

Theoretical Perspective on Ageing Process



Usha. S

Research Scholar,
Deptt. of Economics,
Annamalai University,
Annamalai Nagar, Tamil Nadu
India



Sudha. T

Assistant Professor,
Deptt. of Economics,
Annamalai University,
Annamalai Nagar, Tamil Nadu
India

Abstract

Ageing is a multidimensional phenomenon researches have been focusing on the concept of ageing, problems of ageing, health status of ageing, living conditions of aged people etc. But the researches on ageing women and their health conditions along with living environment is scanty. Theoretical background is essential for every research which is an opener for objectives and hypothesis. This paper evaluates various theories on ageing in general and ageing women in particular. Biological and sociological aspects are to be studied to understand the problems of ageing as well.

Keywords: Ageing, Deoxyribonucleic Acid, Ribonucleic Acid, Environmental Pollutants, Morbidity, Mortality, Cross-Link, Molecular, Programme, Immunity, Disengagement, Continuity, Stratification Etc.

Introduction

To define the term 'ageing' in a single definition is not possible it is defined in various definitions in various countries. The dictionary of oxford advance learners has trend the word 'ageing' as the process of growing old or change that occur with passing of time. People that are aged 60 years are conducted as elderly in the united nations whereas in USA, 65 years and above is taken as threshold old age people of 60 years of age is conducted as old age India.

Review of Literature

Women in general and aged women in particular are under- cared in all parts of the world. The living conditions of aged women differ from developed countries to developing countries. India is a one of the developing nations, is having higher proportion of aged women, Tamil Nadu one of the developed states in India has been taking effective steps to rectify the problems of women including aged women for the past couple of decades.(Sudha 2018)

Jamwal (2016) conducted a study having quality of life, loneliness and psychological distress of the elderly males and females living in institutions and non-institutional settings in urban jammu district. The result revealed significant differences on loneliness and quality of life between those living in institutional setting and those living with their families.

Panday (2015) pointed out that carried out to assess the facilities available and the factors associated with elderly people for availing the residential services of old age homes. The most important reason for elderly people living in public OAHs was no care taking person at 77 percent and private OAGs it was 36.4 percent services medical services, recreational facilities, safety, space availability and staff availability were significantly better OAHs. Quality of life in private OAHs was significantly better than public OAHs.

Bevinamar (2012) pointed out that elderly is a major problem across the world, as the elderly population is growing due to increase in health facilities. Among the elderly people, elderly women are most vulnerable group of the society suffering from socio-economic and health problems of elders. The extents of problems of women are more if they are widow. The paper analyzed the statistics of the elderly population and discussed the problems faced by elderly women in India. It is found that there is no particular social welfare scheme available for betterment of health problem. Hence, the paper concluded with the remarks that there is need for health scheme for the elderly women.

Aim of the Study

The focal theme /aim of the study is to examine the past theories related to ageing process and identify the relevance theories for the research

Theoretical perspective can be grouped under two heads: (i) Biological aspects and (ii) Sociological aspects

1. Biological theory concerned with answering basic questions regarding physiologic processes that occur in all living organisms over time (Hayflick, 1996).
2. Sociological theory focused on the role and relationship within which individuals engage in the later life (Hogstel, 1995).

Biologic Theories of Ageing

When an organism age, there is physiological process that involves in them. There are quite a lot of concern with theories based on biology to answer questions posing on the process. With influence from external factors the change related to age differs in different organisms. Certain basic factor that influence in ageing process are addressed at primary level. The influences from the level of molecules, cell and other systems are typically viewed in the biological theories. Also, these theories do not act independently and so they are not exclusive but are combined in explaining a phenomena.

Stochastic Theories

Stochastic theories include Error theory, Free radical theory, Cross linkage theory, Wear and tear theory.

Error Theory

As cell ages, various changes occur naturally in its deoxyribonucleic acid (DNA) and ribonucleic acid (RNA), the building blocks of the cell DNA, found in the nucleus of the cell, contains the fundamental genetic code and forms the genes on all 46 human chromosomes (Black, Matassarini-Jacobs, 1997).

In 1963, Orgel proposed the error theory, sometimes called the error catastrophe theory. The hypothesis of this theory is based on the idea that errors can occur in the transcription in any step of protein synthesis of DNA, and this eventually leads to either the elder or the actual death of a cell. The error would cause the reproduction of an enzyme or protein that was not an exact copy of the original. The next transcription would again contain an error. As the effect continued through several generations of proteins, the end product would not even resemble the original cell and its functional ability would be diminished. (Sonneborn, 1979).

Free Radical Theory

Any metabolic activity in human body enables the production of free radical which are considered as by-products. These are certain external factors namely pesticides, radiation and ozone that inhibit the free radical production. These are then made inactive with the help of enzymes body or with antioxidants naturally. The non-neutralized or active free radicals gets itself attached to other molecules which gives negative reaction to the cell membranes of the affected molecules. Thus the recipient molecules or the cell membrane gets monopolized and their normal function gets affected highly. This condition is called as lipid peroxidation. When the amount of fluid increases or decreases, the internal

static condition is disturbed and the death of cell occurs.

It was Harman (1956) that pioneered in identifying the usage of certain chemicals that stops the free radicals to move which will ultimately increase the life time by prohibiting the cell death. This helps in delaying the ageing process. Research on animals are done which results in identifying that antioxidants improve the cell life and reduces diseases like cardiovascular diseases and Cancer. Improvement in immune system and reduction of neurological diseases were seen with the induction of antioxidants. This ultimately improves morbidity and mortality. (Hayflick, Yu, 1998, 1993)

Cross-Linkage Theory

It is said in the cross-linkage theory of ageing that the process of ageing occurs with the cross linking of proteins that age-some which gets increased and interferes in the process of metabolism by blocking nutrients movements and also blocks wastes to moving between the compartments of intracells and extracells. In a regular system, structures of molecules get separated but according to the theory, they get attracted towards each other by a chemical reaction and thus it evolves the production of long - chain macromolecule (that are inert in nature) by fibroblasts with is called as collagens.

Wear and Tear Theory

This Wear and Tear theory states that the cells get worn out over time and use and ultimately dies (weiman, 1882). According to Hayflick 1998) worn out tissues enable death as they are unable to rejuvenate on their own. The theory also enfold that cells are pre-programmed with life-time energy and when they get disrupted with stress, injury or trauma, their energy gets used up fastly and causes death. And death is the result of worn out tissue which are incapable of rejuvenating itself.

Non-Stochastic Theories

Non stochastic theories include programmed theory and Immunity theory.

Programmed Theory or Hayflick Limit Theory

Study was done by Hayflick and Moorehead in 1961 which experimental on dead fibroblastic cells and the abilities of them in reproduction. This study was a milestone to many scientists and showed that cells have functional changes which are the triggering factor for ageing of cells and organisms. This study also states that large amount of malfunctioning of cells and their loss is the major responsible factor for ageing phenomenon. The major study in 1961 found that freezing stops the cells to age by affecting the biological clock.

The study of Carrel and Ebeling were contradicted by their study proposed that no wear and tear occurs with cells but their function is normal in all time.

Immunity Theory

The immune system is a network of specialized cells, tissues, and organs that provide the body with protection against invading organisms. Its primary role is to differentiateself from non-self, thereby protecting the organism from attack by

pathogens. It has been found that as a person ages, the immune system functions less effectively. The term immunosenescence has been given to this age-related decrease in function. Essential components of the immune system are T cells, which are responsible for cell-mediated immunity, and B cells, the antibodies responsible for humoral immunity. Both T and B cells may respond to an invasion of the organism, though one may provide more protection in certain situations. The changes that occur with aging are most apparent in the T-lymphocytes, although changes also occur in the functioning capabilities of B-lymphocytes. Accompanying these changes is a decrease in the body's defense against foreign pathogens, which manifests itself as an increased incidence of infectious diseases and an increase in the production of auto antibodies, which lead to a propensity to develop autoimmune-related diseases (Hayflick, 1996).

Though both B and T cells help in protecting the immune system against foreign particles, the ageing process related changes are high up protected by T-cells. And B-cells also get affected functionally. These changes in both T and B-cells decrease their ability to protect against pathogens that are foreign to the body. This increase in infectious disease marks the body to curate auto-antibodies. The increase in production of auto-antibodies leads to auto-immune disease.

Sociologic Theories of Aging

Sociological theories of ageing are influenced by global societal & structural factors. The roles and responsibilities of ageing persons determine the values that they develop in the society. How elderly people adjust with the environment is also an important aspect in sociological theories.

Disengagement Theory

Elders are being neglected by the society and family members younger may not allow them to involve themselves in taking decisions and the society may not allow them to take leadership position in any organization (Atchley, 1983). The society and family expect them to withdraw themselves from values such as competition, efficiency and individual achievement.

Elders may themselves voluntarily disengage in activities which they performed in younger years as they thought they are losing energy when they get old. (Cumming and Henry, 1961)

Activity Theory

The old age will be happy, if they are more active at their old age. Happiness of the old age depends upon the active role of them. So elder people must engage themselves in activities as per their physical conditions. Their involvement in activities provides them happiness and satisfaction and they are able to adjust with changing life events (Havighurst et al, Maddox 1968)

Continuity Theory

People's personalities at old age depend upon their behavior at younger age. Elder people will behave in the same manner as per their behavior in the past life. People's behavior will not change even at old age.

If they did or involved themselves in less activities, they would be the same in old age (Neugarten et al. 1961)

Whereas Blau (1981) confirmed that the role of senior citizens is more complex than that of earlier roles they had (worker or mother). People have freedom at old age and they will perform more duties than their past life. Society many expect more from old age people and as per society's expectations elder people will behave and lead their life.

Age Stratification Theory

Though it may seem obvious now, with our awareness of ageism, age stratification theorists were the first to suggest that members of society might be stratified by age, just as they are stratified by race, class, and gender. The value of a person (i.e., their status or prestige in society) is determined by their age, an ascribed rather than an achieved characteristic. Because age serves as a basis of social control, different age groups have varying access to social resources such as political and economic power. In this model, the privileges, independence, and access to social resources of seniors decrease based simply on their position within an age-category hierarchy. The elderly experience an increased dependence as they age and must increasingly submit to the will of others because they have fewer ways of compelling others to submit to them. Moreover, within societies stratified by age, behavioural age norms, including norms about roles and appropriate behaviour, dictate what members of age cohorts may reasonably do. For example, it might be considered deviant for an elderly woman to wear a bikini because it violates norms denying the sexuality of older females. These norms are specific to each age strata, developing from culturally based ideas about how people should "act their age" (Riley, Johnson, and Foner 1972).

Person-Environment Fit Theory

The world is changing day by day. Elders should compete with the environment while it is also changing. Lawton examined the concept of inter relationship among the competencies of a group of persons. The group include adults, society and environment. The elders have to adjust with society and environment which will provide a peaceful life to them.

Modernization Theory

The world is moving towards modernization. The higher the degree of modernization, the lesser the value of elders. Modernization is the combination of urbanization and industrialization. A few decades ago, the number of elders in the society and they also had land and their life was with agricultural activities. But due to modernization there is a shift from agriculture to industrialization and the numbers of elders is more. But their status is considered to be low (Cowgill & Homes 1972, Palmore Manton 1974) also examined the status of elders in the society and reported that due to less of cultural values, the elders have little respect in the society.

Social Reconstruction Syndrome Theory

This theory was from the social breakdown syndrome which was conceptualized by Zusman

(1966), He indicated that social breakdown occurs for the elderly because of the effects of labeling. The process occurs as follows: society has unrealistic standards or expectations that all adults should work and be productive; other people label the elderly as being incompetent or lacking in some ways; the elderly accept the label and view themselves in terms of the label; they then learn behavior consistent with the label and downplay their previous skills. As result, they become more dependent, incompetent, and feel inadequate.

Kuypers and Bengston recommend the social reconstruction syndrome to break the negative interaction with elder people and they advised that the elders should be free from unrealistic standards and expectations. They should be provide with social services as per their need. Moreover, the elders should have power to control their lives as well.

The value of our society rest upon a work ethic-an ethic of doing-that gives highest value to people in the prime of their productive years. We should encourage plurality of ethics in its in place-not merely an ethic of doing, but also an ethic of feeling, an ethic of sharing, an ethic of knowing, and an ethic of enduring and even an ethic of surviving.

The second recommendation of Kuypers and Bengston (1973) is to provide the elderly with the social services they need. Such services include transportation, medical care, housing, help with housekeeping, and programs that provide physical and mental activity.

The third recommendation is to find creative way to give the elderly more control over their lives. He recommends that at nursing homes the decision-making bodies should be "exclusively comprised of the elderly themselves. While the nursing and social service staff, for example might be younger people, they are servants of the elderly board of directors, the

elderly committee structure and the elderly administrators.

Role Theory

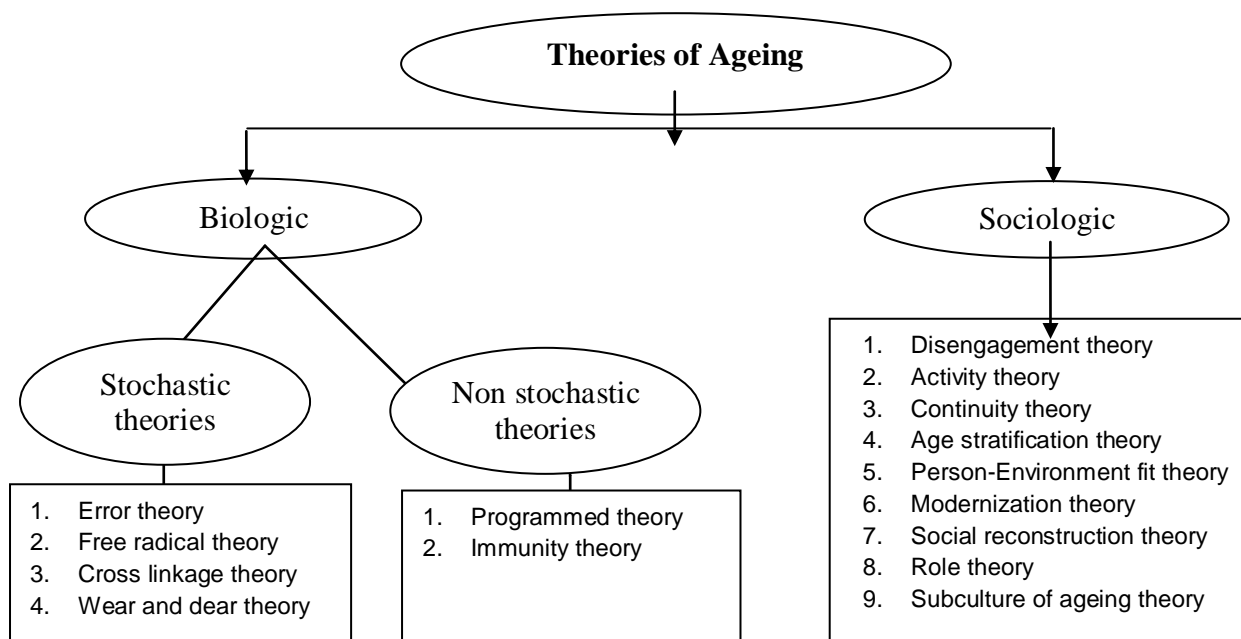
Role is one of the behavioural concepts and it is interlinked with status which reflects social position. It is orient towards the patterned expectations of others. Each one has multiple roles/status caring elder is one of the youngsters. If they have higher roles, they will adjust with others at oldage as well. Role theory emphasizes that the human beings must have higher member of roles which will help than to lead better life in future.

There are four main role changes that must be dealt with by the elderly. Each requires realignment of some kind. First, the work role that may have been the major object of activity and attention throughout the course of one's life is lost. The loss of gainful employment affects both marital partners, who usually must adapt to a changed domestic situation (Streib, 1977).

Subculture of Aging Theory

One micro analytical theory is Rose's (1962) focuses on the shared community created by the elderly when they are excluded (due to age), voluntarily or involuntarily, from participating in other groups. This theory suggests that elders will disengage from society and develop new patterns of interaction with peers who share common backgrounds and interests. For example, a group consciousness may develop within such groups as CARP around issues specific to the elderly including health care, retirement security, continuing care, and elder abuse focused on creating social and political pressure to fix those issues. Whether brought together by social or political interests, or even geographic regions, elders may find a strong sense of community with their new group.

The following flow chart depicts the theoretical framerwork of ageing process



Source: Researcher

Conclusion

This paper examines the theories on ageing with reference to biological and sociological aspects. Stochastic and non-stochastic theories of biological aspects emphasis on health problems of elderly women. Sociological theories throw light on exclusion of aged women from the family and society. However these two aspects predominantly play an important role in the research on ageing economics.

References

- Baltes PB: *Life-span development and behavior*; Vol7, 1987, Lawrence Erlbaum.
- Baltes, Paul and Margret Baltes, eds. (1990). *Successful Aging: Perspectives from The Behavioral Sciences*. New York: Press Syndicate of the University of Cambridge.
- Cowgill, D.O. and L.D. Holmes, eds. (1972). *Aging and Modernization*. New York: Appleton-Century-Crofts.
- Cumming, Elaine and William Earl Henry.(1961). *Growing Old*. New York: Basic.
- Dowd, James J. 1975. "Aging as Exchange: A Preface to Theory." *Journal of Gerontology* 30:584-594.
- Havinghurst, R.J. (1961). "Successful Aging." *The Gerontologist* 1:8-13.
- Havinghurst, Robert, Bernice Neugarten, and Sheldon Tobin.(1968). "Patterns of Aging."Pp. 161-172 in *Middle Age and Aging*, edited by B. Neugarten. Chicago, IL: University of Chicago Press.
- <http://www.nhrc.nic.in/Documents/Publications/KYR%20Elderly%20English%20Final.pdf>

<http://www.un.org/en/ga/search/viewdoc.asp?symbol=A/RES/45/106>

- Jamwal N. *Psychosocial Consequences among Elderly Living In Institutional and Non-Institutional Settings*. *Int J Indian Psychol* 2016; 4(83) : 25.
- Maslow A: *Motivation and personality*, New York, (1954), Harper & Row.
- Nasreen (2010), *Family in Transition and Challenges for Elderly Person* Department of Social Work & Jamia Islamia New Delhi, Vol. 24, Issue.4, pp.501-508.
- Panigrahi, Akshaya Kumar (2009), "Determinants of Living Arrangement of Elderly in Oriss: An Analysis "The Institute for Social and Economic Change, Bangalore.
- Panday R. A. *Gender Based Study on Quality of Life Among Elderly People*. *Int J Res Soc Sci* 2016; 6(8) : 50-7.
- Rajagopal.V(2017). *Old age homes as a fact of life*, 20 August, *The Hindu*.
- Rose, Arnold. (1962). "The Subculture of the Aging: A Topic for Sociological Research." *The Gerontologist* 2:123-127.
- Sasireka.V (2013). *Conference: Human Rights and Elderly organized by Bharathidasan University, Trichy, December*.
- SwetaGoswami (2016). *The ugly truth about old age in India*, June, *The Hindu*.
- Sudha (2018) "Aged women are under care or undercare? - A study of TamilNadu", *Bothi International Journal of Research in Humanities, Arts and Science* vol.3 spl iss 11 Nov.018 E-ISSN 456-5571.
- Website: www.agewellfoundation.org
www.hsph.harvard.edu/pgda/lasi.html