

Prevalence of underweight, overweight and obesity and their associated risk factors amongst geriatric population living at high altitude region of rural Uttarakhand, India

Introduction: A high prevalence of malnutrition, as characterized by underweight (UW) and overweight (OW), has been reported among the geriatric population in India. The geriatric population has an increased risk of malnutrition due to physiological changes such as reduced metabolic rate, loss of appetite, difficulties in chewing and various co-morbidities. UW among the elderly can cause impaired muscle function and immune dysfunction that increases the risk of infection and mortality. OW among the elderly, on the other hand, may contribute to the onset of chronic non-communicable diseases such as diabetes, hypertension and CHD, functional decline and disability, and increased mortality. Earlier studies conducted in India suggest that identification of the risk factors associated with malnutrition in the geriatric population plays an important role in prevention of morbidity and mortality among them. The majority of these studies have been conducted in plains regions of the country. Lifestyle factors such as diet and physical activity are different in plains as compared with high-altitude regions of the country. We do not have scientific evidence on the risk factors associated with UW and OW among the geriatric population living in high-altitude regions of India; hence the present study was conducted to fill the gap in the existing knowledge.

Methodology: Community-based cross-sectional study was conducted in a high-altitude region of Nainital District, Uttarakhand State, North India. Data were collected amongst community-dwelling geriatric subjects (n=981) aged 60 years or above on sociodemographic profile and anthropometric parameters. Weight and height measurements were utilized for calculation of BMI. Nutrient intake data were collected using 24 h dietary recall.

Results: We found that 26.6 % of the elderly subjects were underweight (BMI<18.5 kg/m²). Overweight (BMI 25.0–29.9 kg/m²) and obesity (BMI≥30.0 kg/m²) was seen among 18.0 % and 4.6 %, respectively. Risk factors such as low level of education and income, chewing problems and lower number of meals were found to be associated with underweight. On the other hand, risk factors for overweight/obesity were lower age and high income. We observed that geriatric subjects with low BMI had lower dietary intakes of nutrients than those with normal BMI. Earlier studies conducted in other countries have also reported similar associations. Further weight loss due to inadequate dietary intake among these UW geriatric subjects may increase their risk of developing disability, compromised immune function, increased susceptibility to acute illnesses and reduce survival rate. Conversely, the percentage adequacy and nutrient intakes were documented to be significantly higher among OW/OB than UW and normal-weight geriatric subjects, possibly due to overall higher quantity of food consumed by the former. The diets of the geriatric subjects were found to be high in fat density (double the RDA) and low on nutrient density.

Conclusions: There is a need to develop and implement intervention strategies to prevent underweight, overweight and obesity among the geriatric population of India

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