छाया जैसे कई लाभ प्रदान करने के लिए पेड़ों और फसलों को एक ही कृषि प्रणाली में एकीकृत करना शामिल है।
4. **सटीक कृषि** - इसमें खाद, पानी और कीटनाशकों जैसे इनपुट को अनुकूलित करने, कचरे को कम करने और दक्षता में सुधार करने के लिए जीपीएस और सेंसर जैसी तकनीक का उपयोग करना शामिल है।
5. **जैविक खेती** - इसमें सिंथेटिक उर्वरकों और कीटनाशकों के बजाय खाद और खाद जैसे प्राकृतिक आदानों का उपयोग करना और आनुवंशिक रूप से संशोधित जीवों (जीएमओ) से बचना शामिल है।

निम्न-कार्बन परिवहन

निम्न-कार्बन परिवहन परिवहन के उन साधनों को संदर्भित करता है जो पारंपरिक वाहनों की तुलना में कम ग्रीनहाउस गैस उत्सर्जन उत्पन्न करते हैं, जो जलवायु परिवर्तन में एक प्रमुख योगदानकर्ता हैं। निम्न-कार्बन परिवहन के कुछ उदाहरणों में शामिल हैं:

1. **इलेक्ट्रिक वाहन** - ये वाहन बिजली से संचालित होते हैं और शून्य टेलपाइप उत्सर्जन का उत्सर्जन करते हैं, जिससे वे गैसोलीन और डीजल वाहनों का एक स्वच्छ विकल्प बन जाते हैं।
2. **हाइब्रिड वाहन** - ये वाहन एक इलेक्ट्रिक मोटर के साथ एक गैसोलीन या डीजल इंजन को जोड़ते हैं, पारंपरिक वाहनों की तुलना में ईंधन की खपत और उत्सर्जन को कम करते हैं।
3. **सार्वजनिक परिवहन** - सार्वजनिक परिवहन जैसे बसों और ट्रेनों का उपयोग करके कई लोगों को एक साथ यात्रा करने की अनुमति देकर, सड़क पर कारों की संख्या को कम करके उत्सर्जन को कम किया जा सकता है।
4. **साइकिल चलाना और पैदल चलना** - परिवहन के ये साधन कोई ग्रीनहाउस गैस उत्सर्जन नहीं करते हैं और अतिरिक्त स्वास्थ्य लाभ प्रदान करते हैं।

5. **वैकल्पिक ईंधन** - वाहनों को बायोडीजल, हाइड्रोजन और प्राकृतिक गैस जैसे वैकल्पिक ईंधनों द्वारा संचालित किया जा सकता है, जो पारंपरिक ईंधनों की तुलना में कम ग्रीनहाउस गैसों का उत्सर्जन करते हैं।

निम्न-कार्बन परिवहन को अपनाने के कई लाभ हो सकते हैं, जिनमें शामिल हैंः

1. **ग्रीनहाउस गैस उत्सर्जन में कमी** - परिवहन द्वारा उत्सर्जित ग्रीनहाउस गैसों की मात्रा को कम करके, निम्न-कार्बन परिवहन जलवायु परिवर्तन को कम करने में मदद कर सकता है।
2. **बेहतर वायु गुणवत्ता** - कम कार्बन परिवहन वायु प्रदूषण को कम कर सकता है, जिसका मानव स्वास्थ्य पर नकारात्मक प्रभाव पड़ सकता है।
3. **बढ़ी हुई ऊर्जा सुरक्षा** - जीवाश्म ईंधन पर निर्भरता कम करके, निम्न-कार्बन परिवहन ऊर्जा सुरक्षा बढ़ा सकता है और कीमतों में उतार-चढ़ाव के जोखिम को कम कर सकता है।
4. **लागत बचत** - कुछ निम्न-कार्बन परिवहन विकल्प, जैसे कि साइकिल चलाना और सार्वजनिक परिवहन, निजी वाहन के स्वामित्व और संचालन से कम खर्चीला हो सकता है।

निष्कर्ष

औद्योगिक विकास ग्रीनहाउस गैसों के उत्सर्जन में योगदान देता है, जो जलवायु परिवर्तन के लिए जिम्मेदार हैं। ऊर्जा उत्पादन, परिवहन और अन्य औद्योगिक गतिविधियों के लिए जीवाश्म ईंधन का उपयोग कार्बन डाइऑक्साइड और अन्य ग्रीनहाउस गैसों को वातावरण में छोड़ता है, जिससे ग्लोबल वार्मिंग और इसके संबंधित पर्यावरणीय परिणाम सामने आते हैं। औद्योगिक विकास से कई आर्थिक लाभ और तकनीकी प्रगति हुई है, लेकिन इसने पर्यावरण के क्षरण में भी महत्वपूर्ण योगदान दिया है। पर्यावरण संरक्षण के साथ आर्थिक विकास को संतुलित करने वाले स्थायी समाधान खोजने के लिए सरकारों, उद्योगों और व्यक्तियों को मिलकर काम करने की आवश्यकता है।

शून्य-कार्बन अर्थव्यवस्था की ओर संक्रमण के लिए अक्षय ऊर्जा, ऊर्जा दक्षता और अन्य निम्न-कार्बन प्रौद्योगिकियों में महत्वपूर्ण निवेश की आवश्यकता होगी। संक्रमण का समर्थन करने के लिए नीतिगत हस्तक्षेप की भी आवश्यकता होगी, जैसे कार्बन मूल्य निर्धारण और जीवाश्म ईंधन को चरणबद्ध करने के लिए नियम। हालांकि, शून्य-कार्बन अर्थव्यवस्था के कई लाभ हैं, जिनमें कम ग्रीनहाउस गैस उत्सर्जन, बेहतर वायु गुणवत्ता और बढ़ी हुई ऊर्जा सुरक्षा शामिल हैं।

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योग और आयुर्वेदः शैक्षिक परिप्रेक्ष्य

तृप्ति शर्मा

शोधार्थी, शिक्षाशास्त्र विभाग, जरारासंविवि, जयपुर, राजस्थान, भारत

सारांश

भारतीय चिंतन में अनवरत आत्म ज्ञान तथा सत्य की खोज पर वैचारिक मंथन सदियों से होता रहा है। योग विद्या व्यक्ति को आत्म तत्व के ज्ञान से जोड़ती है तथा परम लक्ष्य की प्राप्ति में सहायक होती है। योग का सम्बन्ध प्राचीनतम आर्ष ग्रंथों से है। प्राचीन ऋषि-मुनियों ने योग को मानव जाति के कल्याण के लिए आवश्यक माना और समय-समय पर योग की विभिन्न शाखाओं को प्रतिपादित किया ताकि मानव योग को आत्मसात कर शारीरिक एवं मानसिक स्वास्थ्य को प्राप्त कर सके और साथ ही अपने परम लक्ष्य की प्राप्ति हेतु उन्मुख रह सके। वेदों, पुराणों, उपनिषदों तथा अन्य प्राचीन ग्रंथों में योग का गहन उल्लेख है जो योग के ऐतिहासिक महत्व की पुष्टि करता है।

ऋग्वेद में आयुर्वेद के अतिमहत्त्व के सिद्धान्त यत्र-तत्र विकीर्ण है। चरक, सुश्रुत, काश्यप आदि मान्य ग्रन्थकार आयुर्वेद को अथर्ववेद का उपवेद मानते हैं। इससे आयुर्वेद की प्राचीनता सिद्ध होती है। परम्परानुसार अश्विनीकुमार आयुर्वेद के आदि आचार्य माने जाते हैं जिन्होने दक्ष प्रजापति के धड़ में बकरे का सिर जोड़ा था। अश्विनी कुमारों से इन्द्र ने यह विद्या प्राप्त की। इन्द्र ने धन्वन्तरि को सिखाया। काशी के राजा दिवोदास धन्वन्तरि के अवतार कहे गए हैं। उनसे जाकर सुश्रुत ने आयुर्वेद पढ़ा। अत्रि और भारद्वाज भी इस शास्त्र के प्रवर्तक माने जाते हैं। आयुर्वेद के आचार्य ये हैं— अश्विनीकुमार, धन्वन्तरि, दिवोदास (काशिराज), नकुल, सहदेव, अर्कि, च्यवन, जनक, बुध, जावाल, जाजलि, पैल, करथ, अगस्त्य, अत्रि तथा उनके छः शिष्य (अग्निवेश, भेड़, जातुकर्ण, पराशर, सीरपाणि, हारीत), सुश्रुत और चरक।

प्रस्तुत शोधपत्र योग और आयुर्वेद के शैक्षिक परिप्रेक्ष्य को प्रस्तुत करता है; वर्तमान परिप्रेक्ष्य में योग और आयुर्वेद की प्रासंगिकता को स्वीकार करता है और विभिन्न शारीरिक, मानसिक एवं संवेगात्मक व्याधियों से मुक्ति हेतु लोगों को व्यावहारिक जीवन में योग और आयुर्वेद को अपनाने हेतु सुझाव प्रस्तुत करता है।

मुख्य शब्दः योग, आयुर्वेद, स्वास्थ्य, जड़ी-बूटी, प्राणायाम।

प्रस्तावना

ऋषि-मुनियों ने योग के साथ ही आयुर्वेद को भी जन्म दिया था। इसका कारण यह है कि ऋषि-मुनि सैकड़ों वर्ष तक जिंदा रहकर ध्यान और समाधि गति करना चाहते थे। इसके चलते उन्होंने दोनों ही चिकित्सा पद्धति को अपने जीवन का अंग बनाया। आयुर्वेद और योग भारत द्वारा पूरी दुनिया को दिया हुआ एक अनमोल उपहार है। यह व्यक्ति के स्वस्थ रहने के उन स्थाई उपायों में है जो हमारी पृथ्वी की देखभाल करते है। व्यक्ति के स्वस्थ रहने के लिए जितना शरीर को स्वस्थ रखना जरूरी होता है उतना ही जरुरी पर्यावरण को स्वस्थ रखना भी होता है। आयुर्वेद और योग ने लोगों को समान रूप से जागरूक किया है। इसलिए, आयुर्वेद और योग के महत्व को देखते हुए, भारत के लिए अपनी अंदरुनी शक्ति और अपनी सभ्यतागत शक्ति का विस्तार करना जरूरी है। आज भी हम लोग अपनी दादी और नानी के घरेलू नुस्खे इस्तेमाल करते है आज कल लोग दवाइयों का इस्तेमाल कम कर इन घरेलू उपायों को अजमा रहे है। इन घरेलू नुस्खों से कोई नुकसान भी नहीं होता है। इसके अलावा ये स्वस्थ माध्यम से शरीर की सभी बीमारियों से रक्षा भी करते है।

आयुर्वेद और योग भारत की अंदरुनी शक्ति का सबसे बड़ा स्रोत है। फिर भी आज हम इनका पूरी तरह से इस्तेमाल नहीं कर पा रहे हैं। भारत आज भी आयुर्वेदिक प्रथाओं को पूरी तरह से अपनाने में संघर्ष कर रहा है। जबकि बाहरी देश हंगरी ने आयुर्वेद को अपने प्राकृतिक चिकित्सा के पाठ्यक्रम में शामिल किया और इसे **1997** में चिकित्सा का अनिवार्य हिस्सा बना दिया। योग एक आध्यात्मिक शब्द है। योग कोई धर्म नहीं है, यह जीवन जीने का एक तरीका है जिसका एक ही उद्देश्य है स्वस्थ शरीर में स्वस्थ मन।

योग शब्द का शाब्दिक अर्थ है जुड़ना यानि हमारा जुड़ाव ब्रह्माण्ड से होना। मनुष्य एक शारीरिक, मानसिक और आध्यात्मिक प्राणी है, योग के माध्यम से मनुष्य के शरीर और मन में सामंजस्य स्थापित होता है। वैसे तो हमारे पास शरीर को स्वस्थ रखने के अनेक तरीके है जैसे सुबह टहलने जाता है, दौड़ता, जिम में जाकर व्यायाम करना। इन सबकी तरह योग भी शरीर को स्वस्थ और ऊर्जावान रखने के लिए किया जाता है योग कुछ मायनों में भिन्न है। योग शरीर और मन को स्वस्थ रखने के लिए एक आध्यात्मिक प्रक्रिया है। आयुर्वेद एक प्राकृतिक चिकित्सा पद्धति है। बहुत से ऐसे रोग और मानसिक विकार हो सकते हैं जिस पर योग कंट्रोल न भी कर पाए तो आयुर्वेद उसका विकल्प बन जाता है और बहुत से ऐसे रोग भी होते हैं जिसे आयुर्वेद न भी कंट्रोल कर पाए तो योग उसका विकल्प बन जाता है।

योग से न सिर्फ शारारिक बल्कि मानसिक उपचार भी होते है। पहले केवल आयुर्वेदिक रूप में ही योग को महत्त्व दिया जाता था परन्तु आज योग वैज्ञानिक रूप से भी प्रभावकारी सिद्ध हो चुका है। आज डॉक्टर्स भी अपने मरीज़ो को योग के लिए प्रोत्साहित करते है। योग आपके अंदर की बुरी आदतों के प्रभावों को उलट देता है। योग का नियमित रूप से अभ्यास करने की कला किसी व्यक्ति के मन, शरीर और आत्मा को नियंत्रित करने में मदद करती है। योग तनाव और चिंता को भी कम करता है। आज योग कुछ लोगों का जीवन जीने का एक तरीका बन चुका है। कुछ लोगों को योग द्वारा तन मन के गंभीर विकारों से भी छुटकारा मिल जाता है। हर व्यक्ति को योग के महत्त्व को समझना जरूरी है। योग द्वारा व्यक्ति को आंतरिक और बाहरी शक्ति मिलती है जो आज के समय में व्यक्ति की मांग है। योग नकारात्मक विचारों से छुटकारा दिलाता है। योग शरीर को रोगमुक्त बनाता है।

आयुर्वेदिक चिकित्सा दुनिया की सबसे पुरानी और समग्र शारीरिक चिकित्सा प्रणालियों में से एक है। आयुर्वेद भारत में **3000** साल पहले विकसित हुआ था। लोगों की बदलती जीवन शैली में आयुर्वेद का इंसान जल्दी राहत दिलाता है। लेकिन असाध्य बीमारियों को जड़ से खत्म करने के लिए आयुर्वेद पद्धति रामबाण है। आयुर्वेद से कईं बीमारीयों को रोका जा सकता है तो कुछ बीमारीयों को हावी होने से पहले ही रोका जा सकता है।

आयुर्वेद में खास बात ये है कि इसका कोई साइड-इफेक्ट नहीं होता। आयुर्वेद महज एक जड़ी-बूटी नहीं है। ये एक प्राचीन पद्धति है। जो भी लोग आयुर्वेद का अभ्यास करते है। उनका मानना है कि प्रत्येक व्यक्ति ब्रह्मांड में पाए जाने वाले पाँच मूल तत्वों से बना है: आकाश, वायु, अग्नि, जल और पृथ्वी। ये मानव शरीर में तीन जीवन बलों या ऊर्जाओं का संयोजन करते हैं, जिन्हें 'दोष' भी कहा जाता है। वे नियंत्रित करते हैं कि आपका शरीर कैसे काम करता है। ये तीन दोषों के नाम है। वात दोष (**Excess of sky and air element),** पित्त दोष (**Excess of fire and water),** और कफ दोष (**Excess of water and earth element)**

आयुर्वेद को दुनिया भर में स्वीकृत चिकित्सा की सबसे पुरानी पारंपरिक प्रणालियों (टीएसएम) में से एक माना जाता है। चिकित्सा की विभिन्न पारंपरिक प्रणालियों से समृद्ध ज्ञान के संयोजन से हर्बल औषधि खोज प्रक्रिया में नए रास्ते खुल सकते हैं। पौधों पर आधारित दवाओं की खोज में अन्य बाधाओं के अलावा इन प्रणालियों के सैद्धांतिक सिद्धांतों के बीच अंतर और समानता की समझ की कमी उनके अभिसरण की दिशा में बड़ी बाधा है।

शोध अध्ययन के विशिष्ट उद्देश्य

1. योग एवं आयुर्वेद के ऐतिहासिक परिप्रेक्ष्य को प्रस्तुत करना
2. योग एवं आयुर्वेद के शारीरिक और मानसिक लाभों को प्रस्तुत करना
3. योग एवं आयुर्वेद की अंतर्राष्ट्रीय प्रसिद्धि एवं स्वीकारोक्ति को स्पष्ट करना
4. वर्तमान परिप्रेक्ष्य में योग और आयुर्वेद की प्रासंगिकता को सिद्ध करना
5. विभिन्न शारीरिक, मानसिक एवं संवेगात्मक व्याधियों से मुक्ति हेतु लोगों को व्यावहारिक जीवन में योग और आयुर्वेद को अपनाने हेतु सुझाव प्रस्तुत करना

साहित्यावलोकन

1. पल्लव सेन गुप्ता (2012) ने अपने शोध अध्ययन जिसका शीर्षक है- 'योग और प्राणायाम के स्वास्थ्य प्रभाव: एक अत्याधुनिक समीक्षा' के अंतर्गत स्पष्ट किया है कि योग की उत्पत्ति हजारों साल पहले भारत में हुई थी। वर्तमान में लोग योग और प्राणायाम के प्रति बहुत जागरूक हैं और वे एलोपैथिक दवाओं के स्थान पर स्वाभाविक रूप से स्वास्थ्य प्राप्ति और प्राकृतिक उपचार प्राप्त करना चाहते हैं। योग बीमारियों की रोकथाम और प्रबंधन के अलावा स्वास्थ्य में सुधार के लिए एक प्रभावी तरीका साबित हुआ है। योग के उपचारात्मक पहलू किसी चमत्कार से कम नहीं हैं। योग से तनाव और चिंता में कमी होती है; यह स्वायत्त कार्यों में सुधार करता है। योग कैंसर रोगियों के शारीरिक स्वास्थ्य के लिए फायदेमंद है। वैश्विक स्तर पर योग को अपनाया जाना इस तथ्य की पुष्टि करता है कि भारत का सांस्कृतिक प्रभाव सम्पूर्ण विश्व में है।

2. योगिनी एस. जैसवाल एंड लियोनार्ड एल. विल्लियम्स (2017) ने अपने शोधपत्र जिसका शीर्षक है- 'ए ग्लिम्प्स ऑफ़ आयुर्वेदा- द फॉर्गोटन हिस्ट्री एंड प्रिंसिपल्स ऑफ़ इंडियन ट्रेडिशनल मेडिसिन', के अंतर्गत इस तथ्य पर जोर दिया है कि आयुर्वेद सर्वाधिक पुरानी चिकित्सा की परंपरागत व्यवस्थाओं में से एक है जिसको विश्व स्तर पर सभी देशों में स्वीकार किया जाता है। हजारों वर्ष बीत जाने के बाद भी आयुर्वेद आज विश्व में सर्वाधिक प्रामाणिक चिकित्सा पद्धति के रूप में सर्व सम्मत रूप से मान्य है।

3. तेशोम अबेरा (2017) ने अपने शोध अध्ययन जिसका शीर्षक है- 'सिग्नीफिकेन्स ऑफ़ योग इन मॉडर्न लाइफ' के अंतर्गत स्पष्ट किया है कि स्वास्थ्य प्रत्येक व्यक्ति का प्राथमिक उद्देश्य होता है। आधुनिक जीवनशैली हमारे स्वास्थ्य को शारीरिक, मनोवैज्ञानिक एवं सामाजिक दृष्टि से प्रभावित करती है। आज इस बात की आवश्यकता है कि आधुनिक जीवन के विभिन्न प्रभावों के प्रति लोगों की जागरूकता को बढ़ाया

जाए। स्वस्थ जीवन शैली के अंतर्गत उचित भोजन, शारीरिक क्रिया-कलाप, संचार के बेहतर तरीके एवं समुदाय में समाजीकरण आदि सम्मिलित है। योग इन समस्त चीज़ों को हमको प्रदान करता है। योग दिन-प्रतिदिन की जीवन प्रणाली से जनित अनेकों बीमारियों से जुड़े संकट को कम करता है। आधुनिक युग में योग बहुत प्रासंगिक है। योग बिना अधिक धन खर्च किये व्यक्ति को उचित स्वास्थ्य प्रदान करता है।

4. सुजीत मैती (2019) ने अपने शोध अध्ययन जिसका शीर्षक है- 'सिग्नीफिकेन्स ऑफ़ योग इन मॉडर्न लाइफ फॉर हेल्थः ए ब्रीफ डिस्कशन' के अंतर्गत स्पष्ट किया है कि योगाभ्यास आत्मानुभूति का सबसे अच्छा तरीका है। योग मानव जीवन का और जीने की कला का विज्ञान है। योग का जन्म वेदों और उपनिषदों के काल में हुआ। भारतीय दर्शन की सम्पूर्ण व्यवस्था योगाभ्यास पर जीवन दर्शन के व्यावहारिक पक्ष के रूप में जोर देती है। मुख्य रूप से पातंजलि पारम्परिक योग व्यवस्था के संस्थापक हैं जिनका योग को जन जन तक पहुँचाने में अभूतपूर्व योगदान रहा है।
5. अलका मिश्रा, सुमित्रा ए. बेंतूर, सोनिका ठकराल, राहुल गर्ग एवं भानु दुग्गल (2021), ने अपने संयुक्त-रूप से किये गए शोध अध्ययन 'द यूज़ ऑफ इंटीग्रेटिव थेरेपी बेस्ड ऑन योग एंड आयुर्वेदा इन द ट्रीटमेंट ऑफ़ ए हाई रिस्क केस ऑफ़ कोविड-19/ सार्स-कोव-2 विद मल्टीप्ल कोर्बिडीटीएसः ए केस रिपोर्ट' में इस तथ्य की पुष्टि की है कि कोविद-19 के दौरान आयुर्वेद एवं योग आधारित थेरेपी द्वारा गंभीर रूप से कोरोना पॉजिटिव ऐसे मरीजों का सफलता पूर्वक इलाज किया गया जो डायबिटीज मेलिटस (डीएम), हाइपरटेंशन (एचटीएन), हाइपोथायरायडिज्म एवं क्रोनिक किडनी डिसीसेस (सीकेडी) से पीड़ित थे। प्राचीन आयुर्वेदिक दवाओं की पुस्तकें जैसे चरक संहिता और सुश्रुत संहिता में इस प्रकार की महामारियों का वर्णन है तथा उन महामारियों को जनपदोद्ध्वंस बताया गया है।
6. कविता कौशिक, सौरभ गर्ग, शोभित कुमार एवं रूबी रानी अग्रवाल (2022), ने अपने संयुक्त रूप से किये गए अध्ययन 'आयुर्वेदा अलोंग विद योगः इम्पोर्टेस इन करंट सिनेरियो' के अंतर्गत योग और आयुर्वेद को वैदिक ज्ञान रुपी ऐसे वृक्ष की जिसमें समस्त मानव जीवन एवं ब्रह्माण्ड समाहित है, दो अन्तर्सम्बन्धित शाखाओं के रूप में बताया है। वैदिक ज्ञान भारतीय योगिओं द्वारा प्रतिपादित वह प्राचीन विज्ञान है जो मानव को ब्रह्माण्ड की आतंरिक कार्य प्रणाली से एवं हमारी चेतनता से हमको परिचित करवाता है। यह वह ज्ञान है जो हमको अंतिम रूप से आत्म-ज्ञान एवं जन्म एवं मृत्यु के चक्र से परिचित कराता है। योगाभ्यास और आयुर्वेद दोनों का जन्म हजारों वर्ष पूर्व वैदिक व्यवस्था से ही हुआ है।

प्राक्कल्पना

1. योग एवं आयुर्वेद दोनों का प्राचीनकाल से सम्बन्ध है और दोनों का अपना अपना इतिहास है।
2. योग एवं आयुर्वेद के अनेकों शारीरिक और मानसिक लाभ हैं जिनके कारण वैश्विक स्तर पर योग और आयुर्वेद की प्रामाणिकता को स्वीकार किया जाता है।
3. वर्तमान परिदृश्य योग एवं आयुर्वेद के पुनर्जागरण का परिदृश्य है।
4. आधुनिक समय में जब लगभग प्रत्येक व्यक्ति भौतिकवाद के चंगुल में होने के कारण अनेकों शारीरिक और मानसिक बीमारियों से पीड़ित है, अधिकांश लोग योग और आयुर्वेद को अपना रहे हैं।
5. वर्तमान में योग और आयुर्वेद की प्रासंगिकता को नकारा नहीं जा सकता।

शोध पद्धति

प्रस्तुत शोधपत्र द्वितीयक तथ्यों पर आधारित एक ऐसा अध्ययन है जो योग और आध्यात्म के ऐतिहासिक परिप्रेक्ष्य को प्रस्तुत करता है, तथा साथ ही यह योग और आध्यात्म का क्रमवद्ध और व्यवस्थित अध्ययन प्रस्तुत करता है। इस शोध कार्य हेतु समाज वैज्ञानिकों द्वारा निर्धारित सामाजिक अनुसन्धान के समस्त चरणों, यथा, समस्या का चुनाव, सम्बंधित साहित्य का अध्ययन, अंतर्वस्तु विश्लेषण, निष्कर्ष आदि का प्रयोग किया गया है। इस अध्ययन हेतु, शोधार्थी ने विभिन्न इंटरनेट साइट्स पर उपलब्ध विषय सम्बन्धी अध्ययनों में से कुछ विशेष अध्ययनों को चुना; उनका गहन अध्ययन कर उनका विभिन्न कोणों से समग्र विश्लेषण किया। इसके आधार पर उसके द्वारा न केवल निष्कर्ष निकाला गया, अपितु विशिष्ट सुझाव भी प्रदान किये गए।

सुझाव एवं निष्कर्ष

1. आयुर्वेद और योग का अटूट संबंध है जिससे व्यक्ति शारीरिक मानसिक और आत्मिक तौर पर स्वस्थ हो सकता है।
2. आयुर्वेद चिकित्सा की सबसे प्रसिद्ध पारंपरिक प्रणालियों में से एक है जो युगों से आज तक जीवित और विकसित हुई है। अतः योग और आयुर्वेद का आने वाली सभी पीढ़ियों के हितार्थ संरक्षण एवं संवर्धन आयश्यक है।

3. योग व्यक्ति को पूर्णतया स्वस्थ बनाने में कारगर सिद्ध होता रहा है। योग के आठ अंग मनुष्य जीवन के शारीरिक और आत्मिक उत्थान के लिए महत्वपूर्ण भूमिका निभाते हैं। इनमें यम, नियम, आसन, प्राणायाम और प्रत्याहार व्यक्ति को जहां शारीरिक रूप से स्वस्थ, मजबूत एवं निरोग बनाता है वही धारणा, ध्यान और समाधि व्यक्ति की आत्मा को मोक्षधाम तक पहुंचाने में सहायक होते हैं।
4. आयुर्वेद ऐसी भारतीय प्राचीन चिकित्सा पद्धति है, जो व्यक्ति की शारीरिक पीड़ा का हरण करते हैं। आयुर्वेद बीमारियों को जड़ मूल से नष्ट करने में सहायक होता है, जिसके अनेक सकारात्मक परिणाम आपके सामने आते रहते हैं। यह एक ऐसी प्राचीन चिकित्सा विधा है, जिसका शरीर पर प्रतिकूल प्रभाव ना के बराबर होता है। इसलिए इस चिकित्सा पद्धति को जीवन का भाग बनाना चाहिए।
5. पूर्ण उपचार और आध्यात्मिक उन्नयन हेतु योग और आयुर्वेद को फिर से जोड़ना चाहिए।
6. योग एवं आयुर्वेद दोनों को एक साथ व्यवहार में प्रयोग करने से शारीरिक एवं मानसिक व्याधियों का पूर्ण उपचार संभव है। आयुर्वेद चिकित्सा आधार और योग आध्यात्मिक उद्देश्य और अभ्यास प्रदान करता है।
7. योग और आयुर्वेद एक ही सिक्के के दो पहलू हैं। वे हजारों साल पहले भारत में उत्पन्न हुए थे। ये दोनों ही प्राचीन भारतीय वैदिक परंपरा के अनिवार्य अंग हैं। वैदिक परम्पराओं के निर्वहन हेतु भी योग एवं आयुर्वेद दोनों को व्यवहार में लाना चाहिए।

निष्कर्षतः, योग एवं आयुर्वेद सम्बन्धी व्याख्याओं और समीक्षाओं के आधार पर यह कथन गलत नहीं होगा कि भारतीय वैदिक परम्पराओं के निर्वहन हेतु, शारीरिक एवं मानसिक स्वास्थ्य प्राप्त करने हेतु, आध्यात्मिक विकास एवं शांति हेतु योग एवं आयुर्वेद का व्यावहारिक जीवन में अवश्य करना चाहिए। जीवन का वास्तविक आनंद एवं समस्त बीमारियों से मुक्ति केवल योग और आयुर्वेद में ही निहित है। आयुर्वेद और योग का भारत है और वे वैदिक ज्ञान की उसी प्रणाली से उत्पन्न होते हैं जिसका मूल भी भारत में है। आयुर्वेद और योग, दोनों अपने सिरों को प्राप्त करने के लिए प्राकृतिक साधनों पर निर्भर हैं और स्वास्थ्य को बढ़ावा देने के लिए प्राकृतिक साधनों का उपयोग करने में विश्वास करते हैं।

आयुर्वेद शरीर के गठन की पहचान करने और फिर जीवनशैली में परिवर्तन करने और दोषों (वात, पित्त और कफ) और पर्यावरण के बीच संतुलन बनाए रखने के लिए कुछ समग्र दवाओं का सेवन करने से संबंधित है। योग में आसपास के वातावरण के साथ एकता प्राप्त करने के लिए ध्यान के साथ-साथ शारीरिक गति का उपयोग शामिल है। योग और आयुर्वेद, दोनों व्यक्ति को स्वस्थ रखते हैं एवं दोनों समग्र अभ्यास हैं जो मन, शरीर और आत्मा के बीच संतुलन बनाए रखने में मदद करते हैं। आयुर्वेद एक प्राचीन अभ्यास है जो मानता है कि आपके शरीर का एक अनूठा संविधान है जो व्यक्तिगत शारीरिक और भावनात्मक बनावट के साथ-साथ जीवन शैली की आदतों जैसे भोजन और सोने के समय से नियंत्रित होता है। योग अभ्यासों को आपके दोषों के अनुसार समायोजित किया जा सकता है। योग और आयुर्वेद के बीच संबंध महत्वपूर्ण ऊर्जा है जिसे प्राण के रूप में जाना जाता है । आयुर्वेद और योग मिलकर आत्म-सुधार और आत्म-पुनर्स्थापना में मदद करते हैं। वे आत्मा, मन और शरीर की बहाली की ओर ले जाते हैं।

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महाकवि कालिदास के नाट्यों में प्रकृति चित्रण

प्रोफेसर डॉ. उषा चौहान

संस्कृत विभाग, राजकीय कन्या महाविद्यालय, मगरा पूंजला, जोधपुर, राजस्थान, भारत

संस्कृत साहित्य के प्रमुख नाट्यकारों में कालिदास का अवतरण अत्यन्त महत्त्वपूर्ण है, इनकी कलाकारिता, भावुकता और कल्पना शक्ति के वैपुल्य से संस्कृत नाट्यों को उत्कृष्ट स्थान प्राप्त हुआ है, इन्होंने काव्यों के अतिरिक्त मालविकाग्निमित्रम्, विक्रमोर्वशीयम् तथा अभिज्ञान शाकुन्तलम् नाट्यों की रचना की। प्रेम का जो उदात्त स्वरूप, चरित्रों का जो भव्य अंकन एवं प्रकृति के रम्यदृश्यों काजो चित्रण इनकी नाट्यकला में पाया जाता है, वह अन्यत्र दुर्लभ है।

कालिदास के नाट्य त्रय में अभिज्ञान शाकुन्तलम् नाट्य कुशलता का चूड़ान्त निदर्शन है, साहित्य जगत् का हृदय हार है एवं विश्व के सर्वश्रेष्ठ ग्रन्थों में आदरणीय स्थान पर प्रतिष्ठित है "कालिदास की इस अनुपम कृति में उनकी नाट्य प्रतिभा, कल्पना-प्रचुरता भाषा लालित्य, रस परिपाक तथा मानव मनोविकारों के मार्मिक विश्लेषण की अद्भुत क्षमता अत्यन्त विशद रूप से प्रकट हुई है।"[1]

कालिदास का अभिज्ञान शाकुन्तलम् प्राकृतिक दृश्यों से ओत प्रोत है, उसमें प्रकृति अपने स्वरूप में पूर्ण स्वतन्त्र होते हुए भी एक सजीव एवं चेतन प्राणी के रूप में चित्रित की गई है। अ.शा. के मंगलाचरण में अपने अभीष्ट देव भगवान् भूतनाथ की दिव्य अष्टमूर्तियों का साक्षात्कार प्रकृति के ही भीतर करके कवि जनमंगल कीकामना करता है

या सृष्टिः ..... रीशः॥[2]

सूत्रधार नटी से ग्रीष्म समय को अधिकृत करके ही गीत गाने को कहता है,और नटीके गीत के भावों में भी भ्रमर, शिरीष कुसुम का वर्णन प्राप्त होता है।[3]

कवि ने प्रकृति का सूक्ष्मता के साथ निरीक्षण किया है,अ.शा. के प्रथम अंक में भयाकुल मृग दृश्य नेत्रों के समझ खचित हो जाता है।

ग्रीवाभङ्गाभिराम ..... प्रयाति।[4]

यहाँ भोग भूमि का उद्घाटन दुष्यन्त के मृगया प्रेम की व्यंजना से होता है। शरीर को सिकोड़कर रथ में एकटक दृष्टि लगाए हुए, ग्रीवा भंगाभिराम, उस व्याकुल हरिण के जी-तोड़ भागने से ज्यों ही हम प्रभावित होते हैं[5]-

कालिदास का प्रकृति प्रेम नायक दुष्यन्त को मृग का शिकार नहीं करने देता क्योंकि शरसन्धान किये हुये दुष्यन्तको नेपथ्य से कहा जाता है।

भो भो राजन्, आश्रम मृगोऽयं न हन्तव्यः न हन्तव्यः।

महर्षि कण्व के आश्रम का सजीव एवं चित्ताकर्षक वर्णनकवि के चित्रोपम प्रकृति वर्णन शक्ति का परिचायक है -

नीवाराः ..... रेखांकिता।[6]

तपोवन के इस सूक्ष्म वर्णन को देखकर कालिदास की प्रकृति पर्यवेक्षण की शक्ति का ज्ञान सहज ही हो जाता है, जिससे यह द्योतित होता है कि तपोवन में सरलता, निश्छलता तथा विश्वास का वातावरण व्याप्त है क्योंकि वैखानसों की गंभीर चेतावनी राजा के कानों में इस प्रकार पड़ती है-

न खलु न खलु बाणः ..... शरास्ते।[7]

वैखानस के कहे अनुसार महर्षि कण्व तक भक्ति का सन्देश पहुंचाने के लिये नायक दुष्यन्त जब आश्रम में प्रवेश करता है तो पादपों को जलसिञ्चन करती तपस्वि कन्याओं को देखकर सहसा कह उठता है-

शुद्धान्तदुर्लभमिदं वपुराश्रमवासिनो यदि जनस्य।

दूरीकृताः खलु गुणैरुद्यानलता वनलताभिः॥[8]

अर्थात् रनिवास की रानियों में भी जो सुन्दरता दुर्लभ है, वह इन आश्रम-वासिनी बालिकाओं को मिली है। वन की लताओं ने अपने गुणों से उद्यान की लताओं को सचमुच लज्जित कर दिया है-

कालिदास की निसर्ग कन्या शकुन्तला (अ.शा.की नायिका) प्रकृति का पर्याय है, इस प्रकृति सहचरी शकुन्तला की हृदय लतिका ने कण्व के तपोवन में चेतन अचेतन सभी का स्नेह के बन्धन में बाँध रखा है, यह स्वयं कहती है -न केवलं तातनियोग एवंअस्ति मे सोदरस्नेहो ऽप्येतेषु ।

"शकुन्तला प्रकृति की गोद में जन्मीं वहीं उसका लालन पालन पोषण हुआ इसलिये वह उन संस्कारोंमें आपाद अनुरंजित है।"[9]

शकुन्तला के सहज रूप लावण्य का मूर्तिमान् रूप उपस्थित करने के लिए कवि ने शैवाल से आवृत्त कमल तथा कलंक से मंडित चन्द्रमा से सहायता ली हैं। अतः शकुन्तला का कोमल शरीर वल्कल के योग्य नहीं है तथापि वह तन्वंगी वल्कल वसन धारण करने पर भी अधिक मनोज्ञ दिखलायी पड़ रही है।

राजा-काममननुरूपमस्या वपुषो वल्कलं न पुनरलंकार श्रियं न पुष्यति। कुतः -

सरसिजं ..... नाकृतीनाम्[10]

शकुन्तला को केसर वृक्ष वायु के द्वारा हिलाई गई पल्लव रूपी अंगुलियों से संकेत करता है कि पहले मुझे सींचों और इसी समय सखी प्रियंवदा शकुन्तला को प्रकृति सहचरी सिद्ध करती हुई उसे केसर वृक्षक के समीपगत लता की उपमा देती है फलतः दुष्यन्त शकुन्तला का वर्णन करते हुये उसे प्राकृतिक उपमानों से अभिन्न बताता है -

अधरः ..... सन्नद्धम्।[11]

अनसूया द्वारा शकुन्तला को वनज्योत्स्ना का जलसिंचन हेतु टोकने पर यह कह उठती है कि यदि मैं उसे भूल गई तो अपने आप को भी भूल जाऊँगी।

"यह उसकी बलवती आस्था है कि वृक्ष उसे अपनी पवन-प्रेरित करागुलियों से आह्वान करते हैं।"

मृगया प्रेमी राजा अपनी प्रिया शकुन्तला के नेत्रों पर मृगों का प्रभाव मानता है, वह मानता है कि प्रत्यञ्चा चढ़े हुए तथा बाण से युक्तइस धनुष को मृगों पर चलाने में समर्थ हूँ, जिन्होंने प्रिया शकुन्तला के सहवास को प्राप्त कर मानों (उसे)स्वभावतः सुन्दर दृष्टिपात का उपदेश दिया है - न नमयितुं ..... मुग्धविलोकिलोपदेशः॥[13]

राजा के माध्यम से महाकवि कालिदास ने शकुन्तला के सौन्दर्य के लिये जो उपमान प्रकृति से लिये हैं वे शकुन्तला की प्रकृति के समान रमणीयता एवं निष्कलंकताके परिचायक है, अ.शा. में कवि ने मानव सौन्दर्य को तीव्रता एवं यथार्थता की अभिव्यक्ति के लिये प्रकृति का आश्रय लिया है।[19]

प्राकृतिक उपादानों के माध्यम से अभिव्यक्त तथा रमणीयता, मुग्धता एवं उपयोग योग्यता आदि से मंडित शकुन्तला का सौन्दर्य किसे नहीं लुभाता-

अनाघ्रातं पुष्पं ..... समुपस्थास्यति विधिः।[15]

केसर वृक्ष रूप प्रियतम की लता रूपी नायिका (शकुन्तला) के सौन्दर्य को चित्रित करने हेतु महाकवि कालिरास ने समस्त उपमान प्रकृति सेही लिये है इसका अंग प्रत्यंग प्रकृति से परिवेष्टित है।

अ.शा. के चतुर्थ अंक में विरही शकुन्तला की तुलना भी महाकवि कालिदास प्रकृति के उपायनों से ही करते हैं -

अन्तर्हिते ..... दुः सहानि।[16]

प्रस्तुत श्लोक के अनुसार कुमुदिनी रूप शकुन्तला अपने प्रियजन दुष्यन्त (चन्द्रमा रूप) से मिलन काल तक मनोरम सौन्दर्य से मंडित थी, परन्तु अब अपनी राजधानी लौट जाने पर (प्रातः काल होने पर चन्द्रमा अस्त हो जाने के कारण) चन्द्रवंशोत्पन्न प्रियतम राजा दुष्यन्त के विरह में वह असहनीय दुःख भोग रही है।

इसी चतुर्थ अंक में कालिदास ने प्रकृति और मनुष्य को एक घनिष्ठ प्रेम- बन्धन से बंधा हुआ दिखाया है। आश्रम की बालिका शकुन्तला को अलंकृतकरने के लिए प्रकृति स्नेह से आभूषण इत्यादि वितरण करती है-

क्षौमं..... प्रतिद्वन्द्विभिः ॥[17]

अर्थात् किसी वृक्ष द्वारा चन्द्रवत् श्वेत वर्ण का मंगल कार्य में धारण करने योग्य रेशमी वस्त्रों का जोड़ा निकाल कर दिया गया, किसी वृक्ष के द्वारा चरणों में लगाने योग्य महावार दिया गया अन्य वृक्षों से उन वृक्षों के नवीन निकले हुये पल्लवों से स्पर्धा करने वाले, पर्वभागों तक अर्थात् मणिबन्धन स्थान तक बाहर निकले हुए, वनदेवताओं के करपल्लवों द्वारा आभूषण दिये गये।

जब वह जाने लगती है वनदेवता उसे प्रसाधन योग्य सामग्री प्रदान कर, अपना अनुग्रह प्रकट करते हैं, इसका आज के बौद्धिक युग में तात्त्विक महत्त्व भले ही कम हो किन्तु इसके प्रतीकात्मक रूप के अवहेलना तक नहीं कर सकते। वनस्थली के प्रति रागात्मक संबंध के वे प्रतीक हैं।[18]

स्वयं महर्षि कण्व में इसके एवं प्रकृति के मध्य कोमलता तथा स्निग्धता को प्रस्तुत करते हुए इस प्रकार से कहा-

पातुं ..... अनुज्ञायताम्।[19]

हे समीपस्थ तपोवन के वृक्षों !

जो आप लोगों को जल पिलाये बिना पहले जल पीने के लिए प्रयत्न नहीं करती थी, अलंकरण प्रिया होने पर भी आप के प्रति स्नेह के कारण (आप के) पत्ते को नहीं तोड़ती थी, आप के प्रथम पुष्प निकलने के अवसर पर जिसका उत्सव होता था, वहीयह शकुन्तला पतिगृह जा रही है, आप सब स्वीकृति दीजिये।

यह श्लोक कालिदास के प्रकृष्ट प्रकृति प्रेम तथा असीम करुण रस की वर्णन शैली का सुस्पष्ट परिचायक माना जा सकता है।"प्रकृति तथा मनुष्य का ऐसा सहानुभूति पूर्ण वर्णन संस्कृत साहित्य में विरल है।"[20]यहाँ महर्षि कण्व ने स्वयं इसकी प्रकृति के साथ सहोदर स्नेह की सुन्दर झाँकी प्रस्तुत की है। इसके प्रकृति के साथ असीम अनुराग रखने के कारण मानों प्रकृति भी एक जीवन्त सजीव पात्र सिद्ध हो जाती है? "वस्तुतः अ.शा.में प्रकृति भी एक जीवन्त पात्र है।"[21]

फलतः महर्षि कण्व वृक्षों से इसके गमन हेतु अनुमति मांगते हैं तथा वनवास के साथी वृक्ष भी सुन्दर कोयल की वाणी को अपना प्रत्युत्तर बनाते हुये, इसे गमन की स्वीकृति प्रदान करते हैं।

अनुमत गमना ..... इदृशम्।[22]

"वन देवियों ने जो शकुन्तला को मंगल सूचक आशीर्वाद दिया है, वह उस प्रकृति किशोरी के आचरण के सर्वथा अनुरूप है।"[23]

यहाँ प्रकृति नहीं अपितु देवताओं की वाणी भी इसके पतिगृह गमन के मार्ग तथा वायु दोनों को मंगल कारी रहने का निवेदन करती है।

(आकाशे) रम्यान्तरः ..... पन्थाः।[24]

अर्थात- कमलनियों के द्वारा श्यामल वर्ण वाले सरोवरों से जिसका मध्य भाग रमणीक हो गया है तथा छाया वाले वृक्षों द्वारा जिसमें सूर्य की किरणों का ताप रोक दिया गया है, (ऐसा) इस शकुन्तला का (पतिगृहगमन का) मार्ग कमलों के पराग समान कोमल धूलि वाला और मन्द तथा सुखद वायु वाला तथाकल्याण कारी बने-

"स्नेह, श्रद्धा, शुचिता, विश्वास, विनय तथा आत्मत्याग का जो उदात्त रूप हमें शकुन्तला में देखनेकोमिलता है, वह वस्तुतः प्रकृति की ही देन है।"[25]

अ.शा. में प्रकृति और शकुन्तला परस्पर वियोग से उत्पन्न दुःख को सहने में व्याकुल थी क्योंकि उद्वलित ..... लताः[26]

अर्थात - मृगियों कुशों के ग्राम को उगल देने वाली, मोर नाचना छोड़ देने वाले, जिनके पीले पत्ते गिर रहे हैं, ऐसी लताएँ मानों आँसुओं को बहा रही है "चेतन और अचेतन सभी के साथ ऐसी आन्तरिक आत्मीयता, ऐसी प्रीति और ऐसा कल्याण का बन्धन अन्यत्र दुर्लभ है।"[27]

अ.शा. में प्रकृति और शकुन्तला परस्पर सहचरीहै, वनज्योत्स्ना से आलिंगन गर्भभरालसा मृगी के प्रति अभिव्यक्त स्निग्ध उक्ति, अपनी गति में अवरोध अर्थात् मृग शिशु का इसके मार्ग को नहीं छोड़ना इत्यादि वर्णनों से यह सिद्ध होता है कि "आश्रम के विटपों और वनस्पतियों का शकुन्तला की भाषा में नित्य प्रति भाव विनिमय होता रहता था,शकुन्तला उनकी भाषा समझती थी वे शकुन्तला की भाषा समझते थे। शकुन्तला उन्हें स्नेह दान देती थी और वे उसे स्नेह दान देते थे अर्थात् यह स्नेह सूत्र दोनों बिन्दुओं से वर्धित एवं पालित होता था।[28]

महाकवि कालिदास ने अ.शा. में शकुन्तला के प्रकृति संसार को पवित्र एवं निष्कलुष कहा है, इसके शील चित्रण के सन्दर्भ में मानव एवं प्रकृति, दोनों की धमनियों में प्रवहमान प्राण द्रव की अभिन्नता का नितान्त नैसर्गिक रीति से प्रतिपादन किया है।

कालिदास की नायिका शकुन्तला प्रकृति के अवयवों के न रहने पर उपस्थित ही नहीं हो पाती क्योंकि इसके अपूर्ण चित्र को पूर्ण करने हेतु दुष्यन्त ने कहा है जिसके रेतीले किनारे पर हंसों के जोड़े बैठे हुए हैं, ऐसी मालिनी नदी बनानी है। उसके दोनों ओर हिमालय की पवित्र पहाड़ियाँ बनानी है,जिन पर हिरण बैठे हुए हैं जिनकी शाखाओं पर वल्कल लटके हुए हैं ऐसे वृक्ष के नीचे कृष्णमृग के सींग पर अपनी बाई आंख खुजलाती मृगी को बनाना चाहता हूँ।[29]

दुष्यन्त को अपने द्वारा बनाया गया शकुन्तला का चित्र भी आश्रम के नैसर्गिक दृश्य पट को अंकित किये बिना अपूर्ण सा लगा।[30]

सार यह है कि अ.शा. में प्रकृति एवं शकुन्तला में साम्य इतना अधिक है कि दोनों की परिकल्पना एक दूसरे के वर्णन के बिना अधूरी रह जाएगी।

इस प्रकार अ.शा. में प्रकृति अन्य पात्रों की भाँति एक सजीव पात्र बन गयी है, नाटक का प्रारंभ ग्रीष्म ऋतु के वर्णन से होता है, इस बीच की समस्त क्रियाएँ प्रकृति के वितान रूप आश्रम में होती हैऔर उसका अवसान भी मारीच के पावन आश्रम में होता है। वास्तव में अ.शा. में प्रकृति मूक होते हुए भी सजीव, प्रत्यक्ष, व्यापक एवं अन्तरंग है।

मालविकाग्निमित्रम् कालिदास की प्रथम कृति होने पर भी नाट्य कला की दृष्टि से एक उत्कृष्ट रचना है। कालिदास सौन्दर्य और प्रेम चित्रण में विश्व के कवियों में श्रेष्ठ है। कवि को समस्त दृश्यों में प्राकृतिक सौन्दर्य यारमणीयता फैली हुई दिखायी देती हैऔर वे मानवीय लावण्य को भी उसी का अंगभूत मानते हैं।

माल. के नायक अग्निमित्र मालविका के सौन्दर्य को प्रकृति की भाँति मानते हुये कहते हैं -

द्वितीयम् (हस्तं) श्यामाविटप - सदृशं स्रस्तं मुक्तं कृत्वा .....[31]

यह अपने दायें हाथ को श्यामा नामक लता की टहनी की भाँति अर्थात् जैसे श्यामा लता प्रफुल्ल पुष्पों के भार से झुकी रहती है वैसे ही मालविका भी अपने सौन्दर्य-पुष्पभार से झुकी हुई भुजावाली हैतथा स्मयमान ..... दृष्टम् ॥[32]

अर्थात् उसका मुख विकासमान एवं न निकले हुये केसरों वाले कमल के समान उज्ज्वल व मुग्धकारी था। माल. के तृतीय अंक में समाहितिका दासी कहती है-

मालविकाप्येषु दिवसेषु अनुभूतमुक्तेव मालतीमालां ग्लायमाना लस्यते।[33]

अर्थात् मालविका भी इन दिनों पहनकर फेंकी दुई मालती माला की भाँति मुरझाई सी दिखायी दे रही है।

वह सारङ्क्ष्या अर्थात् मृगनयनी है, इतना ही नहीं तृतीय अंक में तो स्वयं प्रकृति ने राजा को लुभाने की इच्छा से ही इस प्रमदवन की लक्ष्मी ने वसन्ती फूलों का ऐसा श्रृंगार किया है किउससे युवतियों के वेष भी लज्जित (तिरस्कृत) हो रहे हैं।[34]

यहाँ प्रकृति रमणियों को सौन्दर्य में तिरस्कृत करती है।

रक्ताशोक ..... योषिताम् ॥[35]

विक्रमोर्वशीयम् में तो प्रकृति पर मानवीकरण कावर्णन करता हुआ राजा पुरूरवा कहता है-निषिञ्चन् ..... प्रतिभाति मे।[36]

अर्थात् यह वासन्ती सुषमा को बढ़ाता हुआ तथा कुन्द वृक्ष विषयक लता को नचाता हुआ दक्षिण पवन स्नेह और दाक्षिण्य दोनों के योग से कामुक जैसा प्रतीत हो रहा है और भी - सामने स्त्रियों के नाखूनों के समान कुरबक का अरुण अग्रभाग तथा उसके दोनों भाग काले रंग के हैं। यह नूतन अशोक वृक्ष बढ़े हुए लाल वर्ण की शोभा वाला विकासोन्मुख खड़ा है तथा कुछ कुछ परागकणों से पीले बने अग्रभाग वाली नूतन आम्रमंजरी आम के पेड़ पर फूली हुई है। इस प्रकार वासन्ती सुषमा शैशव एवं तारुण्य के बीच स्थित प्रतीत हो रही है।[37]

अन्यन्त्र राजा कहता है -

बहुकुसुमितास्वपि ..... ललितम्।

अर्थात् हे सखे। अनेक प्रकार के पुष्पों से युक्त नम्रपादपों वाली उद्यानलताओं में उस उर्वशी के रमणीक दर्शनों से चंचल बने मेरे नयन टिक नहीं पा रहे हैं।[38]

उर्वशी के विरह में हवा से हिलायी गयी चोटी वाले अशोक वृक्ष को देखकर क्रोधित होता है, वह कहता है - इस बहाने से तुम मुझे कह रहे हो मैंने उर्वशी को नहीं देखा।

इस प्रकार महाकवि कालिदास ने अपनेनाट्यों में प्रकृति का सजीव चित्रण उपस्थित किया है, कवि ने प्रकृति पर मानवीकरण पदे पदे किया है अतः निश्चित रूप से कहा जा सकता है कि संस्कृत साहित्य में महाकवि कालिदास का प्रकृति चित्रण श्रेष्ठ है।

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आर्थिक विकास में पर्यावरण सहभागिता

डॉ0 अर्चना शर्मा

कमला महाविद्यालय, धौलपुर, राजस्थान, भारत

सारांश

पर्यावरण और आर्थिक विकास एक दूसरे से परस्पर जुड़े हुए है वही दूसरी तरफ एक देश कीं आर्थिक उन्नति भी पर्यावरण को प्रभावित करती है। प्राकृतिक संसाधनों का लगातार विदोहन भी आर्थिक विकास को प्रभावित करता है। ऐसी कई सारी पर्यावरण नीतियां है जिन्हें अपनाकर हम अपने पर्यावरण को बचा सकते हैं । आर्थिक विकास एक देश की आर्थिक उन्नत्ति के लिए बहुत आवश्यक है और एक देश तभी विकिसत माना जाता है जब वह अपने नागरिकों को पर्याप्त मात्रा में रोजगार उपलब्ध करवा पाए। जिससे वहाँ के निवासी गरीबी से छुटकारा पा कर एक अच्छा जीवन व्यतीत कर सकें।

पर्यावरण एक देश की आर्थिक उन्नत्ति में बहुत ही महत्वपूर्ण भूमिका निभाता है । एक राष्ट्र के विकास का एक बड़ा हिस्सा विभिन्न में भारी उद्योगों में उत्पादन से जुड़ा होता है। प्राकृतिक संसाधन जैसे कि पानी, जीवाष्म ईधन, मिटटी आदि उत्पादन क्षेत्र के विभिन्न क्षेत्रो में आवश्यक होते है हालांकि उत्पादन के परिणामस्वरूप पर्यावरण द्वारा प्रदूषण का भी अवशोषण होता है इसके अलावा उत्पादन के लिए संसाधनों का ज्यादा इस्तेमाल के कारण से पर्यावरण में प्राकृतिक संसाधनों की कमी की समस्या भी उत्पन्न हो जाती है प्राकृतिक संसाधनों के लगातार हो रहे उपयोग तथा बढ़ते प्रदूषण स्तर के कारण इन संसाधनों की गुणवत्ता ख़राब हो रही है जिससे ना सिर्फ उत्पादन की गुणवत्ता प्रभावित होगी बल्कि इसके उत्पादन में लगे श्रमिको में भी स्वास्थ्य संबधी समस्याएँ उत्पन्न होगी और इसके साथ ही उनके लिए भी यह बहुत हानिकारक सिद्ध होगा जिनके लिए यह बनाया जा रहा है अतः आर्थिक विकास का आनंद लेने के लिए यह काफी जरुरी है कि हम पर्यावरण संसाधनों के संरक्षण को विशेष महत्त्व दे । क्योंकि इससे प्राप्त हुई तरक्की का आनंद न सिर्फ हम ले पाएँगे बल्कि आने वाली पीढ़ियां भी इससे लाभान्वित होंगी ।

मुख्य शब्दः पर्यावरण, आर्थिक विकास, प्राकृतिक संसाधन, भारी उद्योग।

प्रस्तावना

अर्थव्यवस्था और पर्यावरण जटिल अन्योन्याश्रित प्रणाली है। निरन्तर आर्थिक विकास और मानव अस्तित्व उत्पादन में उपयोग किए जाने वाले प्रकृति संसाधनों और प्राकृतिक पारिस्थितिक तन्त्र की जीवन सह सेवाओं पर निर्भर करता है। पर्यावरण मानवता को एक जैविक प्रजाति के रूप में देखता है जो प्राकृतिक दुनिया पर पूरी तरह से निर्भर है। यदि वायुमण्डलीय रसायन बिगड़ रहा है और मानव आबादी पहले से ही खतरनाक रूप से बड़ी हो गयी है तो पृथ्वी के कई महत्वपूर्ण संसाधन समाप्त होने वाले हैं। प्राकृतिक पारिस्थितिक तंत्र में स्वस्थ पर्यावरण रूपी कुआ का धीरे धीरे क्षरण हो रहा है। इसके लिए आर्थिक विकास के तहत दुर्लभ प्राकृतिक संसाधनों का दोहन एक सीमा में ही करना चाहिए अन्यथा हमें अपूर्णनीय परिणाम भुगतने होंगें। मनुष्य युगों व वर्षो से भौतिक पर्यावरण का अतिक्रमण करता आ रहा है। सबसे पहला अतिक्रमण तब हुआ जब मनुष्य बस्तियों में चले गये और जंगलों को काट कर खेतों में बदल दिया जैसे जैसे मनुष्य दुनिया भर में फैलते हैं, वे खेतों, शहरों और मानव बस्तियों के लिए रास्ता बनाने के लिए पेड़ों और दलदली खरपतवारों को विस्थापित करते हैं। इसमें मानव द्वारा धनोपार्जन से सम्बन्धित सभी मानव क्रियाओं को शामिल किया जाता है जैसे कृषि, उद्योग, व्यापार, वाणिज्य, परिवहन आदि। ऐसी कई आर्थिक गतिविधियॉ इसमें शामिल हैं। जिसमें आर्थिक पर्यावरण स्थिर नहीं रहता है। आर्थिक पर्यावरण देश की आन्तरिक एवं अन्तर्राष्ट्रीय परिस्थितियों से भी प्रभावित रहता है। आर्थिक विकास पर्यावरण पर निर्भर करता है। यह देश की प्रगति को संचालित करने में भी सहायक होता है। यदि देश का आर्थिक विकास और पर्यावरण सही दिशा में संचालित होगे तो मानव जीवन भी सुखमय होगा। अतः यह कहा जा सकता है कि आर्थिक पर्यावरण की अनुकूलता देश के आर्थिक विकास को आगे ले जाने में सहायक का कार्य करती है।

अध्ययन का उद्देश्य

वर्तमान में निरन्तर हो रहे आर्थिक विकास और प्राकृतिक संसाधनों का प्रचुर मात्रा में विदोहन हो रहा है। इस प्रकार पर्यावरण भी आर्थिक विकास में अहम भूमिका निभा रहा है। लेकिन इसके दुष्परिणाम पर्यावरण पर भी पड़ रहे हैं। इस अध्ययन के प्रमुख उद्देश्य इस प्रकार हैं।

1. पर्यावरण क्या है जानने का उद्देश्य?
2. आर्थिक विकास की प्रक्रिया क्या है?
3. आर्थिक विकास व पर्यावरण के बीच सहभागिता को जानना।
4. वर्तमान आर्थिक निर्णयों में अभी और भविष्य में अर्थव्यवस्था पर्यावरण की स्थिति जानना
5. वर्तमान और भविष्य दोनों में लोगों की भलाई के बारे में चिंता, जिसमें वर्तमान जरूरतों को पूरा करना और भविष्य की पीढियों की क्षमता को वर्तमान से कम नहीं होने देना शामिल है।

पर्यावरण

पर्यावरण को अंग्रेजी में म्दअपतवदउमदज कहा जाता है। म्दअपतवदउमदज शब्द फ्रेन्च भाषा के म्दअपतवददमत शब्द से बना है। जिसका अर्थ होता है घिरा या घिरा हुआ है। इस प्रकार पर्यावरण का शाब्दिक अर्थ हमारे आस पास का वातावरण है जो पृथ्वी पर जीवन चक्र को

सम्भव बनाता है। पर्यावरण अंग्रेजी म्दअपतवदउमदज शब्द हिन्दी अर्थ है। पर्यावरण शब्द का निर्माण दो शब्दो से मिल कर हुआ है अर्थात् पर्यावरण शब्द 'परि' व 'आवरण' के संयोग से बना है। परि का आशय चारों ओर तथा आवरण का आशय परिवेश है। दूसरे शब्दों में कहें तो पर्यावरण अर्थात् वनस्पतियों, प्राणियों और मानव जाति सहित सभी सजीवों और उनके साथ सम्बन्धित भौतिक परिसर को पर्यावरण कहते हैं। वास्तव में पर्यावरण में वायु, जल, भूमि, पेड पौधे, जीव जन्तु, मानव और उनकी विविध गतिविधियों के परिणाम आदि सभी का समावेश होता है।

शिक्षा के माध्यम से पर्यावरण का ज्ञान शिक्षा मानव जीवन के बहुमुखी विकास का एक प्रबल साधन है। इसका मुख्य उद्देश्य व्यक्ति के अन्दर शारीरिक, मानसिक, सामाजिक, सांस्कृतिक तथा आध्यात्मिक वृद्धि एवं परिपक्वता लाना है। प्राकृतिक वातावरण के बारे में ज्ञानार्जन की परम्परा भारतीय संस्कृति में आरम्भ से ही रही है। परन्तु आज के भौतिकवादी युग में परिस्थितियॉ भिन्न होती जा रही हैं। एक ओर जहॉ विज्ञान एवं तकनीकी के विभिन्न क्षेत्रों में नए-नए आविष्कार हो रहे हैं तो दूसरी ओर मानव परिवेश और पर्यावरण भी उसी गति से प्रभावित हो रहा है। लोग अपने आस पास के आवरण को नष्ट करने का हर सम्भव प्रयास करने में लगे हुये हैं जिससे पर्यावरण को दिन प्रतिदिन क्षति हो रही है जिससे आज पर्यावरण संरक्षण की आवश्यकता महत्वपूर्ण विषय बन गया है।

आर्थिक विकास

आर्थिक विकास से आशय उस प्रक्रिया से है, जिसके परिणामस्वरूप देश के समस्त उत्पादन साधनों का कुशलतापूर्वक दोहन होता है। साथ ही साथ राष्ट्रीय आय और प्रति व्यक्ति आय से निरन्तर एवं दीर्घकालिक वृद्धि होती है तथा जीवन स्तर एवं मानव विकास सूचकांक में सुधार की स्थिति उत्पन्न होती है।

आर्थिक विकास को आमतौर पर नए प्राकृतिक संसाधनों से कुल उत्पादन में वृद्धि का मौजूदा संसाधनों के बेहतर उपयोग के रूप में परिभाषित किया जाता है। इसे प्रतिव्यक्ति आय बढ़ी हुई वास्तविक आय से माना जाता है। सभी आर्थिक विकास में प्राकृतिक दुनिया को बदलना शामिल है जिसमें पर्यावरणीय गुणवत्ता प्रभावित होती है जिसके परिणामस्वरूप आर्थिक विकास के साथ पर्यावरणीय गुणवत्ता भी बढ़ रही है अर्थात् आर्थिक विकास तब होता है जब अर्थ व्यवस्थायें अधिक प्रकार की वस्तुएं और सेवाएं प्रदान करती हैं और जैस जैसे उपभोक्ताओं की खर्च करने की शक्ति बढ़ती है जिससे वस्तुओं की मांग बढ़ती है और जिसके चलते वस्तुओं का उत्पादन अधिक से अधिक करने के लिए प्राकृतिक संसाधनों का विदोहन होता है जिससे देश में अधिक लोगों के जीवन स्तर में वृद्धि होती है और परिणामस्वरूप उच्च स्तर की शिक्षा, अधिक रोजगार और उपभोक्ता आय में भी वृद्धि हो जाती है।

आर्थिक विकास और पर्यावरण

आर्थिक विकास और पर्यावरण का मुद्दा अनिवार्य रूप से उस प्रकार के दबावों से सम्बन्धित है जो आर्थिक विकास, राष्ट्रीय और अन्तर्राष्ट्रीय स्तर पर समय के साथ पर्यावरण पर प्रभाव डालता है। पारिस्थितिकी और अर्थव्यवस्था के बीच सम्बन्ध तेजी से महत्वपूर्ण हो गये हैं क्योंकि मनुष्य धीरे धीरे इस प्रभाव को समझते हैं कि आर्थिक निर्णयों का ग्रह की स्थिरता और गुणवत्ता पर प्रभाव पड़ता है। पृथ्वी के प्राकृतिक संसाधन आर्थिक विकास को सीमित करते हैं। ये सीमाएं संसाधन प्रतिस्थापन, तकनीकी प्रगति और संरचनात्मक परिवर्तनों की सीमा के साथ बदलती रहती है। सन् 1960 के दशक के अन्त में कई लोगों को डर था कि दुनिया में उपयोगी प्राकृतिक संसाधन जैसे धातुओं की आपूर्ति समाप्त हो जाएगी लेकिन आज भी कीमती धातुओं की भरमार है और उनकी कीमतों में गिरावट आई है लेकिन जल, जंगल और स्वच्छ हवा जैसे कुछ संसाधनों पर हमला हो रहा है परन्तु आज आर्थिक विकास की दिन प्रतिदिन जो वृद्धि हो रही है उसमें पर्यावरण प्राकृतिक संसाधनों के रूप में अहम भूमिका निभा रहा है।

आर्थिक विकास और पर्यावरण संरक्षण के बीच सहभागिता

आर्थिक विकास और पर्यावरण संरक्षण आपस में विवादास्पद प्रतीत होते हैं और दोनों के सम्बन्ध में लम्बे समय से विपरीत विचार रहे हैं। इस अध्ययन में पर्यावरण और आर्थिक विकास के बीच आन्तरिक सम्बन्ध का विश्लेषण करने पर परिणाम बताते हैं कि पर्यावरण संरक्षण अल्पावधि में आर्थिक विकास को धीमा कर सकता है लेकिन लम्बे समय के परिणाम के रूप में पर्यावरण संरक्षण धीरे धीरे आर्थिक विकास के बुनियादी ढांचे में सुधार कर सकता है और आर्थिक विकास को बढ़ा'वा देने में पर्यावरण और अधिक समन्वित हो जायेगा। आर्थिक विकास को बढावा देने का एक प्रभावी तरीका वैज्ञानिक और तकनीकी नवाचार को बढ़ावा देना और प्रतिभाओं को विकसित करना और क्षेत्रीय सहयोग में सुधार करना है जो आर्थिक विकास पर पर्यावरण संरक्षण के नकरारात्मक प्रभाव को कम कर सकता है। आर्थिक विकास के तरीके को बदल कर पर्यावरण संरक्षण के प्रति लोगों की जागरूकता बढ़ा कर आर्थिक विकास पर पर्यावरण संरक्षण के सकारात्मक प्रभाव को बढ़ाना भी आवश्यक है। इस प्रकार पर्यावरण और आर्थिक विकास के बीच समन्वय बना रखा जा सकता है। दोनों को लगातार मजबूत किया जा सकता है जो आर्थिक विकास पर पर्यावरण संरक्षण के नकारात्मक प्रभाव को कम कर सकता है। आर्थिक विकास के तरीके को बदल कर पर्यावरण संरक्षण उद्योग को विकसित करके और पर्यावरण संरक्षण के प्रति लोगों की जागरूकता बढ़ा कर आर्थिक विकास पर पर्यावरण संरक्षण के सकारात्मक प्रभाव को बढाना भी आवश्यक है।

प्राकृतिक संसाधनों के विदोहन का पर्यावरण पर प्रभाव

बढती जनसंख्या एवं आर्थिक विकास के फलस्वरूप हमारे देश में बडे पैमाने के उद्योगों का विकास हुआ। लोहा, इस्पात, सीमेन्ट, रसायन, उर्वरक, वस्त्र, मोटर गाडी, रेल, वायुयान आदि बनाने वाले उद्योगों को बड़े पैमाने पर स्थापित किये गये हैं। इनमें मशीनों का प्रयोग किया जाता है ये मशीनें ऊर्जा के साधनों जैसे कोयला, विद्युत, पैट्रौल आदि द्वारा चलायी जाती हैं। कुशल श्रमिक इन मशीनों को चलाते हैं। मानव द्वारा नई नई तकनीकों के विकास के कारण उद्योगों में स्वचालित यन्त्रों का प्रयोग बढ़ता जा रहा है। फलस्वरूप बड़े-बड़े उद्योगों द्वारा कच्चे माल के रूप

में संसाधनों का अधिकाधिक दोहन एवं उपयोग किया जाने लगा है। जिससे आर्थिक विकास तो हो रहा है लेकिन हमारा पर्यावरण प्रभावित हो रहा है।

1. उद्योग किसी देश या क्षेत्रों के संसाधनों का कच्चे माल के लिये अधिकाधिक दोहन करते हैं जैसे दियासलाई, कागज एवं फर्नीचर आदि उद्योगों के लिए कच्चा माल वनों से प्राप्त होता है। इस कारण वनों की अन्धाधुन्ध कटाई की जाती है जिससे वनों के साथ साथ पर्यावरण पर नकारात्मक प्रभाव पड़ रहा है।
2. वन क्षेत्रों के कम होने का प्रभाव पर्यावरण पर अनेक रूपों में पड़ता है जैसे ऑक्सीजन की कमी, कार्बनडाई ऑक्साइड की अधिकता जिससे जलवायु एवं मौसम में परिवर्तन आदि।
3. बडे उद्योगों के लिए संसाधन प्राप्त करने के लिए नदियों पर बाँध बनाना, खनिज प्राप्त करने के लिए पहाड़ व पठार के स्वरूप को खण्डित करने का प्रभाव भी पर्यावरण पर पड़ता है जिससे भूकम्प, भूस्खलन, बाढ़, सूखा आदि प्राकृतिक आपदाएं घटित होती हैं।
4. उद्योगों की स्थापना में कृषि भूमि की कमी हो जाती है उससे निकलने वाले कचरे से कृषि भूमि बंजर हो जाती है।
5. उद्योगों में जब भूमिगत जल का उपयोग होता है तब अधिक जल के निष्कासन से भूमिगत जल स्तर नीचे चला जाता है। जिससे आस पास के क्षेत्र के कुँए व हैण्डपम्प का जल स्तर सूख जाता है।

निष्कर्ष

प्राकृतिक वातावरण का हमारे सामाजिक व आर्थिक जनजीवन पर व्यापक प्रभाव पडता है। कृत्रिम एवं सामाजिक वातावरण का निर्माण हमारे सुखी एवं समृद्ध जीवन से है। इसलिए आर्थिक पर्यावरण में अर्थ व्यवस्था की स्थिति, आर्थिक नियम, मान्यताऐं, आर्थिक विकास की दिशा आदि शामिल है। आर्थिक विकास एवम् पर्यावरण मानव की आर्थिक क्रियाओं से सम्बन्धित है। इसमें मानव द्वारा धनोपार्जन एवं उसे कुशलतापूर्वक व्यय करने से सम्बन्धित सभी क्रियाओं को शामिल किया जाता है जिससे आर्थिक पर्यावरण स्थिर नहीं रहता हैं। आर्थिक विकास एवं पर्यावरण देश की आन्तरिक एवं अन्तर्राष्ट्रीय परिस्थितियों से भी प्रभावित रहता है। आर्थिक समृद्धि एवं विकास पर्यावरण पर निर्भर करता है। आर्थिक पर्यावरण रोजगार मूलक है और देश की प्रगति को संचालित करने में भी सहायक होता है। लेकिन यदि आर्थिक पर्यावरण प्रतिकूल हो तो गरीबी, बेरोजगारी, भुखमरी, जन असन्तोष का सामना करना पड़ता है। जो किसी देश के आर्थिक विकास को अवरूद्ध कर सकता है। यदि किसी देश का आर्थिक पर्यावरण सही और सन्तुलित होगा तो देश प्रगति एवं विकास के मार्ग पर आगे बढ़ेगा। लोक कल्याणकारी योजनाएं भी सही दिशा में संचालित होंगी। मानव का सुखमय जीवन भी आर्थिक पर्यावरण के सन्तुलित विकास पर निर्भर करता है।

अतः मानव के लिए पर्यावरण का अनुकूल और सन्तुलित होना बहुत जरूरी है। यदि हमने पर्यावरण संरक्षण पर अभी से ध्यान नहीं दिया तो आने वाला मानव जीवन अन्धकारमय हो जायेगा। आर्थिक विकास के साथ साथ हमें पर्यावरण का भी ध्यान रखना होगा। आर्थिक पर्यावरण को बचाये रख कर हम मानव जीवन को सुखी और सुरक्षित कर सकते हैं। अतः यह कहा जा सकता है कि आर्थिक विकास एवं पर्यावरण की अनुकूलता देश के विकास को आगे ले जाने में सहायक का कार्य करती है।

सुझाव

जब अर्थव्यवस्था में तेजी से वृद्धि की क्षमता विकसित होती है तो कई नई चुनौतियॉ भी आती हैं। हमें आर्थिक वृद्धि या सतत विकास के नजरिये से यह निर्णय करना है कि दुर्लभतम संसाधनों का कैसे अनुकूलन उपयोग होगा। कई ऐसे प्रमाण हैं जो यह बताते हैं कि ऐसी नीतियों की वजह से कुल मिला कर मानव कल्याण घट सकता है। आर्थिक वृद्धि प्राकृतिक संसाधनों के अनुकूलन उपयोग पर आधारित होनी चाहिए और साथ ही विकास को पर्यावरण की दृष्टि से सन्तुलित रखा जाना चाहिए। पर्यावरण और आर्थिक विकास में परस्पर सम्बन्ध है। पर्यावरण और सामाजिक आर्थिक विकास आपस में इस तरह से सम्बद्ध हैं कि उनके पर्यावरण पर पड़ने वाले प्रभाव के बिना विकास की कल्पना नहीं की जा सकती है। औद्योगिक उत्पादन में प्राकृतिक संसाधनों और कच्चे पदार्थो जैसे कि जल, इमारती लकड़ी और खनिजों का प्रयोग किया जाता है और इसी के चलते औद्योगिक वृद्धि पर्यावरण के नुकसान के ऐजेन्डे की स्थिरता के लिए अच्छा सन्तुलन कायम करना बहुत जरूरी है। पर्यावरणीय, आर्थिक और सामाजिक क्षेत्र में सतत विकास के लिए सभी आयामों का सन्तुलित तरीके से इस्तेमाल करना होगा। विकास तभी टिकाऊ रह सकता है। जब वह प्राकृतिक सन्तुलन की रक्षा करता हो।

विकास एक निरन्तर चलने वाली प्रक्रिया है। हालांकि हर विकास के अपने सकारात्मक और नकारात्मक नतीजे होते हैं। लेकिन जब निवासियों के लाभ के लिए विकास किया जा रहा हो तो पर्यावरण का ख्याल रखना भी उतना ही जरूरी है।

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7. पर्यावरण नियोजन एवं समन्वय संगठन ई-5 भोपाल
8. समाचार पत्र- राजस्थान पत्रिका, दैनिक भास्कर

हिन्दी साहित्य और योग, अध्यात्म

डॉ0 अभयवीर

सहायक आचार्य, हिन्दी विभाग, कमला स्नातकोत्तर महाविद्यालय, धौलपुर, राजस्थान, भारत

सारांश

हिन्दी साहित्य और योग, अध्यात्म का बेजोड सम्बन्ध है। साहित्य समाज का दर्पण है तो योग और अध्यात्म एक सिक्के के दो पहलु हैं। हिन्दी साहित्य में योग और अध्यात्म को लेकर अनेक कवि और लेखकों ने अपने विचार प्रकट किये हैं। भक्तिकाल के निर्गुण संत कबीर दास जी का योग और अध्यात्म सिद्धान्त समाज को नवीन प्रेरणा देने वाला है। उन्होंने साखी, सबद और रमैनी के माध्यम से योग और अध्यात्म का प्रचार और प्रसार किया। इसी श्रंखला में मीराबाई, बल्लभाचार्य, नागार्जुन, नानक, जायसी, जयशंकर प्रसाद, सूर्यकांत त्रिपाठी 'निराला, समित्रानंदन पन्त, महादेवी वर्मा, आदि के साहित्य में योग और अध्यात्म का चिंतन भरा पड़ा है। हिन्दी साहित्य में योग और अध्यात्म की चर्चा से कोई कोना अछूता नहीं है।

साहित्य समाज का दर्पण है तो योग और आध्यात्म एक सिक्के के दो पहलू हैं। क्योंकि योग द्वारा ही संभव है धर्म पालन हिंदी साहित्य में योग और अध्यात्म को लेकर काफी वर्णन मिलता है। वास्तव में धर्म अध्यात्म तथा योग अभिन्न रूप से जुड़े हुए हैं एक के अभाव में दूसरे की कल्पना भी नहीं की जा सकती। आज मानव जाति के लिए एक सुखी जीवन और शांतिपूर्ण विश्व के लिए ध्यान की अति आवश्यक भूमिका है। योग और अध्यात्म से बाहरी जटिलता और संघर्षों के बीच संतुलन और सादगी की खोज की जा सकती है। परमात्मा से व्यक्तिगत संबंध और दूसरों तथा स्वयं से स्वस्थ संबंध बनाए जा सकते हैं। आधुनिक विज्ञान और प्राचीन भारतीय दर्शन में एकरूपता नजर आना भारतीय अध्यात्म और योग का अहम योगदान है। अध्यात्म से संबंधित दुनिया की प्रथम साहित्य पुस्तक ऋग्वेद है । भारत में ऐसे संत दार्शनिक और लेखक हुए हैं जिनकी लिखे हुए का तोड़ दुनिया में और नहीं मिलेगा। उन्होंने जो लिख दिया वह अमर हो गया। इन लिखी हुई बातों का प्रचार प्रसार यूनान ,रोम और चीन मे हुआ। वेद, उपनिषद, महाभारत रामायण, मनुस्मृति, हितोपदेश, कथासरित्सागर, जैसी अनेक अध्यात्म एवं योग को लेकर साहित्य का भंडार भरा पड़ा है । जो कि योग और अध्यात्म की विशेष शिक्षा देता है।

मुख्य शब्दः हिन्दी साहित्य, योग, अध्यात्म, क्षेत्र, वर्णन, कवि, लेखक, योग की स्थिति, अध्यात्म का वर्णन, महत्त्व, उद्देश्य।

प्रस्तावना

हिन्दी साहित्य में योग और अध्यात्म काफी गहराई तकफैले हुए हैं। अनेक कवि और लेखकों ने योग और अध्यात्म को लेकर साहित्यिक रचनाओं का सृजन किया है। जिनमें योग और अध्यात्म की महत्ता दिखाई देती है। योग का वर्णन करते हुए लिखा गया है। शरीर और आत्मा को एक रूप करना ही योग है। मन के भावों से मुक्त करके शान्ति की प्राप्ति का रास्ता योग ही है। हिन्दी साहित्यकारों ने योग के कई सारे अंग और प्रकार बताए हैं। जिनको अपनाकर हम ध्यान, समाधि और मोक्ष तक पहुँच सकते हैं। योग और अध्यात्म की प्रक्रिया हिन्दू, जैन, बौद्ध धर्मों में ध्यान से व्याप्त है। हिन्दी साहित्यकारों ने वर्णन किया है। योग और अध्यात्म की चर्चा केवल भारत में ही नहीं भारत के अलावा चीन, जापान, श्रीलंका, म्यांमार के अलावा भी सम्पूर्ण विश्व में योग और अध्यात्म भारत से बौद्ध पंथ के द्वारा फैला हुआ है। 'योग' शब्द का उल्लेख हमारी साहित्यिक और धार्मिक रचना ग्रंथ ऋग्वेद' में और उपनिषदों में योग और अध्यात्म का वर्णन युगों पहले हो गया था। इसके बाद कठोपनिषद और पतञ्जलि को 'योगसूत्र योग का सबसे बड़ा ग्रन्थ हैं। इसकी रचना ईसा की प्रथम शताब्दी के आसपास हुई। ऐसा सम्पूर्ण उल्लेख हिन्दी साहित्यकारों ने अपने साहित्य ग्रन्थों में योग और अध्यात्म का वर्णन किया है। भारतीय अध्यात्मिक पुरुष स्वामी विवेकानन्द जी ने योग और अध्यात्म ज्ञान के संदेश को अमेरिका के शिकागो में देकर सम्पूर्ण विश्व में योग और अध्यात्म की महत्वता को सिद्ध किया। कबीर जैसे महान सन्त ने अपनी वाणियों में योग और अध्यात्म ज्ञान के रहस्य को स्पष्ट किया।

अध्ययन का उद्देश्य

1. हिन्दी साहित्य, योग और अध्यात्म को स्पष्ट करना ।
2. योग और अध्यात्म का संक्षिप्त परिचय एवं स्पष्टीकरण करना।
3. हिन्दी साहित्य में योग और अध्यात्म के विषय की समझाना।
4. हिन्दी साहित्य योग और अध्यात्म एक कड़ी के दो पहलु है। को स्पष्ट करना है ।
5. योग और अध्यात्म की शक्ति का स्पष्टीकरण करना।

विषय विस्तार

योग और अध्यात्म दोनों बिन्दुओं को लेकर युगों से चर्चा की गई और की जा रही हैं। हमारा हिन्दी साहित्य तो योग और अध्यात्म का एक पुन्ज है। योग और अध्यात्म को लेकर आदिकाल, भक्तिकाल, रीतिकाल, आधुनिककाल, के सभी संत, कवि और लेखकों ने अपनी साहित्यिक रचनाओं में योग और अध्यात्म के रहस्य को स्पष्ट करते हुए मानव के कल्याण हेतु योग और अध्यात्म की महत्वता को सिद्ध किया है। गुरु गोरखनाथ, मच्छेन्द्रनाथ सरहपा, लुईपा, चन्द्रवरदाई, जगनिक जैसे आदिकालीन विद्वानों योग और अध्यात्म की चर्चा की भक्तिकाल के संत कवियों में कबीर, नानक सुंदरदास, नरहरिदास, रामानंद, मलिक मुहम्मद जायसी, कुतुबन, तुलसीदास, सूरदास, कुम्भनदास, , चतुर्भुज दास, क्षीतस्वामी, मीराबाई और रसखान, अब्दुल रहीम खानखाना ने अपने विचार वर्णन में और साहित्यिक रचनाओं में योग और अध्यात्म की विस्तृत चर्चा की है। और यह सिद्ध करने का प्रयास किया है कि योग और अध्यात्म के बिना किसी भी सांसारिक मनुष्य को मोक्ष और परमात्मा की प्राप्ति नहीं हो सकती।

भक्तिकाल की परंपराओं से योग और अध्यात्म के रहस्य की लेकर रीतिकालीन कवि आचार्यो ने योग और अध्यात्म के रहस्य को स्पष्ट करने वाले आचार्य कवियों में आचार्य चिंतामणि, आ. भिखारीदास, आ. केशवदास, बिहारीलाल, देव, सेनापति, पद्माकर, घनानंद, आलम, ठाकुर, बोधा, भूषण जैसे श्रेष्ठ कवि आचार्यों ने रीतिकाल में अपनी साहित्यिक रचनाओं के माध्यम से, योग और अध्यात्म को स्पष्ट करते हुए योग के माध्यम से ही ईश्वर प्राप्तिका मार्गस्पष्ट करते हुए लौकिक से अलौकिक सत्ता तक पहुँचने का मार्ग प्रसस्त किया इस प्रकार हम यह स्पष्ट रूप से कह सकते है कि योग और अध्यात्म हमारे साहित्य की रीढ़ है। इसको यदि अलग कर दिया जाए तो हमारे हिन्दी साहित्य का कोई महत्त्व नहीं रह जाता। आधुनिक काल के साहित्यिक लेखन में आधुनिक कवि लेखकों ने योग और अध्यात्म की चर्चा सम्पूर्ण स्थानों पर की है। कविता लेखन, कहानी, उपन्यास, नाटक, एकांकी, आत्मकथा, जीवनी, यात्रा वृतांत, संस्मरण, डायरी लेखन पर दृष्टिपात करें तो हम पायेंगे कि सम्पूर्ण इन साहित्रिक विधाओं में योग और अधात्म की चर्चा, करते हुए मानव जीवन में इनके महत्व को स्पष्ट किया है कि योग और अध्यात्म ही किसी भी व्यक्ति के ऐसी शक्ति के पहलू है। जिनसे हर असंभव कार्य को संभव बनाया जा सकता हो

इसलिए सम्पूर्ण विश्व की मानवजाति के वर्चस्व को बनाये रखने के लिए योग और अध्यात्म के ज्ञान को ग्रहण करने से ही अपनी ज्ञान और शक्ति को पहचाना जा सकता है। इसलिए इस ज्ञान को प्राप्त करने का सीधा और सरल मार्ग हिन्दी साहित्य का ज्ञानार्जन करके ही हम योग और अध्यात्म के रहस्य को समझकर अपना और सम्पूर्ण मानव जाति का कल्याण कर सकते हैं।

निष्कर्ष

हिन्दी साहित्य दुनिया के सम्पूर्ण साहित्यों से विपुल भण्डार को अपने आप में समेटे हुए हैं। योग और आध्यात्म जैसे विषयों को लेकर अनगिनत साहित्यिक सृजन हिन्दी साहित्य में किया गया है। आदि- काल से लेकर आधुनिक काल तक अनगिनत संत, कवि, और लेखकों ने विविध विधाओं में जैसे कि प्रबन्ध एवं मुक्तक काव्य, चम्पू काव्य, पद्य की सम्पूर्ण विधाओं में लेखन करने के साथ-साथ गद्य की विधाएं भी अछूती नहीं हैं। जैसे कि उपन्यास, कहानी, नाटक, एकांकी, जीवनी, आत्मकथा, यात्रा वृतान्त संस्मरण जैसे विषय क्षेत्रों के साथ वेद उपनिषद ग्रन्थों में व्याप्त भूमिका को उपर्युक्त विधाओं में विविध कवि और लेखकों ने अपने-अपने अनुसार परिवर्तित रूप में चेतनामयी भाषा में, रूपान्तरित करके मानव जाति के कल्याण के लिए योग और आध्यात्म को व्याख्यायित किया है जिससे सम्पूर्ण विश्व में एक नवीन युग चेतना का संचार दिन - प्रतिदिन अग्रसर हो रहा है । हिन्दी साहित्य में व्याप्त इस योग और आध्यात्म विषय में सम्पूर्ण विश्व में एक क्रांतकारी परिवर्तन हो सकेगा । इसमें किसी प्रकार का कोई सन्देह नहीं । हिन्दी साहित्य की विविध साहित्यिक रचनाओं का विविध भाषाओं में रूपांतरण होने से विश्व का कोई कोना योग और आध्यात्म के ज्ञान से वंचित नहीं रह सकता । यहएक कोरी कल्पना ही नहीं यथार्थ में एक जीता जागता सत्य है ।

सन्दर्भ ग्रन्थ सूची

1. सर्वपल्ली राधकृष्ण , भारतीय दर्षन , दूसरा खंड लंडन , जॉर्ज एलन और एक हजार नौसौ छियासठ , तीन सौ अस्सी का पृष्ठ ।
2. हिन्दी साहित्य का इतिहास आचार्य रामचंद शुक्ल
3. वेद ऋग्वेद
4. रामचरित्र मानस
5. हठयोग (पृष्ठ 16)
6. हिन्दी साहित्य की भूमिका

श्रीमद्भागवत गीता एवं अध्यात्म का कुशल जीवन प्रबंधन मे योगदान

डॉ0 गौरी दीक्षित

सहायक आचार्य, संस्कृत, कमला महाविद्यालय, धौलपुर, राजस्थान, भारत

शोध सार

प्राचीन साहित्य में श्रीमद्भगवद्गीता को उच्च स्थान प्राप्त है। महर्षि व्यास द्वारा रचित यह पुस्तक मानवीय जीवन के विभिन्न आयामो की विवेचना करती है। मनुष्य के जीवन में उत्पन्न होने वाली सभी समस्याओं का हल इसी पुस्तक में छुपा हुआ है। यह अध्यात्म की महान पुस्तक है। इसी पुस्तक के माध्यम से जीवन प्रबंधन की कुशलता प्राप्त की जा सकती है। महाभारत के महान हीरो अर्जुन जब कर्म और अकर्म के कारण मोहग्रस्त हो जाते है और युद्ध को छोड़ना चाहते है तो श्री कृष्ण उसको प्रेरित करते हुए जीवन प्रबंधन के गुण सिखाते हैं । अपने धर्म के अनुसार कर्तव्य करने के लिए कहते हैं जैसे कि विद्यार्थी का धर्म विद्या ग्रहण करना और एक सैनिक का धर्म देश की रक्षा करना होता है , उसी प्रकार समय के अनुसार धर्म के अनुसार कर्तव्य करना चाहिए ।यही संदेश श्रीमद्भागवत गीता के माध्यम से मिलता है यही जीवन प्रबंधन के गुण हमारे जीवन में काम आते हैं ।

मुख्य शब्द- जीवन प्रबंधन, कर्म, अध्यात्म, विकास

जीवन प्रबंधन

श्रीमद्भागवत में बताया गया है कि यदि हमारी भावनाएं नियंत्रण में नहीं रहती तो हमें हमारे लक्ष्य से विमुख कर सकती है । श्री कृष्ण ने अर्जुन से कहा कि हवा को नियंत्रण में करना आसान है जबकि मन को नियंत्रण में रखना कठिन है। श्रीमद्भागवत गीता मे कर्म के महत्व को बताया गया है। कोई भी मनुष्य कर्म किए बिना नहीं रह सकता । समय के अनुसार नहीं किया गया कर्म आर्थिक, मानसिक एवं शारीरिक क्षति देता है । श्रीमद्भागवत गीता हमें समय प्रबंधन सिखाती है । गीता हमें सिखाती है कि कैसे अपने जीवन में बेहतर प्रबंधन से जीवन में कुशलता की प्राप्ति की जा सकती है। श्रीमद्भगवद्गीता नेतृत्व के गुणों का विकास करती है। अध्यात्म मस्तिष्क और शरीर मे संतुलन स्थापित करता है आत्मिक बल ही सच्चा बल है । श्रीमद्भगवद्गीता बताती है कि वास्तविक और अवास्तविक में क्या अंतर है । समय ही जीवन है ,यदि समय से कार्य नहीं किया जाता तो तनाव उत्पन्न होता है जो हमें हमारे लक्ष्य से दूर कर देता है क्रोध, ईर्ष्या , तनाव अस्थिरता पैदा होती है जिसको कि केवल श्रीमद्भगवद्गीता के संदेश के माध्यम से नियंत्रित किया जा सकता है और एक बेहतर मनुष्य से ही एक बेहतर समाज की संरचना संभव है । श्री कृष्ण एवं अर्जुन के मध्य संवाद कोई साधारण वार्ता नहीं है बल्कि जीवन प्रबंधन में सफलता की सीढ़ी है । श्रेष्ठ मनुष्य को श्रेष्ठ कर्म करने चाहिए, क्योंकि उसका अनुसरण अन्य लोग करते हैं ।प्रतिस्पर्धा के दौर में एक मनुष्य को दूसरे मनुष्य की मदद करनी चाहिए । उससे ईर्ष्या और द्वेष नहीं रखना चाहिए । इससे भावनात्मक स्थिरता प्राप्त होती है और मनुष्य संपूर्ण विकास की ओर अग्रसर होता है ।

गीता एवं व्यवहार

भागवत गीता हिंदुओं की सबसे बड़ा ग्रंथ है हिंदू मतानुसार श्रीमद्भागवत गीता में सभी समस्याओं का हल है यदि कोई मन मस्तिष्क में अनिर्णय की स्थिति हो तो भगवद गीता सभी समस्याओं का हल है । यद्यपि भगवत गीता हजारों साल पुराना ग्रंथ है लेकिन इसमें सफलता का राज छुपा हुआ है। यह आज भी प्रासंगिक हैं। दिन प्रतिदिन से लेकर कठिन से कठिन समस्या का समाधान इसके द्वारा संभव है। कोई भी व्यापार मे सफलता भी भगवत गीता के माध्यम से मिल सकती है। भगवान श्री कृष्ण भगवत गीता के माध्यम से अर्जुन को यह संदेश देते हैं कि कैसे मनुष्य को अपना जीवन जीना चाहिए, इसी जीवन को समझने के लिए इस ग्रंथ का अध्ययन करना अनिवार्य है। यह हमें जीवन प्रबंधन और जीवन कला के बारे में शिक्षा देती हैं । एक सज्जन मनुष्य को हमेशा मधुर व्यवहार करना चाहिए क्योंकि बहुत सारे मनुष्य विभिन्न विचारों के होते हैं, उन पर नियंत्रण केवल मधुर वाणी से हो सकता है। यदि कोई व्यक्ति किसी उच्च पद पर है तो उसे अपनी प्रतिष्ठा को बनाए रखने के लिए अच्छा व्यवहार करना चाहिए क्योंकि एक बड़े पद के व्यक्ति के व्यवहार को और उसके आदर्श को साधारण लोग अपने जीवन में उतारते हैं।

जीवन का लक्ष्य

काम, क्रोध और लोभ मनुष्य के यह सबसे बड़े शत्रु हैं ,जो नरक की ओर हमें ले जाती हैं। यह मनुष्य की आत्मा को नष्ट कर देते हैं । अतः अतिशीघ्र इनका त्याग आवश्यक है। भगवान् श्री कृष्ण कहते हैं कि यह बुराइयां हमारे जीवन में हमें बहुत कष्ट पहुंचाती है l यदि मनुष्य अपने लक्ष्य को प्राप्त करना चाहता है, तो बुराइयों को छोड़ देना चाहिए। यह जीवन के लक्ष्य को विचलित कर देती है [l]

मनुष्य को अपने धर्म के अनुसार कर्म करना चाहिए। श्री कृष्ण अर्जुन से कहते हैं कि मनुष्य को अपने धर्म के अनुसार कर्तव्य करना चाहिए जैसे कि एक विद्यार्थी का धर्म ज्ञान प्राप्त करना है और सिपाही का धर्म देश की रक्षा करना उसी प्रकार धर्म से तात्पर्य कर्तव्य से है ।

कर्म और धर्म

श्री कृष्ण अर्जुन से कहते हैं सभी इंद्रियां के ऊपर बुद्धि है ,अतः मनुष्य को अपनी बुद्धि के अनुसार कर्म करना चाहिए और सभी इंद्रियों को वश में रखना चाहिए lआंख, कान, नाक और जीभ यह सभी इंद्रियां सांसारिक आनंद के लिए है ,जैसे कि जीव अच्छे व्यंजनों के स्वाद के लिए हैं ,मनुष्य आंखों के द्वारा अच्छी वस्तु देखना चाहता है, इसी प्रकार से समस्त इंद्रियां मनुष्य के लिए भटकाने का रास्ता भी हैं lअतः मनुष्य को अपनी बुद्धि के अनुसार कर्म करना चाहिए ।

अर्जुन को उपदेश देते हुए श्री कृष्ण कहते हैं सफलता प्राप्त करने के लिए मनुष्य को आग्रह को जागना चाहिए l वह योगी के कर्म पर जोर देते हैं और समस्त मनुष्यों के मध्य समानता पर जोर देते हैं। धर्म का अर्थ कर्तव्य है इसलिए रीति रिवाज परंपरा पूजा अर्चना को सीमित करना चाहिए l मनुष्य को अपने लाभ और हानि को ध्यान में रखना चाहिए और अपनी बुद्धि को उचित स्थान पर रखना चाहिए l तब ही मनुष्य को जीवन में शांति मिलती है । तब योग का रास्ता बहुत ही आसान हो जाता है

इच्छाओं का त्याग

जो मनुष्य सभी इच्छाओं और अहंकार से ऊपर उठकर कार्य करता है 4:00 अपने कर्तव्य और कर्म को ध्यान में रखता है ,वही इस संसार में सुख प्राप्त कर सकता है। प्रबंधन का सबसे बड़ा गुण यही है एक व्यक्ति को सभी इच्छाओं को त्यागना चाहिए ,नहीं तो वह शांति प्राप्त नहीं कर सकता है। जो कर्म हम करते हैं उसका मन वांछित फल कभी नहीं मिलता है l कभी परिणाम अपेक्षित नहीं आते हैं । इसलिए मनुष्य को अपने विवेक के अनुसार काम करना चाहिए। मनुष्य को अहंकार का त्याग करना चाहिए और सत्य पर चलना चाहिए। यदि मनुष्य सफलता प्राप्त करना चाहता है तो श्रीमद्भागवत के द्वारा बताए गये रास्तो से लक्ष्य प्राप्त हो सकता है l

निर्णय लेने की क्षमता

जो व्यक्ति योग नहीं अपनाता है , उसे ज्ञान प्राप्त नहीं होता l स्थिर बुद्धि से ही कोई भी निर्णय लिए जा सकते हैं ।एक भावना रहित मनुष्य ही शांति प्राप्त करता है। इसलिए एक उच्च पद पर बैठे व्यक्ति को भावना से कार्य नही करना चाहिए और बुद्धि के अनुसार कार्य करना चाहिए lसमस्त सुख का मूल योग में है। यदि हम धन काम की लालसा करते हैं तो अपने लक्ष्य को प्राप्त नहीं कर सकते है।जो व्यक्ति भक्ति भावना को ऊपर रखता है, वह अपने विवेक को खो देता है और सही निर्णय नहीं ले पाता। प्रबंधन में आवश्यक होता है कि लालच को छोड़कर अपनी इंद्रियों को वश में रखना चाहिए ,अपनी भावनाओं को वश में रखना चाहिए और सही निर्णय लेना चाहिए । प्रत्येक व्यक्ति यह सोचता है कैसे प्रबंधन में कुशलता प्राप्त की जाए ? वास्तविकता यह है कि सर्वप्रथम उसे अपने जीवन में प्रबंधन हासिल करना चाहिए , स्वयं में प्रबंधन के गुण सीखने चाहिए । श्रीमद्भागवत गीता स्वयं के प्रबंधन पर जोर देता है पाश्चात्य ज्ञान हमें बताता है कि भौतिक जीवन में किस प्रकार सफल होना है ,जबकि भगवत गीता हमें हमारे स्वयं के विचार पर जोर देता है । युद्ध के प्रारंभ में जब दुर्योधन श्री कृष्ण के बजाय उसकी सेना को चुनता है ,तब यह बात सिद्ध हो जाती है कि ज्ञान बड़ा है या जनसंख्या ? क्योंकि अर्जुन ने श्री कृष्ण को चुना । भगवान श्री कृष्ण एक महान एवं कुशल प्रबंधक थे। महाभारत के इस महान युद्ध में श्री कृष्ण कृष्ण के माध्यम से पांडवों को विजय प्राप्त हुई। श्रीमद्भगवद्गीता निष्काम कर्म पर बल देती है। यह कारण और प्रभाव को बताती है जैसा कर्म करते हैं उसी प्रकार का फल हमें मिलता है। इसलिए कर्म का महत्व बहुत अधिक है। कर्म हमेशा निष्काम भाव से करना चाहिए, क्योंकि सफलता कठिन परिश्रम से मिलती है । श्रीमद्भगवद्गीता यह बताती है कि दो प्रकार की कार्य संस्कृति विद्यमान है । एक देवीय और दूसरी आसुरी संस्कृति है । देवीय संस्कृति में सत्य है। जबकि आसुरी संस्कृति में घृणा है झूठ है, दंभ है, चालाकी है, सारे है दुर्गुण है, जबकि जबकि दैवीय संस्कृति इसके विपरीत है। जीवन प्रबंधन में हमें धैर्य के साथ संस्कृति का पालन करना चाहिए। यह न केवल हमारे जीवन को आसान बनाती है बल्कि जीवन को जीने योग्य बनाती है

डॉ राधाकृष्णन ने कहा है कि समस्त उपनिषदों का सार एकमात्र भगवत गीता में है। इसी प्रकार गांधी ने कहा है कि जब कभी मैं किसी समस्या का सामना कर रहा होता हूं तो उसका समाधान मुझे भगवत गीता के माध्यम से ही मिलता है। प्रभुपाद ने हरे कृष्णा हरे रामा के द्वारा भगवत गीता को समस्त विश्व में पहुंचाने का कार्य किया। पूरा विश्व आज भगवत गीता को अपने मार्गदर्शन के रूप में देखता है पाश्चात्य संस्कृति मैं भी भगवत गीता एकमात्र ऐसा ग्रंथ है जो आज भी अपनी अपनी मूल्य से दिलों में राज करता है।

वर्तमान में भगवत गीता की उपयोगिता

भगवत गीता का आज के समय में क्या उपयोगिता है, यह प्रश्न मन में उठता है क्योंकि यह ग्रंथ लगभग 5000 साल पूर्व का है लेकिन आज भी यह प्रासंगिक है जब कभी हम प्रश्नों का हल नहीं ढूंढ पाते और तनाव में रहने लगते हैं। इसी प्रकार जीवन की बहुत समझ बहुत सारी समस्याएं हमको जब घेर लेती हैं तब हमें श्रीमद्भगवद्गीता ही उजाले की ओर ले जाती है ऐसा कोई समस्या नहीं जिसका समाधान इस ग्रंथ में विद्यमान नहीं है । जीवन प्रबंधन में इसकी उपयोगिता को दुनिया भी मानती है। इस ग्रंथ को न केवल भारत बल्कि विदेशों में भी उसी प्रकार सम्मान प्राप्त है। निश्चित रूप से यह कोई साधारण पुस्तक नहीं बल्कि तक युगों युगों तक चलने वाला एक संपूर्ण ग्रंथ है। यह दैवीय गुणों से युक्त है। महान वैज्ञानिक आइंस्टीन और महात्मा गांधी जैसे महान पुरुष विश्व में इसका लोहा मानते हैं

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Abstracts

Examine The Role of Ca^{2}+ In Ameliorating The Adverse Effect Of Drought Stress Responses In Pea (*Pisum Sativum*)

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Plants use various mechanisms to cope with drought constraints at morphological, physiological, and biochemical levels by means of different adaptive mechanisms. All organisms use a network of signal transduction pathways to control their metabolism for the adaptation in extreme environmental conditions. Among these pathways, calcium (Ca2+) ions play an important role in signaling pathway mechanism. Pea is one of the significant protein-rich pulse crops, and it is grown in various regions around the world. Thus it is an important member of agroecological cropping systems. Globally, several abiotic stresses are affecting the vegetative growth, yield, and nutritional quality of peas among them drought is one of the major factors which affect the pea on a large scale worldwide. This study was conducted to examine the role of Ca2+ in ameliorating the adverse effect of drought stress responses in pea genotypes. The plants were treated with mannitol (100mM and 200mM) and then supplemented with $CaCl_2$ (2mM, 5mM, 7mM, 10mM). Early seed germination, shoot growth, and chlorophyll content were similar to control plants in drought stress plants those treated with Ca^{2+}.

Environment Education at Elementary Stage

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"If the environment is happy, People will laugh
Your grief, will go away."

Environment education is process of receiving knowledge and experiences about the surroundings in which we live. Primary (Elementary) stage is the beginning stage when the child enters in the school life. At this stage students are more curious to learn about their surroundings.

Objectives of Teaching Environment Education at Elementary (NPE 2020) Stage

1. To familiar Students about Environment terms
2. To teach about hygiene and cleanliness
3. To introduce about different infectious disease
4. To identify some plants and their names.

Nature of Environment Education At Primary Stage

At this stage students learn about small terms of environment like air, water, some plants name, hygiene, breathing etc at different classes (1to5) in simple to complex way with various activities.

Relationship of Environment in different subject at Primary Stage

In Primary Education students learn different subjects Hindi, English, Math, and Science. In these subjects students learn about environment for example-any story related to environment

Syllabus of Environment Education at Elementary stage

At this stage some topics are teach through science like air, water etc. Some topic like importance of tree through set as well as merged in different subjects

Conclusion

At this level students are novice about environment education. At this stage teacher can teach about environment by Role Play Method, Project Method, and Group task etc.Teacher or aware them can teach about through Slogans like Save Tree ,drink clean etc.

Role of Green Chemistry in the Sustainability of the Environment

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Sustainable development is a development that protects the environment and the world's resources. We can achieve sustainable development by adapting the twelve principles of green chemistry. Green chemistry designs safer chemicals which are less toxic. It normally leads to low cost, use of less energy, environmentally friendly solvents and less production of waste. Green chemistry works on the principle of atom economy and minimum or no waste production. It encourages the use of renewable feed stocks and reduces the use of toxic and hazardous chemicals. It eliminates majorly stoichiometry reactions and prefers to use catalysis. It preserves the environment and safety requirements with added benefit of cost reduction.
The role of green chemistry aims to (a) design chemical processes and products that maximize profits (b) design safer chemicals and products by reducing or eliminating the use and generation of hazardous substances (c) design processes and products that work efficiently (d) utilize non-renewable feedstock's

Corrosion Inhibition of Copper by Carica Payaya Seed Extract in 1.5 M H_2SO_4 Acid Medium

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The inhibition of copper in 1.5M H_2SO_4 by Carica papaya seed extract was investigated applying the standard gravimetric technique at elevated temperatures in the range of 303 K to 343 K. The inhibition efficiency is found to increase with increasing concentration of extract and decreases with elevation in temperature. Maximum inhibition efficiency 82.67 % was achieved at 303 K temperature. The experimental data were fit into the Langmuir adsorption isotherm. Kinetic and Thermodynamic adsorption parameters were determined from experimental data. The mechanism of physical adsorption is proposed from the trend of inhibition efficiency with temperature as well as from the calculated values of Gibbs free energy (ΔG_{ads}), heat of adsorption, activation energy (E_{act}) and entropy of activation. Surface analysis was performed by FT-IR & SEM to ascertain the anti- corrosive characteristics of the inhibitor. Adsorption parameters indicate a strong interaction among the inhibitor and mild steel surface.

Traditional Herbs as Natural Product Matrices in Chemoprevention

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Medicinal plants are the major sources of valuable chemicals and drugs. Over 17000 medicinal plants are used in India, and out of them, 7500 are known for medicinal uses.Cancer is the most deadly disease that causes serious health problems, physical incapacities, mortalities, and morbidities around the globe. It is the second driving reason for death all over the world. Although great advances have been made in the treatment of cancer progression, still significant deficiencies and room for improvement remain. Chemotherapy produced a number of undesired and toxic side effects. Natural therapies, such as the use of plant-derived products in the treatment of cancer, may reduce adverse and toxic side effects. However, many plants exist that have shown very promising anticancer activities *in vitro* and *in vivo* but their active anticancer principle has yet to be evaluated. Consolidated endeavours of botanist, pharmacologist and scientific experts are required to discover new lead anticancer constituent to fight disease. This study will help researchers to assemble the information of new plant derived bioactive molecules which have been assessed for anticancer properties under *in vitro* and *in vivo* conditions.

Feeding Habits of Indian Peafowl (*pavo cristatus)* in Different Areas of Bharatpur, Rajasthan

Bhagat Singh[1] & Manju Lata[2]

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Present study was conducted to determine the food and feeding habits of Indian Peafowl in three study sites, which include urban area, agricultural land and hillock area. Point count method (Blondel et al., 1981) was followed during periodic fortnightly visits to all the three selected study sites. The Peafowls were observed to feed on flowers, fruits, leaves of plant species. These were sighted to feed on Brassica compestris (flowers, leaves), Trifolium alexandarium (flowers, leaves), Triticum aestivum (flowers, leaves, fruits), Oryza sativa (flowers, leaves, fruits), Chenopodium album (flowers, leaves, fruits), Parthenium histerophoresus (flowers, leaves), Pisum sativum (flowers, leaves, fruits), Cicer arientum (flowers, leaves, fruits), Pyrus pyrifolia (flowers, fruits), Ficus benghalensis (flowers, fruits), Ficus rumphii (flowers, fruits). They were also observed feeding on insects in all three study sites. The findings revealed that the Indian Peafowl, on one hand, functions as a predator of agricultural pests but, on the other hand, is itself a pest on agricultural crops.

Yoga Therapy Effect on The Modulation of Pcos And Comorbid Depression

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Background: Polycystic ovary syndrome (PCOS) is a prevalent endocrinopathy of reproductive-age women characterized by reproductive, endocrine, and metabolic abnormalities. It affects 5-15% of women worldwide. PCOS women are at an increased risk of suffering from menstrual irregularity, hirsutism, infertility, endometrial and ovarian malignancy.Despite extensive research, the current therapies are more or less effective in controlling symptoms but still fail to cure the disease. This study aims to determine the effects of yoga on PCOS.

Materials & methods: A total of 20 PCOS women (18-40 yrs)were enrolled in yoga (60 days, 5 days/week, 1 hour/day) under a Yoga therapist that included asanas (physical postures), pranayama (regulated breathing practice), and dhyana (meditation). ELISA was performed for oxidative stress (TAC, 8OHdG), and inflammatory markers (ESR, CRP, IL, TNF-α). Reactive oxygen species (ROS) have been detected by the chemiluminescence method. The severity of depression, health-related QOL for PCOS, and QOL were assessed.

Results: The practice of yoga resulted in improvement in reproductive health, regular menstrual cycles, and reduced hirsutism. The patients also showed a significant decline in ROS levels, circulating oxidative markers [8-hydroxy-2′-deoxyguanosine (8OHdG), total antioxidative capacity (TAC)], and inflammatory markers [erythrocyte sedimentation rate (ESR), c-reactive protein (CRP), Interleukin (IL), tumor necrosis factor α (TNFα)]. These cases also show significant improvement in quality scores and severity of depression.

Conclusion: -Yoga reduces inflammation, oxidative, and psychological stress, and improvement in QOL. There was an improvement in menstrual health. The patient had less anxiety, stress, and severity of depression. Hence, Yoga can be used as an adjunct therapy in the management of PCOS patients.

Usefulness of Yoga in Relation to Health in Present Times

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In view of today's need, there is a great need for yoga education, because the greatest happiness is to be healthy in the body. If your body is healthy then you have the biggest wealth in the world. Only a healthy person can do good for the country and the society. Therefore, in today's busy life, yoga is very necessary to keep oneself healthy and energetic. In the present environment, yoga is not only beneficial for us, but its significance has increased further in the context of solving the problems arising out of the world's increasing pollution and human busyness.

Yoga: Breath for Soul

Ms. Garima Sharma
Certified Yoga Instructor, USA

Through the practice of yoga, individuals can cultivate mindfulness, increase flexibility and strength, reduce stress and anxiety, and improve overall physical and mental well-being. Garima believes that yoga is a powerful tool for promoting a healthy and balanced lifestyle. Yoga can be seen as a divine chain reaction that begins with the practice of physical postures, or asanas, and leads to a deeper connection between the body, mind, and spirit. Through the practice of yoga, we become more aware of our physical sensations and our breath, which can help us to cultivate mindfulness and self-awareness. As we deepen our practice, we begin to experience a sense of inner peace and calm, which can help to reduce stress and anxiety. This inner peace can then lead to a greater sense of compassion and understanding for ourselves and others, as we become more attuned to our emotions and those of others. Ultimately, the practice of yoga can help to connect us to something greater than ourselves, whether that be a higher power, the universe, or simply a sense of interconnectedness with all living beings. This divine chain reaction is what makes yoga such a transformative practice, one that can help us to live more fully and with greater purpose.

Key Role of Yoga In Modern Society

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In today's world we are running towards fame, money, achievements but one
care about health, lifestyle, eating habits all this thing takes our life worse condition, its not only affect our physical but mental condition also. Yoga has become increasingly popular in modern society, and it plays a key role in promoting physical, mental, and emotional health. Here are some of the ways in which yoga is important in today's world:

Stress Reduction: Yoga is an excellent way to reduce stress and anxiety. Practicing yoga postures, breathing exercises, and meditation helps calm the mind and reduce stress levels.

Improved Physical Health: Regular yoga practice can improve flexibility, strength, balance, and overall physical health. It can also help to relieve pain and prevent injury.

Mental and Emotional Health: Yoga can help to improve mental and emotional health by reducing symptoms of depression, anxiety, and other mental health conditions. It can also increase feelings of self-awareness, self-esteem, and overall well-being.

Mindfulness: Yoga promotes mindfulness and self-awareness, which can help individuals become more present in their lives and improve their relationships with others.

Community: Yoga can provide a sense of community and support, as individuals come together to practice and learn from each other.

Overall, yoga offers a holistic approach to health and wellness that can benefit individuals in numerous ways. As such, it has an important role to play in modern society, where people are often looking for ways to reduce stress, improve their health, and connect with others.

Ways of Survival of the Westerners in India: A Context of the Westerners

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India, the land of gods, sages, spirituality and rich cultural and moral values, have ever since been a haunt to the westerners belonging to all the four corners of the world. Prabhupad, once an ordinary saint in India, has met immense heights as a saint all over the world through the establishment of ISKCON (International Society for Krishna Consciousness) and through his preachings on Krishna Consciousness. The magnetism of Swami Prabhupada's teachings can be realised in the fact that millions of the foreigners who had once been in the grip of materialism, imbibed the Vedic culture and submitted themselves whole-heartedly to Krishna Consciousness. Now the universal scenario is that in all the countries of the world there are branches of ISKCON that through their rigid code of spiritualistic living, behaving, eating pure vegetarian food, chanting Hare Krishna, are motivating people across the world to rest in spiritual peace, and thus to be one with God. The westerners who come to India for several reasons have to join various trades to survive themselves in India.

Bhakti & Spiritualism: A Scientific Perspective

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1-4. Bhakti Shakha, Vrindavan

Spiritualism is a way to be one with God, the omnipotent, omnipresent and omniscient. It is a state when man becomes one with God forgetting all his individualities and specific qualities. Spiritualism is the bringer of real calm of mind, balance in physical and mental personality and of the knowledge that everything in the world is illusion. A real spiritualism may be enjoyed only through meditation. Bhakti plays a vital role in bringing man closer to spiritualism and in developing in him spiritualistic features. Bhakti allows one to enslave himself to some one god or more than one god. In the state of Bhakti, man submits himself entirely to that god or gods and observes all such rituals about which he believes that it is only through those rituals that the god or gods can be pleased.

Protective Laws and Women's Empowerment in Rural Rajasthan: An Evaluation of the Prevention of Domestic Violence Act's Impact on Women's Lives

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This research paper evaluates the effectiveness of the Prevention of Domestic Violence Act (PDVA) in promoting women's empowerment in rural Rajasthan, India. The PDVA was enacted in 2005 to provide legal protection and support to women who are victims of domestic violence. The study aims to investigate the impact of the PDVA on women's empowerment in terms of their social, economic, and political participation. Using a mixed-methods approach, the research collected data from rural women in Rajasthan through surveys and focus group discussions. The study found that the PDVA has played a crucial role in empowering women by providing them with legal and social support, increasing their awareness about their rights, and giving them the courage to speak out against domestic violence. The study also revealed that women's economic and political empowerment has improved significantly due to the PDVA's provisions. Women are now more aware of their rights and have become more involved in decision-making processes at the community level. However, the research also identified some challenges, such as the lack of awareness and implementation of the PDVA, patriarchal attitudes, and a lack of access to justice for rural women. In conclusion, the study highlights the importance of protective laws, such as the PDVA, in promoting women's empowerment in rural areas. The research paper provides insights into the impact of the PDVA on women's lives and suggests policy recommendations for further improvements to increase its effectiveness in protecting women's rights and promoting their empowerment.

Tree Regeneration Status and Population Structure along the Disturbance Gradient of Dry Deciduous Forest in Jhalawar Forest Division (Rajasthan)

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The existence of forest community largely depends on its ability to regenerate under varied environmental conditions. The tree regeneration status and population structure along the disturbance gradient of Butea monosperma were studied in Jhalawar Forest Division (Rajasthan) of Malwa plateau of India. On the basis of disturbance index and canopy cover, the four forests locations viz., Aklera, Asnawar, Jhalawar and Khanpur of Butea monosperma, categorized into highly disturbed (HD), moderately disturbed (MD) and least disturbed (LD) forests were selected. A Total of 24 tree species were reported along the disturbance gradient. Regeneration status was determined based on population size of seedlings and saplings. Seedling and sapling density (individual/ha) varied between 500-800 and 750-1070 respectively. Maximum tree species (71.38%) showing good regeneration were reported from the highly disturbed Asnawar forest of Jhalawar forest division. Some tree species in the study area showed discontinuous regeneration because of absence of some of their diameter classes and these are feared to be in trouble in future. The overall regeneration status was fairly high in the study area of Asnawar and Jhalawar forest location and these communities may be sustained in future unless there is any major environmental stress or interference exerted by human activities. The study concludes that the mild disturbance does not adversely affect the plant diversity of the area; instead, it enhances regeneration of species due to creation of additional microsites.

Environmental Ethics And Bioremediation Technology For Soil Decontamination

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Deterioration of the earth's environment is threatening human global community. Ecologically malignant practices are deeply entrenched in the prevailing human culture. Human society should discriminate between technologies that meets human needs sustainably and those that harm earth's environment. Ethics is core issue in environment conservation and sustainable development. Ancient Indian civilization had reverence for environment based on ethics .Prithvi-Sukta of Atharveda emphasizes on maintaining regenerative capacity of mother earth. Today worldwide soil and water is contaminated with petroleum derivatives, xenobiotics and heavy metals. For choosing technology to decontaminate soil and water ethical aspects should also be taken into consideration. Bioremediation was practiced in ancient India, and is emerging as safe technology worldwide in last four decades

This paper analyses the conventional technologies versus bioremediation technology for abatement of petroleum pollution and heavy metal contamination. This paper also presents three studies conducted on bioremediation technology at ITM University, Gwalior. Indigenous bacteria were isolated, characterized and identified that have shown high potential to degrade petroleum hydrocarbons. Consortiums were more effective and degradation rate of several petroleum hydrocarbons was 100%. Bio-surfactant 13-decosenamide produced by *Corynebacterium* sp. further enhanced the degradation of petroleum hydrocarbons.

Bacillus cereus, Lysinibacillus fusiformis, Pseudomonas aeruginosa and *Serratia marcescens* has shown high bioremediation potential for heavy metals, lead, cadmium, mercury and zinc. Order of bioremediation potential was biofilms> consortiums > single species.

Three plant species *Sesbania bispinosa*, *Sorghum vulgare* and *Chenopodium album* were fairly tolerant to heavy metals, lead, cadmium and mercury; and all the three have good phytoremediation potential to extract these three metals from soil

Arbuscular Mycorrhizae: Role in Sustainable Agriculture

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India has a large and diverse agriculture and is one of the world's leading producers. But in present scenario the sustainable agriculture is deteriorating in land fertility due to non-equipment of required ingredients in soil. For this reason its presence on the world market has been modest in relation to the size of its agriculture. To achieve this agriculturist are following alternate technology, where microbes are the key players especially for protecting and regaining the soil health. Mycorrhizal fungi are key microbial engines which improve plant vigor and soil quality. They play a crucial role in plant nutrient uptake, water relations, ecosystem establishment, plant diversity, and the productivity of plants. They are ubiquitous in soil and create symbiotic associations with most terrestrial plants including agricultural crops, cereals, vegetables, and horticultural plants. In agriculture, several factors such as host crop dependency to mycorrhizal colonization, tillage system, fertilizer application etc. Interest in AM fungi propagation for sustainable agriculture is increasing due to its role in the promotion of plant health, and improvements in soil fertility and soil aggregate stability.

However, the importance of mycorrhiza in forest plantations has also received great attention when it was observed that trees often fail to establish at new sites if the mycorrhizal symbiont is absent. Forest trees are in general completely dependent upon a symbiotic association of their roots with mycorrhizal fungi. These fungi mobilize minerals from soil and transfer them to the plant. In exchange the trees deliver assimilated C to the fungi. Mycorrhizal fungi are now known to provide a wide range of significant benefits to their plant hosts. In addition to enhancing mineral nutrition, they induce greater resistance to soil pathogens, enhance tolerance to drought stress, and reduce sensitivity to toxic substances occurring in the soil. The capacity of some mycorrhizal fungi to promote both early growth and survival of crops is very important for commercial plantations on disturbed and difficult sites. In order to gain the optimum benefit from these fungi, care should be taken to use the appropriate management strategies to encourage their survival. Mycorrhizal interactions between plants, fungi, and the environment are complex and often inseparable. In present abstract, the role of mycorrhizae in sustainable agriculture and forestry is discussed.

Social Benefits of Yoga

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Yoga darshana and Ayurveda being contemporary science have influenced and complemented each other. The concept of yoga darshan are selectively incorporated in Ayurveda to suit its objectives wise. It is important to integrate yoga and Ayurveda in order to bring out a complete holistic healing system. Integrating yoga with Ayurveda adds a spiritual and psychological dimension to Ayurveda tends to become a mere physical model deraid of spiritual and vedic healing powers . Ayurveda focuses on individual's constitution or body type which is referred to as prakriti. It is defined as expression of a person in context to morphology, physiology, behavior and relation to ecology. "Yoga asanas according to the specific constitution of individual is cited in this article".

Climate Change: A Threat To Food Production

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The agricultural sector relies heavily on weather patterns and climatic conditions to determine the quality and quantity of produce. However, there has been an increase in greenhouse gases and temperature, resulting in unpredictable precipitation and changes in seasonal events. These alterations affect the physiology and production of plants, and sudden weather changes like heat waves and droughts can lower the quality and market value of crops. Climate change has also led to changes in precipitation patterns, causing some regions to experience more frequent and severe droughts, while others face intense rainfall events. These changes lead to water stress for plants, making it difficult for them to adapt. Furthermore, these changes are causing a shift in the life cycle of insects, pollinators, and disease distribution, which affects the health and survival of plants. With global warming, temperature rises and heat waves become more frequent and intense, causing water loss through transpiration, especially during the flowering or reproductive phase of the plant, which adversely affects crop production. To cope with climatic changes and mitigate their impact, we must first understand the problem. Second, we need to rethink how we can maximize production from our fields while protecting and conserving resources efficiently. This can be achieved by selecting drought-resistant varieties, minimizing the use of insecticides, pesticides, and chemical fertilizers, and promoting agricultural practices such as hydroponics, vertical farming, and multilayer farming. We should also choose renewable energy resources, improve irrigation facilities, and practice water harvesting. Additionally, addressing climate change requires international cooperation and collaboration to reduce greenhouse gas emissions, share best practices, and provide financial support to vulnerable countries that are most affected by climate change. By taking these steps, we can ensure food security for everyone.

A Review of Recent Advancements in Solar Energy in India

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The utilization of solar power is becoming more prevalent due to its eco-friendliness and efficiency in comparison to traditional fossil fuels. Solar panels, composed of photovoltaic cells, harness sunlight to produce electricity that can supply energy to residential, commercial, and communal buildings. The expansion of solar energy is propelled by the growing demand for sustainable energy sources and technological advancements that make it more accessible and cost-effective. Given its numerous advantages and potential for growth, solar energy is anticipated to assume a more crucial role in meeting global energy demands. Solar energy, which is produced by sunshine, is an environmentally friendly and non-depleting renewable energy source. The world receives enough solar energy each hour to supply all of the energy needed each year. Today's generation requires electricity every hour. There are several uses for this solar energy, including domestic, commercial, and industrial ones. Energy may be produced easily from direct sunlight. It is therefore extremely efficient and does not harm the environment. In this article, we looked at solar energy from sunlight and assessed its properties and potential future trends. Additionally, the page aims to discuss the various types of solar panels, how they work, as well as applications and marketing techniques for them. The aim of this research paper is to propose a detailed review on the latest advancements in the areas of solar energy and its impact on the environment in India.

Effects of Different Rational Diet on Skin Pigmentation And Survivability in Fresh Water Teleost Fish: *Balantiocheilos Melanopterus (Bleeker)*

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Colour of fish skin is an important factor in aquaculture, which influence the commercial as well as edible value of fishes, mainly in those species sold live or fresh and as ornamental fishes. In most studies of fish colouration in aquaculture have focused especially on the effects of diet because some time their coloration affected with their different diets also. In the present study, the effect of dietary supplements in different rational diet prepared containing different ratio of ingredients. With basal feed were observed on the skin colour of selected fish species*Balantiocheilos melanopterus(Bleeker).* In that Fishes were divided in to three groups, A, B & C. Fishes were fed with different rational diets containing soybean, wheat flour, corn flour, sun flower oil, vitamins, minerals and without supplemented basal diet for 60 days. It has been observed, the colour of fish skin were change according to different rational diets as well as their survivability also enhance with the given diets during experiment under controlled environment of aquariums. For skin colour measurement MI Index scale was used. As result the skin colour of selected fish was changed according to different diet ingredients they became lighter (pale) in colour as before the treatments that time fishes were darker.

7 R's of Waste Management Towards Sustainability

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Waste management is an ongoing challenge for governments, businesses and individuals worldwide. The key to effective waste management is reducing the amount of waste generated and implementing sustainable waste management practices that minimizes the impact on the environment. Proper waste management is crucial for maintaining a healthy environment and preventing pollution. The 7R formula for waste management is a framework that emphasizes the importance of reducing, reusing and recycling waste to promote sustainable development. Here are the 7 R's: 1. Reduce: The first step is to reduce the amount of waste produced. This can be achieved by making conscious choices about the products we consume, such as opting for products with minimal packaging, buying in bulk or using reusable bags. 2. Reuse: The second step is to find ways to reuse items instead of throwing them away. This can involve repurposing items or finding new uses for them. For example, using old jars as storage containers or old newspapers as packing material. 3. Recycle: Recycling involves the process of converting waste materials into new products. This can involve separating recyclable materials from non-recyclable materials, such as glass, paper, plastic etc. 4. Refuse: Refusing items that cannot be recycled or reused is another important step in waste management. This can involve saying no to single-use plastic products or avoiding products with excessive packaging. 5. Repair: Repairing items instead of throwing them away can help extend their lifespan and reduce the amount of waste produced. This can involve fixing broken electronics, clothing or furniture. 6. Rot: Composting organic waste is another way to manage waste sustainably. Composting involves breaking down food scraps and yard waste into nutrient-rich soil that can be used for gardening. 7. Rethink: Finally, rethinking our approach to waste management is essential for promoting sustainable development. This involves considering the environmental impact of our choices and finding innovative solutions to reduce waste and promote a circular economy.

Contribution of ISKCON in the Transformation of the Socio-cultural Indian Environment

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With the change in times things keep changing, and the same is true of the Indian socio-cultural environment that has ever since been changing. In the present era when the Indian youth has detached itself from the socio-cultural and moral and spiritual values, there are several agencies that are contributing in their own way to pave a righteous path for the strayed people. ISKCON is one of them. The abbreviation ISKCON stands for International Society for Krishna Consciousness. It is a society the chief implication of which is to teach the people in the world that Krishna is the only truth in the world, and that it is only through is the devotion to Lord Krishna that the individual can be free from this illusionary world. Obviously, ISKCON is playing a vital role in transforming the socio-cultural environment of India.

Wildlife Photography for Creating Conservation Awareness

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India is one of the mega diversity countries in the world, with a mere 2.4 % of world 's land area, India accounts for 7.31 % of global fauna. Conservation is crucially important and critical for protecting biodiversity which is often severely impacted by human activity. A better understanding of the human element of our relationship with nature can be used for the purpose. Nature photography can create awareness about conservation . People learn and understand wildlife and conservation better when they get to appreciate the beauty captured through the eye of the photographer, which in turn, enhances interest in ecology and conservation. . Nature photography is more than just taking visually pleasing pictures it need to have an education element for the audience to be able to take something away … it not only loving the beauty of life on the planet but also becoming aware of the interconnection of life on Earth …pulling threads from the web of life makes the whole web collapse..it is about making general public aware of consequences of human activity… showing people the beautiful nature and the need to protect it , it enhances interest in ecology and conservation.

Conservation photography is more than just taking visually pleasing pictures it need to have an education element for the audience to be able to take something away … it not only loving the beauty of life on the planet but also becoming aware of the interconnection of life on Earth …pulling threads from the web of life makes the whole web collapse..it is about making general public aware of consequences of human activity…

Apathy or people's unconcern is the main reason that our environment and biodiversity are under threat .Why should we be bothered about biodiversity loss and degradation of environment? People do not have connection with natural world and biodiversity, Therefore they are unable to comprehend the consequences of its loss. Photograph is way to record, we have many places and species yet to be documented. When it comes to a rare or new species reported, the first thing people ask now is"where's the photo?" everyone expects to see photos accompanied with new sighting ..

Recently the sighting of an immature Slaty-breasted rail from Barmer, Rajasthan , the first confirmed record from Rajasthan, elicited huge interest , thanks to the photographic record. Photography can be used to appreciate wildlife and motivate the public to care about and become active participant to address conservation issues. Photography is the foremost tool in wildlife behavioural studies ,as that alone can confirm a particular behavioural aspect. Our forest are laboratories for behavioural studies on wildlife .Here I present some of my photographic recording of wildlife.

Synthesis, Complexation, Spectral Characterization And Comparison on Effect Of 4-Chloro Sulphanilic And 4-Chlorophenyl Resorcinol Azo Dye on Bidirectional Movement of Chromatophores In Isolated Scale of A Teleost Fish: Bala Shark

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New azo dyes ligands were formed by Diazotization Coupling reaction with sulphanilic acid, 4- chloro-aniline and 1,3-Resorcinol to yield 4-chloro sulphanilic dye (L1) and 4-chlorophenyl 1,3- Resorcinol azo dye(L2). Complexation of dyes was done with CuCl2.2H2O and NiCl2.6H2O. All the ligands and their complexes were characterized by UV, IR, 1H and 13C NMR, LC-MS specteroscopy and DSC. The cytotoxicity in freshwater fishes due to different industrial dyes in industrial effluents is a major worldwide issue. The newly synthesized 4-chloro sulphanilic dye dye was applied on isolated scale of a teleost fish (Bala Shark) in which bidirectional movement of chromatophores have been observed and found that there is no expansion and contraction activity in the cell have taken place. This will show that the chlorosulphanilic dye is not showing any toxicity to the aquatic animals it has stained the colour cells of fish scales and along with this growth lines also of the scale, (by which we can determine the age of fish) was also observed. On comparison of L1 with L2, it was observed that at low concentration L2 is more effective it not only stain the cell lines along with melenophores.

Waste Management: A Step Towards Sustainable Development

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The environment is everything in our immediate environment, both living and non-living. Our ability to survive depends on the environment, which also gives us access to resources like food, water, and shelter. However, human activities like industrialization, deforestation, pollution, and waste products have harmed the environment. A key component of sustainable development is waste management. It entails gathering, moving, treating, and disposing of trash in a way that reduces its negative effects on the environment and public health. By lowering pollution, saving resources, and fostering a circular economy, effective waste management solutions can make a significant contribution to sustainable development.

Waste management can support sustainable development in the following ways:

Reducing the amount of waste that enters landfills or the environment is one way that proper waste management helps reduce pollution. When garbage is not properly disposed of, it can contaminate soil, air, and water, which can have major negative effects on human health and the environment.

Resource conservation: By preserving resources, waste management may also support sustainable development. Waste may be converted into a resource by recycling and reusing it, which lessens the demand for new resources.

Energy recovery: Waste can be converted into energy through procedures like anaerobic digestion or incineration. This may lessen dependency on fossil fuels and encourage the adoption of renewable energy sources.

Waste management can also support a circular economy, in which trash is seen as a resource that can be used to make new goods. As a result, sustainable production and consumption habits are promoted, and the consumption of finite resources is decreased.

The best way to achieve sustainable waste management is to take a comprehensive approach that addresses all aspects of waste management, such as lowering trash creation, enhancing waste collection and transportation infrastructure, fostering recycling and reuse, and raising public knowledge and engagement. Diverse parties, such as the public, the commercial sector, civil society organizations, and governments, must be involved in this.

Waste management is a crucial component of sustainable development because it preserves natural resources while promoting environmental cleanliness and health. The harmful effects of trash on the environment, human health, and animals can be mitigated through good waste management practices.

Mathematical Analysis of the Role of Water-bugs on Mycobacterium ulceren Transmission Dynamics in the Presence of Arsenic in Surface Water Under the Influence of Awareness Programme Through Media

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Buruli ulcer (BU) is a chronic debilitating disorder of the skin that also affects the bones and is caused by *Mycobacterium ulcerans(MU)*. According to the World Health Organization (WHO), it is the third most common mycobacteriosis in humans after tuberculosis and leprosy. In this research article, we have mentioned a new non-linear mathematical model on the transmission dynamics of*Mycobacterium ulcerans* infection in humans as well as water bugs. This model is a hybrid of two epidemic models: the first is a SI model for the human population, and the second is a SI model for the water bug population. Here we applied a logistic magnification model to a vector population where susceptible water-bugs grow logistically with an intrinsic magnification rate (r) and environmental carrying capacity (k) when MU is absent. When MU is present, the infected water bugs contribute to the susceptible water bugs' magnification towards their carrying capacity. Only susceptible water bugs can reproduce. Water-bug life cycles do not differ significantly by season, and arsenic contamination of water was considered a variable within the model. In addition, we have enhanced this model through outreach to vulnerable humans. The sensitive human population is subdivided into two components: conscious sensitive humans ($S_{A)}$ and insensate sensitive humans (S_U). The analysis of the local stability of the model systems around the biologically possible balance is studied. The fundamental reproduction number (R_0) by the next-generation operator method has been derived. We also use sensitivity analysis to determine the relative importance of model parameters to disease transmission and prevalence. Conclusively, numerical reenactments are done graphically toillustrate energetic demeanor. These results show that the awareness program through the media has a valuable effect on the transmission dynamics of the disease.

Blueprint of The Cognitive Teaching-Learning Framework To Improve Higher Order Thinking Skills (Hots) Among The Learners In The Classroom

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Question posing (QP) is an art. The questions that a student asks in the classroom are crucial to both effective learning and scientific evaluation. They may be used as important resources for the teaching-learning process. Despite the ability of students' questions for reinforcing learning, a whole lot of this ability nonetheless stays untapped. In classroom teaching,the instructor is always concerned to address every query and the new question raised by the students but sometimes is least concerned when no query is generated. In the situation of no query or questions, the teacher moves on to the next topic as he should, but then thephrase "More study more confusion and less study no confusion" strikes a teacher's mind and he becomes very anxious to know whether his students have understood the topic or not. It means that when the queries/questions are asked in the classroom it indicates that the students are actively participating and understanding which in turn indicates that effective learning is happening. But the time for asking queries in classroom teaching and addressing every student query is a difficult task because classroom teaching is curriculum bound and the completion of the syllabus is as important as the query handling. Thus question-posing is a very important aspect of effective teaching-learning in classroom teaching. Right questions and further their solutions unfold the knowledge domain for students. The only problem is that every time this exercise cannot be executed in the classroom. After COVID-19, this barrier has also been removed. The breakthrough of COVID-19 gave us an opportunity to expand our classroom to online classrooms. Students' questions play an important role in meaningful learning and scientific inquiry. Question posing (QP) by students is an essential process for cognitive learning. They are a potential resource for both teaching and learning science. Despite the capacity of students' questions for enhancing learning, much of this potential still remains untapped. The purpose of this work, therefore, is to examine and review the existing research on students' questions and to explore ways of advancing future work in this area. The work begins by highlighting the importance and role of students' questions from the perspectives of both the learner and the teacher. It then reviews the empirical research on students' questions, with a focus on four areas: (1) the nature and types of these questions; (2) the effects of teaching students questioning skills; (3) the relationship between students' questions and selected variables; and (4) teachers' responses to, and students' perceptions of, students' questions. Following this, some issues and implications of students' questions for classroom instruction are also discussed. Also,e-QPeA (Question-Based Learning, Evaluation, and Assignment) teaching-learning framework is proposed to improve the higher-order thinking skills (HOTS) among the learners.

The Role of Youth in Sustainable Development

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Sustainable development involves a range of actions, from individual actions like reducing one's carbon footprint to corporate practices like committing to sustainable business operations to government policies like implementing sustainable development plans. The goal of sustainable development is to create a world where people can live healthy, productive lives and enjoy a good quality of life while using resources in a responsible and sustainable way. This requires us to rethink our current practices and systems in areas such as energy consumption, transportation, agriculture, and waste management. The role of youth in sustainable development is crucial, as they are the agents of change and have the energy, creativity, and passion needed to drive sustainable development. Some key ways to involve youth in sustainable development include:

1. Raising awareness: Youth can play a pivotal role in raising awareness about environmental issues and sustainable development goals, such as climate change, waste reduction, and biodiversity conservation.
2. Advocacy and policy-making: Youth can engage in advocacy and policy-making processes to influence and shape policies that promote sustainable development. By sharing their voices and opinions, they can create a more inclusive and representative policymaking process.
3. Innovation: The creativity and innovative mindsets of youth can help identify new solutions to the complex problems of sustainable development. Engaging youth in innovation labs, hackathons, and tech-enabled solutions can help unlock new possibilities for sustainable growth.
4. Entrepreneurship: Youth can act as change agents through entrepreneurship and start-ups, contributing to the development of sustainable businesses and solutions that benefit communities, societies, and the environment.
5. Education and capacity building: Education and capacity building programs for youth can help equip them with the skills, knowledge, and competencies required for sustainable development. These programs can include training on sustainable practices, access to resources and networks, and mentorship opportunities.

In conclusion, youth can have an immense impact on sustainable development by participating in and leading initiatives towards a more sustainable future. Investing in youth and empowering them to be change agents can bring significant benefits to communities, economies, and the environment.

Morphology, Pharmaco-kinetics, Detection, and Toxicology of Oleandrin

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Oleandrin, a highly lipid-soluble cardiac glycoside derived from the Nerium oleander, is a traditional herbal remedy. It is frequently used in the treatment of many diseases, including congestive heart failure. Oleandrin has recently received a lot of attention due to its potential anti-cancer and anti-viral properties. Oleandrin, however, has a limited therapeutic window and shows several toxicities, particularly classic cardiotoxicity, which frequently results in death. Its use in the clinic has been severely hampered by its extreme toxicity and poor polarity.The Paper discusses oleandrin's structural characteristics, natural sources, and methods of detection. The pharmacokinetic properties of oleandrin are summarised based on reported poisoning cases and sporadic animal experiments to deduce potential phenomena, such as enterohepatic circulation. Additionally, the pertinent variables affecting oleandrin's pharmacokinetics are examined, and some research strategies that may improve oleandrin's pharmacokinetic behavior are suggested. The creation of safe clinical applications for oleandrin may be feasible given potential research approaches to reduce toxicity after a thorough review of its toxicology.

The Antimicrobial Potential of M. Polymorpha's Bioactive Compounds For Sustainable Agriculture

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A plant species known as M. polymorpha or liverwort, has a number of bioactive chemicals that have the potential to have antimicrobial effects against plant diseases. These bioactive substances, which also include terpenoids, alkaloids, and flavonoids, have strong anti-inflammatory and antioxidant activities. Numerous studies investigated into the antimicrobial activity of M. polymorpha's bioactive compounds against a variety of bacterial and fungal plant pathogens. According to these investigations, M. Polymorpha extracts can stop the growth of a number of plant diseases, including Pseudomonas syringae, Fusarium oxysporum, and Rhizoctonia solani. These bioactive substances have the potential to be employed as organic pesticide substitutes, offering a long-term and sustainable method of managing plant diseases. The potential of M. polymorpha as a source of bioactive chemicals with antibacterial activity against plant diseases has been significantly demonstrated. To identify and characterize the bioactive substances that are responsible for the observed activity and to establish a strategy for their practical use in agriculture, more investigation is needed.

A Review on The Methods of Stress Management Among Undergraduate Students

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Stress management in today's life is an important aspect in leading a healthy emotional and physical life.Effective techniques for stress management are varied. They typically include behavior that improves physical health, such as nutrition and exercise, but may also incorporate strategies that improve cognitive and emotional functioning. The stress-reduction approach based on mindfulness practices has recently enjoyed an explosion of interest from a variety of healthcare and epidemiological researchers. The concept of mindfulness, which originates from the practices of Buddhism, is defined as a focused awareness of one's experience, and a purposeful and non-judgmental focus on the present moment. With practice, individuals learn to process emotions, thoughts, and sensations as they arise. Individuals learn to modify their reflexive conditioning from automatically reacting or worrying about the future to a more adaptive, measured response with greater awareness of the present moment. With practice, individuals can become Some individuals have a greater innate, or trait, capacity for mindfulness. These individuals, who have not participated in mindfulness-training interventions, tend to experience better physical health, report fewer physiological symptoms such as pain, and utilize fewer healthcare resources. Trait mindfulness has been associated with lower ratings of anxiety and depression in a variety of medical and non-medical populations. A recent epidemiological study of adolescent twins revealed that trait mindfulness was 32% heritable. The aim of this research paper is to propose a detailed review of the latest advancements in the field of stress management among undergraduate students.

Elimination Of Hexavalent Chromium Cr (Vi) With Activated Carbon Prepared From Of Withania Somnifera

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Chromium metal is found in industrial wastewater at a much higher concentration than the prescribed limit set by different regulatory authorities. Since chromium (VI) is very toxic and carcinogenic, it requires removal at source, that is, before its discharge to the water bodies. The present work is carried out for removal of Cr (VI) from aqueous solution by using activated carbon prepared from locally available Withania somnifera as a low-cost adsorbent in batch mode.Characterization of prepared activated carbon was done by FTIR, SEM-EDX. The effects of pH, adsorbent dose, contact time and initial metal ion concentration on removal of Cr (VI) were studied in batch process. Different kinetic and isotherm models were examined and the model parameters were determined.

Formation of Roads From Processing Plastic Waste Material For Environment Safety & Security

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Plastic roads are the need of the hour due to high durability, appropriate toughness and largely because of utilization of plastic waste materials to form pathways. Usually, the roads are made-up of bitumen composited with asphalt concrete. In contrast, plastic roads are made-up of modular, hollow and prefabricated articles obtained from consumer plastic waste materials. Rajagopalan Vasudevan, and Indian scientist, developed asphalt mixed plastic waste materials bases roads in 2001. In this way, recycling of the huge plastic waste material is possible. Consumer plastic waste materials can be observed very frequently along the roadsides, in piles of waste materials, in planes and even in far-flung hilly areas nowadays which were almost inaccessible a few decades back in India. Initially, plastic carry bags or generally called as polyethene, plastic cups, laminated plastics, soft & hard foams, and other waste plastic materials were used for inclusion into asphalt for the formation of plastic roads. Before inclusion, plastic waste articles are first of all washed properly, processed to a uniform size, melted at 165°C before blending with bitumen and hot aggregates. A unique mixture is obtained after blending plastic waste materials with bitumen and hot aggregates to form the main and final product requisite for the formation of plastic roads.
Plastic roads have been developed in India across a range of cities that include Chennai, Mumbai, Pune, Indore, Delhi, Lucknow, Surat and many others. Chennai was the first cosmopolitan city in India to form 1000 km long plastic roads in the year 2004. The first plastic road was laid down in Kambainallur in Panchayat town of Dharmpuri district in Tamilnadu. The technology has advanced for implementation at the international level in UK, Pakistan, Netherland, Australia, and even USA.

Forest Environment Protection

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Forests play an important role in environment protection. There is a long history of protection forests in mountain areas, where they help to prevent soil erosion, landslides and avalanches. Forests also respond to environmental protection. Forests have a major role to play in the protection of global carbon cycle .The relationship between forests and environment has been recognized for more than a thousand years, Yet forestry practices continue to cause damage to the environment in the form of soil erosion, water quality deterioration, and other adverse effects. Reforestation and afforestation could contribute to reducing atmospheric carbon dioxide concentrations, and the use of biofuels could help to reduce demand for fossils fuels.Forests influence climate change largely by affecting the amount of carbon dioxide in the atmosphere. When forests grow, carbon is removed from the atmosphere and absorbed in wood, leaves and soil .Assessments of the ecological stability of protection forests are still undertaken , and form an important step in the development of management prescriptions for such forests.
Keyword: Forests, Environment, Global, Carbon Cycle, Soil Erosion, Reforestation, Water Quality Etc.

The Role of Renewable Energy Technologies in the Environmental Protection

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Energy is invisible in nature but it can manifest itself through light, wind. Energy can neither be destroyed nor be created, it can only be transmitted from one form to another. Sun and stars are the ultimate source of energy. Energy can be in the form of thermal, radiant, electrical, mechanical, chemical, and atomic energy. Historically, man first had himself and the sun to provide energy. The primary sources of energy in the environment include fuels like coal, oil, natural gas, uranium, and biomass. All primary source fuels except biomass are non- renewable. Primary sources also include renewable sources such as sunlight, wind, moving water, and geothermal energy. The most important and inexhaustible source of energy is the sun. Energy drives economies and sustains societies. Energy production and use is also the single biggest contributor to global warming. The energy sector accounts for about two-thirds of global greenhouse gas emissions attributed to human activity.The environmental problems directly related to energy production and consumption include air pollution, climate change, water pollution, thermal pollution, and solid waste disposal. The emission of air pollutants from fossil fuel combustion is the major cause of urban air pollution. Renewable technologies are considered as clean sources of energy and optimal use of these resources minimize environmental impacts, produce minimum secondary wastes and are sustainable based on current and future economic and social societal needs. Renewable energy technologies provide an excellent opportunity for mitigation of greenhouse gas emission and reducing global warming through substituting conventional energy sources.

Childhood Respiratory Diseases and Air Pollution

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Global issues threatening the health of human beings are innumerable but air pollution poses one of the most serious threats. Epidemiology studies from time to time show that exposure to air pollutants results in millions of deaths annually particularly in under developed and developing countries. As childhood and infancy are periods of organ development, children are extremely vulnerable to poor air quality. Children living in metropolitan cities, where air quality index(AQI) is very poor, have been found suffering from various respiratory diseases. Origin of air pollutants are diverse such as industrial emissions, automobile exhaust, construction and agricultural activities, forest fires, eruption of volcanoes and many more. Childhood respiratory diseases caused due to air pollutants include pneumonia, asthma and acute respiratory distress. The present work aims to study the impact of short term and long term exposure of children of different ages to polluted air. The results will provide information on hazardous effects of air pollutants on children and the need to escalate actions to improve air quality.

Effects of Agonists And Antagonists Drugs on Bidirectional Movement of Melanophores In An Isolated Scale of Teleost Fish

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Aquatic organisms are exposed to highly variable with different drugs as well as in light environments, which can be affected the efficiency of colour patterns that are used for communication or camouflage.Similarly fishes can change their body colour according to their surroundings. They do so by either aggregation or dispersion of melanosomes within the melanophores present in fish skin because of bidirectional movement of melanophores. The scales from dorso-lateral trunk of the fish represented the sympathetic–neuro melanophore preparations which were stimulated by chemical means, such as adrenergic agonist such as adrenaline, antagonist and the microtubule-disrupting drugs such as yohumbine, colchicine etc.

Adrenaline is an adrenergic agonist which is strongly induced thedorso-dependent concentration of pigment in innervated melanophores while Yohimbine is an adrenergic antagonist which is known to block effectively the α_2-adrenoceptors inhibited the action of adrenaline. Colchicine effectively interferes with melanosome aggregating action of adrenaline. From these results it is concluded that the chromatic fibres of adrenergic nature innervate the melanophores and these cells do possess α_2-adrenoceptors which mediate the melanosome aggregation and the movements of pigment granules through microtubules means of transport within the cell. These movements of pigment are linked to paling or darkening achieved of teleost fish respectively when they approach to their background and show camouflage.

Assessment for the Growth and The Survival of Medicinal Plants: A Decision Making Technique

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Since the inception of life, many diseases were cured by the use of herbs and plants. The benefits of these plants have been acknowledged by the scientific community, but the biggest irony is that these plants are notavailable everywhere and its properties vary from region to region. Due to which, selection of suitable places for the cultivation of these medicinal plants has been dependent on various factors. Therefore, it is essential to have adequate knowledge of all those possible factors affecting growth and the survival of these medicinal plants, but as an individual, it is difficult togather information about the cultivation of such medicinal plants. India has been recognized as the wealthy repositoryof medicinal plants grown across various regions of the country, but the budding generation lacks in knowing thecharacteristics of such plants in use. In this talk, commonly available plants grown in the vicinity of rural areas namely as, Emblicaofficinalis (Amla), Withaniasomnifera (Aswagandha), Aeglemarmelos (Bael/Bilva), Bacopamonnieri (Brahmi), Piper longum(pippali), Eclipta alba (vringraj), Ocimumtenuiflorum (Tulsi),etc. have medicinal values and used in the treatment of many ailments. But These plants cannot be grown anywhere and the growth of such plants mainly depends on certain factors like atmospheric, humidity, altitude, rainfall, soil, light, temperature,seed etc. If we sow these plants in any place without knowing the possibility of its growth in that area, it may lose its actual medicinal properties. A mathematical technique that helps the individual to grow a suitable medicinal plant for their place has been proposed. Intuitionistic fuzzy based methodology has been used for the selection of particular type of medicinal plant.

Preserving Bangladesh's Environmental Heritage through Community Engagement: The Role of Public Libraries

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This research paper investigates the potential role of public libraries in preserving Bangladesh's environmental heritage through community engagement. The paper begins with a background on Bangladesh's environmental heritage and the need for its preservation in the face of various environmental challenges. The purpose of the study is to explore the current practices of public libraries in promoting environmental conservation and heritage preservation and to identify opportunities for better engagement with communities. The literature review covers the importance of Bangladesh's environmental heritage, previous studies on environmental conservation and heritage preservation in Bangladesh, and the potential role of public libraries in promoting environmental conservation and heritage preservation. The results of the study indicate that public libraries in Bangladesh are aware of the importance of environmental conservation and heritage preservation, but face several challenges in effectively engaging with communities. These challenges include a lack of resources and funding, limited community outreach, and inadequate training of library staff on environmental issues. The discussion section interprets the findings in light of the research questions and the literature review, and offers recommendations for public libraries to better engage with communities in preserving Bangladesh's environmental heritage. These recommendations include improving community outreach and engagement, enhancing the training of library staff on environmental issues, and promoting collaborative efforts with other stakeholders. The conclusion summarizes the main findings of the study and highlights the potential of public libraries to play a significant role in preserving Bangladesh's environmental heritage through community engagement. The limitations of the study and suggestions for future research are also discussed. Overall, this research paper contributes to the understanding of the potential role of public libraries in promoting environmental conservation and heritage preservation in Bangladesh.

जीवन के भारतीय प्रतिमान और सतत विकास

प्रोफेसर गीताराम शर्मा

संस्कृत, राजकीय कन्या महाविद्यालय, धौलपुर, राजस्थान, भारत

आज विकास के नाम पर दुनिया में एक दूसरे को रोंदकर आगे निकलने की वितृष्णा और प्रतिस्पर्धी अहंकार ने विकास के नाम पर जीवन के सहज प्रवाह के लिए अत्यन्त विषाक्त और भयावह वातावरण निर्मित किया जा रहा है परिणामतः भय, उद्वेग, उन्माद, तनाव, आतंक, अहंकार, सन्ताप, सन्त्रास, ईर्ष्या, वैमनस्य, कुण्ठा, विचलन, जीवन मूल्य वैमुख्य तथा नैतिक पतन के कारण मानवीय जीवन गहरे संकट में है। भारत भी इस तथाकथित विकास की वेदनाओं से अछूता नहीं है जिनका मुक्तिपथ सतत्वि का सयाधारण क्षम विकास बोध और व्यवहार से ही सम्भव है| पश्चिम के विकास प्रतिमान इस विचार में गहरी आस्था रखते हैं कि "सबल ही अस्तित्व बनाए रख सकेगा", इसलिए अशक्त को तो नष्ट होना ही है इसलिए येन केन प्रकार आर्थिक सम्पन्नता अस्तित्व संरक्षण के लिए परम साध्य है, उसके नैतिक या अनैतिक होने का कोई मूल्य नहीं| सबल होने के लिए संघर्ष और प्रतियोगिता ही आधार है, इसलिए अधिकतम लाभ और न्यूनतम हानि का सिद्धान्त पश्चिमी विकास प्रतिमानों को प्रेरित करता है| तदनुसार प्रकृति भोग्या है, मनुष्य उसका भोक्ता है इसलिए शोषण की पराकाष्ठा तक अनेक प्रकार की वैज्ञानिक विधियों द्वारा प्रकृति के अधिकतम निर्मम दोहन के लिए प्रोत्साहन है| सतत विकास या धारण क्षम विकास भारतीय जीवन मूल्यों के प्रकाश में अपने देश, समाज की प्रकृति, प्रवृति, आशा, आकांक्षा, आवश्यकता और सामाजिक आर्थिक परिस्थिति के सन्दर्भ में मुख्यतः अपने ही शक्ति सामर्थ्य, साधन सम्पदाओं एवं कौशल प्रतिभाओं के बलबूते पर देश की कर्मशक्ति व ऊर्जा शक्ति के जागरण के माध्यम से सर्वमंगलकारी, समतामूलक एवं सर्वतोमुखी विकास दर्शन है। यह भारतीय मनीषा की समग्रतापूर्ण उस जीवन दृष्टिं से अभिप्रेरित है जो सम्पूर्ण चराचर जीवजगत को एकात्म मानती है| एकात्म दर्शन के अनुसार ब्रह्माण्ड में व्यक्ताव्यक्त समस्त मानव, प्रकृति, पर्यावरण, पारिस्थितिकी तन्त्र परस्पर अन्तःस्यूत और परस्परा पेक्षी हैं। इसलिए हमें विकास की सम्पूर्ण संरचना, आर्थिक नीतियाँ तथा तकनीकी तन्त्र इस तरह विकसित करना होगा किसी मित साधनों का मितव्यता पूर्ण प्रयोग करते हुए समग्र विकास हो सके, तथा पूरे प्रकृति को जननि के रुप में देखने की भारतीय ऋषियों की दृष्टि का अभिनन्दन हो सके |

भारत में जैव विविधता सरंक्षण में किये गए उपायों की प्रभावशीलता का मूल्यांकन

ज्योति

शोध छात्रा, शिक्षा संकाय, दयालबाग एजुकेशनल इंस्टीट्यूट, आगरा, उत्तर प्रदेश, भारत

जैवविविधता से तात्पर्य जीवों की विविधता और पर्यावरण तथा उनके बीच की अन्तःक्रियाओं से निर्मित क्षेत्र से है जैव विविधता में भारत की हिस्सेदारी 7 प्रतिशत से अधिक होने के साथ यह विविध प्रकार की वनस्पतियों और जीवों का स्थल है

जैवविविधता सरंक्षण का महत्व- पारिस्थितिकी लाभ, सांस्कृतिक लाभ, आर्थिक लाभ, के क्षेत्र में सरकार द्वारा जैव विविधता के लिए किये गए उपाय, सरंक्षित क्षेत्र, वन्य जीव सरंक्षण, अंतर्राष्ट्रीय समझौते भारत जैव विविधता पर सम्मेलन और पैरिस समझौते जैसे अंतर्राष्ट्रीय समझोतों पर हस्ताक्षर करती हैं। जिसका उद्देश्य जैव विविधता की रक्षा करना और जलवायु परिवर्तन का समाधान करना है।

उपायों की प्रभावशीलता

सरंक्षित क्षेत्र- इन क्षेत्रों ने वाघों, हाथियों, लुप्त प्रजातियों को बचाने में मदद की है।

वन्यजीव सरंक्षण- यह अधिनियम अवैध शिकार और तस्करी जैसे वन्यजीव अपराधों को कम करने में प्रभावी रहा है

अंतर्राष्ट्रीय समझौते- इन समझौतों में भारत की भागीदारी से जैवविविधता सरंक्षण के बारे में जागरुकता बढ़ाने में मदद मिली

निष्कर्ष- हालांकि ये उपाय कुछ मायनों में प्रभावी रहे है फिर भी मानव वन्यजीवसंघर्ष अवैध शिकार और इनके आवास स्थल का नुकसान होने जैसी चुनौतियां अभी भी मौजूद है इन चुनौतियों का समाधान करने के साथ प्राकृतिक संसाधनों के सतत उपयोग की दिशा में कार्य करना महत्वपूर्ण है।

हिन्दी साहित्य के उत्तर मध्यकाल में प्रकृति चित्रण
(बिहारी के विशेष सन्दर्भ में)

डॉ. लड्डू लाल मीना
सह आचार्य, हिन्दी, राजकीय कला महाविद्यालय, कोटा, राजस्थान, भारत

हिन्दी साहित्य के इतिहास में उत्तर मध्यकाल सं. 1700 से 1900 वि. तक की काव्य रचना के रीतिकाल, श्रृंगारकाल, कलाकाल, अलंकृतकाल आदि नामकरण हुए हैं, इनके मूल में काव्य लक्षण तथा विशेषताएँ रहीं। हिन्दी के सम्पूर्ण साहित्य इतिहास का अवलोकन करें तो सभी कालखण्डों की सृजक संवेदनाओं में प्रकृति चित्रण की व्याप्ति रही, कहीं-कहीं तो इसे स्वतंत्र और विस्तृत आयाम मिला है। प्रकृति चित्रण की दृष्टि से हिन्दी की उत्तर मध्यकालीन श्रृंगार रस प्रधान रीति काव्यधारा भी अछूती नहीं है। रीतिबद्ध आचार्य कवि केशवदास ने अपने काव्य में 'फूली लतिका ललित, तरुनितर फूले तरुवर। फूली सरिता सुभग, सरस फूल सब सरवर' जैसे अनेक प्रकृति चित्र उकेरे हैं। रीतिकालीन रचनाओं में भी प्रकृति का आलम्बन, उद्दीपन आदि रूपों में निरूपण हुआ है, देव के काव्य में 'आई रितु पावस, न आए प्रान-प्यारे यातें-, मेघन बरजि आली ! गरजिन लावै ना। विरह विथा ते हौं तो व्याकुल भइ हों देव, चपला चमकि चित-चिनगी उड़ावैं ना।' में पावस ऋतु उद्दीपक रूप में चित्रित हुई है।

उत्तर मध्यकाल के रीतिमुक्त कवि घनानंद के काव्य में भी प्रकृति का उद्दीपक रूप ही देखने को मिलता है। यथा- 'कारी कूर कोकिला। कहाँ कौ बेर काढ़ति री, कूकि कूकि अबही करे जो किन कोरि लै।' इस समय की रचनाओं में बिहारी सतसई के दोहों में प्रकृति आलम्बन उद्दीपन रूप में तो चित्रित हुई ही है लेकिन उसका मानवीकरण रूप चित्रण भी देखने को मिलता है। भक्ति, नीति और श्रृंगार की त्रिवेणी कही जाने वाली सतसई के 'घाम घरीक निवारिये, कलित ललित अलि-पुंज, जमुना-तीर तमाल- तरु-मिलित मालती कुंज', 'कहलाने एकत बसत, आहि-मयूर मृग-बाघ' अथवा 'सघन कुंज, घन घन-तिमिरु, अधिक अंधेरी राति', जैसी पंक्तियों द्वारा बिहारी का प्रकृति चित्रण कौशल्य देखा जा सकता है। इनकी सतसई के दोहों में बसंत, ग्रीष्म, वर्षा, शरद आदि ऋतुओं की उपस्थिति रही है। उनके 'चुवत स्वेद मकरन्द कन, तरु तरु तर बिरमाय' मे बसंत ऋतु में फूलों के रस पर मंडराते भंवरों का चित्रांकन हुआ है। तात्पर्य है कि बिहारी सतसई के अन्तर्गत प्रकृति निरूपण में कवि की कल्पना शक्ति, रचना कौशल तथा सरस अर्थ गांभीर्य विशिष्टता लिए हैं।

प्रवासी पक्षी कुरजां के संरक्षण में विद्युत लाइनों के स्थानांतरण को लेकर पत्रकारिता का प्रभाव: एक अध्ययन
(कुरजां पक्षियों के शीतकालीन प्रवास स्थल खीचन गांव के विशेष सन्दर्भ में)

महेश कुमार सोनी
शोधार्थी, पत्रकारिता एवं जनसंचार विभाग, जयनारायण व्यास विश्वविद्यालय, जोधपुर, राजस्थान, भारत

प्रायः पत्रकारिता नवीन सूचनाओं व घटनाओं को सरल व आकर्षक रूप में प्रस्तुत करते हुए लोगों को सूचना देने, शिक्षित करने व मनोरंजन का कार्य करता है। इसके साथ ही जनता से जुड़ी बड़ी समस्याओं को सरकार के समक्ष प्रस्तुत कर उनका समाधान भी करवाने में पत्रकारिता की महत्वपूर्ण भूमिका रहती है। वर्तमान में समय में पत्रकारिता एक व्यवसाय के रूप में हमारे बीच में उपस्थित है, लेकिन पत्रकारिता समाज और पर्यावरण की सेवा भी करता है। पत्रकारिता का यही सेवा भाव पशु-पक्षियों के संरक्षण व संवर्धन में भी उसी तरह प्रदर्शित होता है, जैसे आमजन के साथ।

आए दिन समाचार पत्र-पत्रिकाओं, टी.वी. आदि में वन्यजीवों के संरक्षण को लेकर समाचार प्रकाशित व प्रसारित होते है। जिसमें वन्यजीवों के संरक्षण में आ रही समस्याओं को संबंधित विभागों के अधिकारियों तक मामले को पहुंचाया जाता है तथा उनका समाधान भी होता है। राजस्थान के जोधपुर जिले का खीचन गांव चीन, कजाकिस्तान, मंगोलिया, साइबेरिया से प्रतिवर्ष शीतकालीन प्रवास पर आने वाले मेहमान पक्षी कुरजां का पड़ाव स्थल है। खीचन गांव में प्रवासी पक्षी कुरजां के संरक्षण में पिछले करीब 25 वर्षों से पत्रकारिता हो रही है। पत्रकारिता के माध्यम से यहां पक्षियों के संरक्षण में सरकार व संबंधित विभागों द्वारा कई कदम उठाए गए है। खीचन गांव में प्रतिवर्ष शीतकालीन प्रवास के दौरान विद्युत लाइनों से टकराने के कारण कुरजां पक्षियों की मौत एक बड़ा मुद्दा रहा है। प्रस्तुत शोध में प्रवासी पक्षी कुरजां के पड़ाव स्थल खीचन गांव में विद्युत लाइनों के स्थानांतरण में पत्रकारिता एवं उसके प्रभाव का अध्ययन किया जाएगा।

व्यवहारिक जीवन में योग का महत्त्व

डॉ. नीतू तिवारी

असिस्टेन्ट प्रोफेसर, मनोविज्ञान, कमला शिक्षक प्रशिक्षण महाविद्यालय, धौलपुर, राजस्थान, भारत

योग शब्द संस्कृत व्याकरण के 'युज' धातु से बना है। जिसका अर्थ है जुड़ना। जुडना एक ऐसी विद्या से जिससे की मनुष्य जीवन का सर्वागीण विकास हो, तथा वह ब्रहम विद्या की प्राप्ति या समाधि की प्राप्ति के लिए अग्रसारित हो सके। योग को महर्षि पतंजलि ने परिभाषित किया है। चित्त वृत्ति निरोध के रुप में चित्त वृत्ति के सर्वथा अभाव की स्थिति ही कैवल्य की स्थिति है। वेदो में पुराणों में योग की महिमा का गुणगान किया है। वही श्रीकृष्ण ने श्रीमद्भागवद्गीता में कर्मो की कुशलता के रुप में परिभाषित किया है। इस प्रकार यह योग विद्या प्राचीन ग्रन्थो में महत्वपूर्ण अंग माना गया है।

विज्ञान एवं अध्यात्म का समन्वय आज की सर्वोपरि आवश्यकता

डॉ. प्रभा शर्मा एवं डॉ. हरीश गौतम

1. सहआचार्यभूगोल, राजकीय कलामहाविद्यालय, कोटा, राजस्थान, भारत
2. आचार्यप्राणीशास्त्र, राजकीय महाविद्यालय, कोटा, राजस्थान, भारत

स्वामी विवेकानन्द ने मद्रास में दिए गए एक व्याख्यान में घोषणा की थीकि "मनुष्य काभविष्य उसके सही अर्थों में वैज्ञानिक और सच्चे आध्यात्मिक होने पर अवलम्बित है।" अध्यात्म और विज्ञान दोनों का एक ही लक्ष्य है-सत्य की खोज।दोनों क्षेत्रों के अनुभवों का समन्वय ही हमें पूर्ण सत्य के निकट पहुंचा सकता है। इस विश्व ब्रह्माण्ड में दो शक्ति-सत्ताए आच्छादित है। एक जड़ (पदार्थ) दूसरी चेतन। जड़ व चेतन के युग्म को ही विज्ञान व आध्यात्म की संज्ञा दी जाती है। पदार्थ का प्रतिनिधित्व विज्ञान करता है और चेतना का आध्यात्म। आंतरिक अनुभूति द्वारा प्राप्त सत्य मेटाफिजिक्स या आध्यात्म कहलाता है तो बाह्य अनुभवों से तर्क बुद्धि द्वारा प्राप्त ज्ञान फिजिकल साइन्स या भौतिक विज्ञान। संसार का सबसे पहला ग्रंथ ऋगवेद बताता है कि "एकसद्विप्राबहुधावदन्ति" अर्थात सत्य एक ही है ज्ञानी उसे विविध नामों से पुकारते है। अनेकतामें एकता के वैदान्तिक प्रतिपादन का विज्ञान के साथ पूरा तालमेल बैठता है। 'ब्रह्माण्ड का विकास उसी मूल तत्व से हुआ है जिसे वैज्ञानिक भाषा में कॉस्मिक धूल या God Partical और वेदान्त की भाषा में चिदाकाश कहा गया है।

वस्तुतः धर्म व विज्ञान एक दूसरे के पूरक है। विख्यात वैज्ञानिक आइन्स्टीन ने कहा था कि 'धर्म के बिना विज्ञान अंधा है और विज्ञान के बिना धर्म लंगडा। अतः दोनों के बीच पारस्परिक संतुलन और जीवन में उनके धारण से ही हमारी प्रगति संभव है। विज्ञान हमें गति दे तो धर्म दिशा दिखाये।

हिन्दी लोक साहित्य में पक्षियों के संदर्भ में पर्यावरणशास्त्रीय पर्यालोचन

राकेश रामावत

शोधछात्र, हिन्दी विभाग, ज. ना. व्यास विश्वविद्यालय, जोधपुर, राजस्थान, भारत

आदिकाल से मानव सभ्यता एवं संस्कृति के विकासक्रम में पक्षियों के प्रति मानव की अगाध जिज्ञासा बनी रही है। हिन्दी लोकसाहित्य में विभिन्न लोकगीतों, कहावतों, मुहावरों, पहेलियों, लोककथाओं आदि में पक्षियों के बारे में प्रचुर संदर्भ मिलते है।

जहां अनेक पक्षी धार्मिक दृष्टि से महत्वपूर्ण है, वहीं मिश्रित कृशिक्षेत्र में आजकल पक्षीपालन को भी समग्र आय के एक घटक के रूप में अपनाया जा रहा है। आर्थिक दृष्टिकोण से देखें तो कुछ लोग पक्षियों को फसलनाशी के रूप में मानते है परंतु विगत कुछ दशकों में हर्बल कीटनाशकों के साथ कुछ पक्षी-प्रजातियों को 'बायो-कण्ट्रोलर' के रूप में काम लिया जाने लगा है।

प्राचीन तंत्र-मंत्र विज्ञान में भी पक्षियों के उल्लेख है तो आयुर्वेदशास्त्रों में भी पंखों, बींट आदि की औषधियों का वर्णन मिलता है। हिन्दी लोकसाहित्य में पक्षियों के ऐसे अनेक संदर्भ मिलते है जिन पर वर्तमान में पर्यावरणशास्त्रीय दृष्टि से विवेचन किया जा सकता है। चील, गिद्ध, कौए आदि तो मृतजीवों के जैव अपघटन के द्वारा पर्यावरण शुद्धिकरण में सर्वाधिक उपयोगी है। परागण-प्रक्रिया एवं प्राकृतिक वन विस्तार में भी सभी पक्षियों की महती आवश्यकता अनुभव की जाने लगी है।

भारतीय समाज और योग का पुनर्जागरण

विधि वर्मा

शोध छात्रा, समाजशास्त्र विभाग, आगरा कालेज, आगरा, उत्तर प्रदेश, भारत

वर्तमान समय में आधुनिकता की दौड़ में समाज जहां विकास की ओर बढ़ रहा है वहीं वह अपनी प्रकृति से ही दूर होता जा रहा है।हमारे प्राचीन वेदऋग्वदे , सामवेद, यजुर्वेद एवं अथर्ववेद में पर्यावरण के महत्व को दर्शाया गया है। पतंजलि का अष्टांग योग के दोसूत्र यम और नियम यदि जीवन में धारण करें तो विलक्षण परिवर्तन प्राप्त हो सकताहै। भगवतगीता में भी कहा गया है 'योगसमत्वउच्यते' योगसंतुलन की स्थिति है। आयुर्वेद सिखाता है कि हवा, पानी और मिट्टी को बचाना है ताकि स्वास्थ्य संबंधी संकटों से बचा जा सके। हम अपनी परंपराओं और संस्कृतियों को भूल गए हैं परंतु आज के भौतिकवादी युग में हमारी वैदिक परपंराओं का पुनर्जागरण आवश्यक है। हल्दी शरीर पर लगाना और पानी में छिड़कना आदि धर्म से जोड़ा जाता है, यह एंटीबायोटिक है। घर के बाहर गोबर से लीपना, जिससे बैक्टीरिया घर के अंदर ना आएं, परंतु रंगोली के लिए स्टिकर लगाए जाते हैं। यह छोटी-छोटी चीजें जो हमारे प्रकृति से जुड़ी हैं, उनसे दूर होतै जा रहे हैं। सात्विक आहार, व्यायाम, योग, भारत की ही देन हैं परंतु आज व्यक्ति योग की जगह जिम जा रहे हैं जहां ना मानसिक शांति है ना संतुष्टि। योग मनुष्य को शारीरिक, मानसिक रूप से स्वस्थबनाताहैऔर एक स्वस्थव्यक्ति की ही स्वस्थ समाज का निर्माण करता है, जो व्यक्ति को प्रकृति के करीब लाता है। आधुनिक जीवन शैली से मन-शरीर के संबंधो में सामंजस्य न होने से हृदय संबंधी रोग, कैंसर जैसी कई बीमारियां हो रही है। योग भारतीय परंपरा तथा सभ्यता की पहचान है और आज वैश्विकं स्तर पर भी अपनी पहचान बनाने में सफल रही है। औद्योगिकीकरण के दौर में भारतीय समाज पर्यावरण संरक्षण तथा प्राकृतिक पुनर्जागरण की दिशा में कदम बढ़ा रहा है।

योग और आधुनिक उपकरणों का जीवन शैली से सम्बन्ध

विष्णु श्रोतीय

कमला शिक्षक प्रशिक्षण महाविद्यालय, धौलपुर, राजस्थान, भारत

आधुनिक जीवन शैली ने मन-शरीर के संबंधों में सामजंस्य खो दिया है जिससे उच्च रक्तचाप, कोरोनरी हृदय रोग और कैंसर जैसी कई तनाव-आधारित बीमारियां हो गई हैं। इन बीमारियों को रोकने और उनका इलाज करने के प्रयास ने बेहतर जीवन शैली और बेहतर रणनीतियों की खोज को गति दी, जो कि योग जैसे प्राचीन विषयों की पनुर्खोज में परिवर्तित हो गए, जीवन शैली को स्थायी मानसिक शांति के लिए शक्तिशाली अचकू नुस्खे के साथ जोड़ना जैसा कि नैदानिक अध्ययनों द्वारा पुष्टि की गई है।योग आधुनिक जीवन जीने का, सही जीवन जीने का विज्ञान है और इसे हमारे दैनिक जीवन में शामिल किया जाना चाहिए। योग में दिमाग को शांत करने, लचीलापन बनाए रखने, शारीरिक और मानसिक ऊर्जा का दोहन करने और एक एकीकृत व्यक्तित्व विकसित करने में मदद करने के लिए तकनीकी प्रणालियां हैं। यह भावनाओं को संतुलित करने और मन और शरीर के बीच सामंजस्य स्थापित करने का एक तरीका है।