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Effect of Dietary Counseling on Nutrients Intake of Lactating Women at Rural Area of Lucknow District

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Abstract

Background

The amazing ability of women is to produce a sufficient quality and quantity of breast milk to support an infant even if the woman is undernourished. However, breastfeeding women do need an increased number of calories and nutrients to maintain their milk supply. Women should eat a healthy and well-balanced diet that includes protein carbohydrates, vitamin, minerals and a limited amount of fat, sometimes with a multivitamin supplement if required.

The aim of present study was to evaluate the effect of dietary counseling on the nutrients intake of lactating women at rural area of Lucknow.

Material and Methods

The present community based trail was conducted at four block of Lucknow district. A sample of 200 lactating women was selected randomly. 24 hours dietary recall method was used for assessment of nutrients intake. Intense dietary counseling was conducted at frequent interval for the period of three months.

Results

The mean intake of energy (before 1784.26 kcal & after 1947.02 kcal), protein (before 53.69 gm & after 58.74 gm) and fat (before 57.35 gm & after 58.20 gm) were found increased after counseling. Similarly, mineral intake (Ca: before 803.80 mg & 969 mg; Fe: before 14.48 mg & after 21.74 mg) were also increased. Intake of vitamins like Vitamin-A, Thiamin, Riboflavin, Niacin and Vitamin C initially before counseling were 2646.20 mg, 1.45 mg, 0.82 mg, 16.41 mg and 44.72 mg which increased to 2965 mg, 1.51 mg, 1.02 mg, 17.53 mg and 52.47 mg after counseling respectively.

Conclusion

Hence it can be conclude that after diet counseling nutrients intake was increases gradually.

Keywords : Lactating Women, Dietary Counseling, Nutrient Intake, 24 Hour Dietary Recall Method.

Introduction

Lactation places high demands on maternal stores of energy, protein, and other nutrients. These stores need to be established, conserved, and replenished. Virtually all mothers, unless extremely malnourished, can produce adequate amounts of breast milk. The energy, protein, and other nutrients in breast milk come from a mother's diet or her own body stores. Women who do not get enough energy and nutrients in their diets risk maternal depletion. To prevent this, extra food must be made available to the mother. Breastfeeding also increases the mother's need for water, so it is important that she drink enough to satisfy her thirst. Maternal deficiencies of some micronutrients can affect the quality of breast milk. These deficiencies can be avoided if the mother improves her diet before, during, and between cycles of pregnancy and lactation, or takes supplements. For example, studies have shown that appropriate supplementation improves vitamin A levels in the mother, in her breast milk, and in the infant. Meeting nutrient Requirements. (1) Under nutrition and poor health from preventable causes disproportionately affect the well-being of millions of people in the developing world. Factors at individual, household and community level, or a combination of these factors, may contribute to poor nutrition and health status [8]. In particular, malnutrition among women is likely to have a major impact on their own health as well as their children's health. More than 3.5 million women and children under age five in developing countries die each year due to the underlying cause of under nutrition [1].

Women are more likely to suffer from nutritional deficiency than men for several reasons, including their reproductive biology, low social status, poverty and lack of education. In addition, socio-cultural traditions and disparities in household work patterns can also increase women's chance of being malnourished [2]. Between 5 to 20 percent of women in various African countries are underweight. Many African women display low weight-for-height as measured by a body mass index of less than 18.5 [3]. Women in low-income settings often consume inadequate amount of micronutrients because of limitation of resources. They have a limited intake of animal source foods, fruits and vegetables. Intake of micronutrients less than the recommended values increase women's risk of micronutrient deficiencies [4]. Adequate nutritional status of women is important for good health and increased work capacity of women themselves as well as for the health of their offspring [5].

Severely malnourished mothers have reduced lactation performance contributing to the increased risk of child mortality [6].

Nutritional requirements during lactation are greater than during pregnancy. If a mother is well nourished during pregnancy, she will have adequate fat and other nutrient reserves that can be used to compensate partially for her additional requirements. Lactating mothers from low-income settings are considered as nutritionally vulnerable group. Due to the nursing process mothers are subjected to nutritional stresses. Frequent pregnancies followed by lactation increase the health risk of mothers resulting in a high maternal mortality [8]. A nursing mother produces 0.7 to 0.8 liters of milk per day, containing 330 milligrams of calcium per liter. This requires an extra energy expenditure of at least 500 calories per day [9]. The quality of breast milk is only affected in extreme cases of deprivation, or by excessive intake of a particular food [10]. But the quantity of milk depends very much on the mother's diet. Food absorbed by a nursing mother not only fulfills her own nutritional needs, which are greater during the postnatal period, but also enables her to produce milk [9].

Research based information regarding maternal nutrition from the study communities is lacking. Information on the feeding practices, nutritional status and associated factors of the lactating women are urgently needed for prioritizing, designing and initiating intervention programs aimed at improving maternal nutrition. The process for priority setting should start with the assessment and analysis of the situation that lactating women face in their environment. Mothers should be counseled about the need for an adequate diet in order to achieve optimal lactation and sustain it without depleting their own nutrient stores. Particular attention should be given to intakes of protein, calcium and vitamins [7]. Thus, this study was carried out to provide information regarding the feeding practices, nutritional status and associated factors of the lactating women in the study area.

Aim of the Study

The aim of present study was to evaluate the effect of dietary counseling on the nutrients intake of lactating women at rural area of Lucknow.

Material and Method

This community based trial was carried out at rural area of Lucknow district. Among eight rural blocks of Lucknow district four blocks namely Sarojani Nagar, Chinhat, Bakshi ka Talab and Kakori were selected randomly. The sample size of 200 respondents was calculated by standard formula. From all the lactating females who were enrolled in Anganwadi centers total 200 lactating women were selected by random allocation. A pretested semi structured study schedule was use for the collection of demographic data of respondents which includes their name, age, education, religion and dietary habits. For the assessment of nutrient intake 24 hour dietary recall method was used. Calculation of nutrient composition of food was done manually. To improve the nutrient intake of lactating women intense dietary counselling was conducted at the interval of 15 days for the period of three months. The collected data were entered into Microsoft Excel for the correction of any inconsistency. All the statistical analysis was done by using SPSS 16.0 version.

Results

The maximum percent i.e. 50 percent of lactating women were found between the age group of 25-30 year. 35 percent of the respondents belong to 30-35 years of age group, the minimum 15 percent was of 20-25 years age group . The maximum respondents were found to be of the graduate level 40 percent followed by 30 percent found is up to 12th Std then 15 percent of the respondents were found to be literate up to 8th Std and 10% belonged to illiterate group while the minimum percent of respondents belonged to the post graduate level i.e. five percent. More than half of the respondents were Hindu (70%) and the remaining 30 percent were Muslim. Maximum numbers of respondents were Non- vegetarians (75%) and rest of the 25 percent was found vegetarians.

The table 1 reveals the mean dietary intake of the respondents at initial stage of study as per data collected from 24 hour dietary recall method. Among macro nutrients the energy, protein and fat intake was 1784.26 kcal, 53.69 gm 57.35 gm respectively. The intake of calcium and iron was found to be 803.80 mg and 14.48 mg respectively. While intakes of vitamins like beta-carotene, thiamin, riboflavin, niacin and ascorbic acid was 2646.20 µg/d, 1.45 mg, 0.82 mg, 16.41 mg and 44.72 mg per day respectively.

Effect on dietary intake

Table 1 reveals the comparison between mean dietary intake of nutrients of the respondents at initial and final stage. The nutrients intake was gradually increased from initial to final stage. Before diet counseling energy intake was 1784.26 kcal that finally reaches up to 1947.02 kcal. Dietary intake of nutrients such as protein and fat before dietary counseling on an average were 53.69 gm and 58.74 gm but after diet counseling intake increases 57.35 gm and 58.20 gm at final stage respectively. Minerals intake of respondents such as calcium and iron were found to be increase after dietary counselling from

803.80 mg and 14.48 mg to 969 mg and 21.74 mg per day at final stage respectively. Intake of vitamins like Vitamin-A, Thiamin, Riboflavin, Niacin and Vitamin C initially before counseling were 2646.20 mg, 1.45 mg, 0.82 mg, 16.41 mg and 44.72 mg which increased to 2965 mg, 1.51 mg, 1.02 mg, 17,53 mg and 52.47 mg at final stage after counseling respectively.

Table 1

Mean dietary Intake of Nutrients of the Respondents tt Initial tnd Final Stages

Nutrients	Mean initial Intake	Mean Final Intake	Difference
Energy (kcal/d)	1784.26	1947.02	162.76
Protein (gm/d)	53.69	58.74	5.05
Fat (gm/d)	57.35	58.20	0.85
Calcium (mg/d)	803.80	969	165.2
Iron (mg/d)	14.48	21.74	7.26
Vitamin A/β-carotene (µg/d)	2646.20	2965	318.8
Thiamin (mg/d)	1.45	1.51	0.06
Riboflavin (mg/d)	0.82	1.02	0.2
Niacin (mg/d)	16.41	17.53	1.12
Vitamin c(mg/d)	44.72	52.47	7.75

Discussion

This study assessed the feeding practices, nutritional status and associated factors among lactating women from four rural block of Lucknow district. According to the essential nutrition action (ENA), taking at least two additional meals per day during lactation is recommended for all lactating women [9]. According to this study, many women in lucknow district tried to increase their energy intake in diet i.e. 162.7 kcal/d. The protein intake of the study participants was too less compared to the recommended intake of FAO/WHO/UNU [11]. Only 5.05 gm/d increased after counselling. The quality of the dietary protein can be improved by combining protein sources (grains and legumes) with different limiting amino acids [10]. Thus, mixtures of plant proteins can serve as complete and well balanced source of amino acids for the lactating women. The current study also revealed that macronutrient intakes especially calcium and iron of the lactating women were below the recommended and after counselling it increased 165.2 and 7.26 mg/d respectively. In the present study, it was also found that dietary vitamins intake of the lactating women was lower than the recommended intakes of FAO/WHO/UNU [9]. This might also be related to the much lower intake of fruits and vegetable which are main source of vitamins. Women of reproductive age are thought to be vulnerable to vitamin A deficiency during pregnancy and lactation [12,13]. In the current study, it was found that the lactating women's dietary intake of vitamin A 318.8 µg/d was increased after counselling.

Major strengths of this study were the community based approach and random selection of the study. This made generalization possible to the study communities as an attempt was made to identify randomized lactating women from the study communities.

Conclusion

Hence it can be concluded that after diet counseling nutrients intake was increases gradually. Therefore, sustained health and nutrition education is recommended to the women and their families and communities on increased food intake, proper dietary practices and dietary diversification during lactation in order to improve health and nutrition outcomes of lactating women.

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