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Nutritional status of women through their life span: An overview in reference to Uttarakhand State

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ABSTRACT

Women have always been subjected to secondary position in the society because of various reasons and this has taken a toll on her health. The health and nutritional status of women is pitiable irrespective of their developmental stage. The present study reviews the nutritional status of females in Uttarakhand and it was seen that throughout the life span, in every developmental stage females had poor nutritional state. Girl child below 5 years, school going girls, adolescent girls and adult women all experienced poor nutritional state. A host of contributory factors like poor education levels, lower wealth quintiles, heavy workload of women living in hilly terrain, ignorance, wrong food choice, inadequate food and nutrients in the diet, family size, reluctance towards availing health facilities were identified for poor nutritional health of females. Moreover, recently women are undergoing through a transitional stage of under nutrition coupled with over nutrition. Thus there is a need to create awareness among women through imparting nutritional education, so as to maintain the optimum nutritional status.

Key Words : Nutritional status, Females, Uttarakhand

INTRODUCTION

Uttarakhand state carved out of Uttar Pradesh in the year 2000, has experienced 19 years of autonomy. The state has been made as a new independent state, so as its people may flourish and prosper. Prosperity of any state can be measured on various scales and one such scale is health of its people, especially the vulnerable segments. Women have been marginalized irrespective of their place of living and age. Women have experienced secondary position compared to men throughout their lifetime. There may be host of reasons for this disparity like socio-cultural system giving more importance to patriarchal society, stereotype mindset considering females to be burden, despite the constitution granting equal rights to both the genders. This disparity has taken toll on health of females. Though the state is making advancement in the position of women by ensuring them quality education, health, employment status but still the vulnerability is under question. The present paper is an attempt to analyze the nutritional status of females from birth till adulthood, residing in Uttarakhand state.

METHODOLOGY

The health and nutritional researches done particularly in Uttarakhand state on females after year 2000 has been collected, analyzed and categorized on the basis of age as follows:

a) below 5 years, b) school going children and adolescent girls (6-18 years) and c) adult women (above 18 years) with the following objectives:

i. To review the nutritional status of women through their life time.

ii. To outline the possible determinants influencing nutritional status.

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RESULTS AND DISCUSSION

Life span refers to the duration of existence of an individual. The stages of human lifespan can broadly be categorized into prenatal stage, infancy, early childhood, late childhood, adolescent, adulthood and old age. Each stage is significant in terms of growth and development and nutrition plays a vital role. In the present study to comprehend the nutritional status of females of Uttarakhand, three stages have been taken up: i) children below 5 years; ii) school going children and adolescent (6-18 years); iii) women in adulthood (above 18 years)

Nutritional status below 5 years:

This is the time of growth spurt. Maximum growth and development occurs in a rapid speed during this age. Hence, adequate nutrition is important for growth and developing immunity. Inadequate and unbalanced nutrition supply during this stage may lead the child into the vicious cycle of under-nutrition, impaired immunity and infection.

Various agencies and investigators have conducted researches to assess the nutritional status of females in Uttarakhand. According to NFHS-3 (2006) report, 20.5% girl children under five were severely stunted and 42.5% were moderately stunted; 5.4% were severely wasted and 17.6% were moderately wasted; 14.9% were severely underweight and 38.3% were moderately underweight. Similar grim scenario was reported by RSoC (2014) which stated that 13.9% and 34 % children below five in the state were severely and moderately stunted, respectively; 2.6 and 9.3% children were severely and moderately wasted, respectively; 5.9 and 20.6% were severely and moderately underweight, respectively. The state share 2.07% of stunted children, 2.1% of wasted children and 2.1% of underweight children of the country. Further classifying the children according to age it was seen that 15.3% children less than 6 months were severely stunted, 14.4% were severely underweight and 8.9% were severely wasted; in the age range of 6-11 months 9.4% were severely stunted, 6.3% were severely underweight and 3.2% were severely wasted; in the age range of 12-23 months, 23%, 10.6% and 2.7% were severely stunted, underweight and wasted, respectively; in the age range of 24-35 months 24.9%, 17.3% and 5.5% severely stunted, underweight and wasted, respectively; in the age range of 36-47 months 28.9% were severely stunted, 19.7% were severely underweight and 4.9% were severely wasted and children between 48-59 months 27.8% were severely stunted, 21.1 % were severely underweight and 7.8% were severely wasted. Mother's education and wealth index were associated with child's nutritional status.

After an interval of a decade, NFHS re-conducted the survey in Uttarakhand state and according to NFHS-4 (2015-16) report, among the girls under 5 years, 13.5% were severely stunted and 33.2% were moderately stunted; 8.5% and 18.8% were severely and moderately wasted, respectively; and 7% were severely underweight and 26.2% were moderately underweight. As compared to NFHS-3 report, a slight improvement has been seen in the status of girl children below 5, with the exception in wasting, but yet more has to be done. Nutritional status of children was influenced by mother's nutritional status, mother's educational level, birth interval and ordinal position of child.

Another study conducted on toddlers aged 0-36 months by Vyas *et al.* (2016) from the rural area of Uttarakhand found that almost 60% toddlers, irrespective of gender, were undernourished. Socio-economic status, level of parental education, parental employment status and poor living conditions were some of the factors observed to influence the nutritional status of toddlers. In the age range of 0-6 months, 6-12 months and 12-36 months, 62%, 56% and 60% female children were undernourished. Delayed weaning and poor knowledge regarding the choice of weaning food contributed to the poor nutritional status of girl child in hilly terrain of Uttarakhand (Vyas *et al.,* 2014).

According to AHS report (2014), in Uttarakhand 13.5% female children below five were moderately undernourished and 6.6% were severely undernourished but unfortunately the report also affirm that 9% (>2SD) and 5.3% (>3SD) of over-nourished female children were also in the state which is an alarm, as over-nutrition is also an indicator of malnutrition because of various disorders associated with it in the later age. Literacy rate and feeding practices were related to nutritional state of children.

Nutritional status of school going and adolescent girls:

During the childhood the growth of the child slows down in comparison to earlier years but the physical and psychomotor growth continues at a constant rate. Therefore, this age is also equally crucial in terms of nutritional status and it becomes more so important because under-nutrition and over-nutrition may run

parallel during this stage. Around 12 years, girls enter into adolescent stage. Adolescent stage is characterized by somatic growth along with rapid psychological and behavioral development and thus the qualitative and quantitative demands of nutrients increase during this stage.

This section covers the age from 5 to 19 years which actually deals with late childhood and adolescence stage. Semwal *et al.* (2004) found that in the age group of 5-12 years, the mean weight in the age group of 5, 8, 9, 10, 12 years and mean height in age group of 5, 6, 8, 10, 12 years of school going girls were lower than the ICMR standards. In another extensive study conducted by Semwal *et al.* (2006), it was observed that in the age group of 5-14 years all the girls had mean weight and mean height below the ICMR standards. 27.7%, 15.8% and 9% girls were mildly, moderately and severely underweight and 22%, 4.2% and 1.2% girls were mildly, moderately and severely stunted, respectively. The study was conducted in rural area of Dehradun district, Uttarakhand. Similar results were seen by Dutta *et al.* (2009). They analyzed the nutritional status of children aged 0-12 years, living in different agro-climatic conditions of Uttarakhand and they found that 17% and 16.1% of girls were severely stunted and wasted, respectively; 13% and 12.3% were moderately stunted and wasted and 8.2% and 10.5% were mildly stunted and wasted. Among the various age groups categorized by the researchers, it was seen that percentage of severe stunting and wasting was high among the children in the age group of 4-8 years and percentage of mild stunting and wasting was higher in 9-12 age group, though the delineation on the basis of gender was not mentioned. Osei *et al.* (2010) conducted research in villages of Garhwal Himalayan hills of Uttarakhand, to study the nutrition status of girl children aged 6-10 years and found that 1.2 and 10.4% were severely and moderately wasted; 19.2 and 33.8% were stunted and 8.8 and 47.7 % were severely and moderately underweight. Lower socio-economic status was related to underweight. These children also suffered from micronutrient deficiencies and the poor quality of diet was considered as major determinant. Rural and urban differential was noticed by Bhargava *et al.* (2015). A high percentage of girls in rural areas were malnourished as comparison to urban area. 31% girls in the age range of 5-10 years were underweight in comparison to their urban counterparts (8.5%). In the age group of 5-19 years, 20.4 and 26.6% rural girls were stunted and thin, respectively in comparison to 20.5 and 6% of urban girls.

A recent study conducted on primary school going girls aged 6-10 years by Limbu and Arya (2018) showed that in the age group of 6-8 years, 67.44% girls were underweight and 55.8% were stunted whereas in the age range of 9-10 years 55% girls were stunted and 30% were thin. It was observed that stunting was more prevalent in children aged 6-8 years than older children.

According to RSoC (2014), among the girls aged 10-18 years in the urban area of Uttarakhand, 54.6% had BMI less than 18.5 and 2.1 were obese whereas in rural area 56.2 had BMI less than 18.5 and 1.7 were obese. In total 55.9% girls were found to suffered from chronic energy deficiency and 1.8 % were obese, the mean BMI of girls were low (18.08). Saxena and Saxena (2011) also reported chronic energy deficiency among all the studied adolescent girls residing in high altitudes of Uttarakhand. In the age range of 12-15years, 25% and 50% of girls were stunted and underweight, respectively and in the age group of 16-19, 33.3% and 50% were stunted and underweight, respectively. NFHS-4 (2015-16) report revealed that in the age range of 15-19 years 32.6% girls had BMI less than 18.5 with 13.8% showing moderate or severe thinness and 5.4% as overweight and 0.6% as obese. On the basis of BMI for age percentiles, Dobhal and Raghuvanshi (2014) divulged that 19.55 % adolescent girls in the age range of 13-17 years to be underweight and 4.78% as overweight and 1.82% as obese. They found age, family size and per capita income as the contributory factors as these factors influence dietary pattern and eating habits which has a direct impact on nutritional status. According to AHS report (2014) 17.8% females aged 5-18 years were moderately undernourished and 5% severely undernourished. On the other hand, 2.3% and 0.7% were above 2SD and 3SD, respectively indicating presence of over nourishment which is alarming to notice because it was highest for Uttarakhand state compared to other surveyed states. Place of dwelling was identified as one of the factor responsible for nutritional status.

Dutta *et al.* (2017) found no association between BMI and factors like age, family type, family income, food habits and meal pattern. Their study exhibited that 3% of adolescent girls were severely undernourished, 11.6% moderately undernourished and 21% as stunted. The girls showed the signs and symptoms of micronutrient deficiency also as reflected through pale conjunctiva, mottled teeth and bleeding gums. It was seen that nutrient

intake of the subjects was inadequate. Bora and Kulshrestha (2016) found that diet of school going girls aged 7-9 years were inadequate in nutrients as per the recommended levels. The mean intake of energy, protein, vitamins like beta carotene, thiamin, riboflavin, niacin, folic acid, vitamin C and minerals like calcium and iron and consumption of food products like cereal, pulses, vegetables, fruits, milk and milk products were lower than recommended dietary intake (RDI). They found a significant association between food intake and variables like family size, father's occupation and parental education. Similar results were found by Bisht and Raghuvanshi (2008). They revealed that diet of school going children in the age range of 10-15 years was deficient in energy, protein, calcium, niacin, iron, carotene and riboflavin levels and as high as 55% of children suffered from various degrees of malnutrition.

Nutritional status of adult women:

Diet is of key importance during adulthood also, especially for women as they have to shoulder responsibilities of motherhood besides leading a healthy and active life for themselves. Maternal malnutrition has an adverse impact on mother and child and thus again a vicious cycle of underweight child with poor immunity may start if proper attention is not given during this stage.

According to AHS (2014), 19.6% females in age group of 18-59 year, 24.4% in the age of 60 and above suffered from chronic energy deficiency *i.e.* BMI <18.5 kg/m^2. 23.2 and 23.3 % in the age range of 18-59 years and > 60 years, respectively were overweight and 5.7 and 5.9% in age range of 18-59 years and >60 years, respectively are obese, *i.e.* had BMI$\geq$ 30 kg/m^2.

According to NFHS-4(2015-16) report, in the age range of 15-49 years, 18.4% women suffered from chronic energy deficiency, with a BMI less than 18.5 kg/m^2 and 20.4% women were obese (BMI$\geq$25). A decrease in prevalence of undernourishment but unfortunately increase in obesity was seen in comparison to earlier report of NFHS-3 (2006). According to NFHS-3 (2006) 30% women were undernourished and 12.8 were over nourished. Undernourishment was more prevalent in rural area and population with lower wealth quintiles whereas over-nutrition was seen more in urban areas, well educated and in highest wealth quintiles. Further age wise classification showed that in age group of 20-29 years 20% had BMI less than 18.5 kg/m^2 and 13.6% $\geq$ 25 kg/m^2. In age range of 30-39 years, 12% had BMI less than 18.5 kg/m^2 and 28.6% had $\geq$ 25 kg/m^2 and in age range of 40-49 years 11.1% had BMI less than 18.5 kg/m^2 and 34.4% had $\geq$ 25 kg/m^2. As the age increased, the prevalence of overweight increased (NFHS-4).

Results by Jethi and Chandra (2013) showed that nutrient intake *viz*., energy, iron, niacin, riboflavin was lower in women aged 31-45 years and as high as 57 to 85.7% women from adopted and non adopted villages suffered from various degrees of malnutrition. Education and family size were associated with nutritional status of women. Lack of nutrition related awareness coupled with reluctant behavior towards utilization of medical facilities was major reason for poor health and nutritional status of women (Nagarkoti and Maurya, 2014). 43.59% women were suffering from various degrees of chronic energy deficiency as evident from BMI. Out of total, 15.38% were in CED (Chronic Energy Deficiency) Grade II and 28.21 in CED grade I. The pregnant and lactating mothers also suffered from CED as their diet was inadequate (Pant, 2016). Although not much has been studied about the nutritional status of women, but in a study it was seen that 50% of elderly women aged 60 and above were suffering from orthopedic, respiratory, hypertensive, ophthalmic and psychological problems like depression and dementia (Negi *et al.*, 2004). Heavy workload in the fields as well as at home, inadequate diet, associated taboos, poverty, illiteracy, lack of facilities were some of the determinants of poor nutritional status of women residing in hills of Uttarakhand (Vats, 2006).

Conclusion:

Women in Uttarakhand throughout their lifespan experience under-nutrition which has an adverse effect on their physical and mental health. In all the age group, whether childhood, or adolescent or adulthood females in Uttarakhand reflects a poor health and nutritional state. Though in the recent years, prevalence of over-nutrition is also noticeable. Under-nutrition coupled with over nutrition is an alarming situation for women of Uttarakhand. Research amass showed that poor maternal health, poor education levels, lower wealth quintiles, heavy workload of women living in hilly terrain, ignorance, wrong food choice, inadequate food and nutrients, family size, reluctance towards availing health facilities are some of the identified factors for poor nutritional status of women. Thus, there is a need of imparting nutrition education to the women folk so as to create awareness. This would aid in improvement of not only their nutritional

status but also of the entire family. Also some modifications in current nutrition policy for the state may be considered so that the problems of women may be addressed better. There is also a need to conduct more such researches to assess the nutritional health of women and its possible determinants on a larger population with a thorough and complete representation of all the districts and topographical areas of the state.

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