

Prevalence of Malnutrition and Related Factors in Elderly Population

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ABSTRACT

Malnutrition in the elderly is caused by various complicated interaction of several factors and also it is a common issue among them. Studies from low- and middle-income countries reported a substantially greater prevalence of malnutrition than research from high income nations. According to the studies conducted in India overall occurrence of malnutrition in Indian elderly is 17.93%. Additionally, the prevalence of malnutrition was significantly influenced by geography and the tool used to detect it. The prevalence of malnutrition was higher among female 16.67%, hospital settings 28.87%, urban areas 19.29%, and northern region 27.37% of India. Malnutrition in the elderly is linked to decreased mobility, weakened immunity, and cognitive impairment,

¹. As the elderly population is growing, so are their health demands, these will pose new health care concerns ².

Age-related multimorbidity is common and is discovered to be more prevalent in nations with limited resources ³So, it is important to keep them as well-nourished. Malnutrition in the elderly is defined as a state of “faulty or inadequate nutritional status; undernourishment characterized by insufficient dietary intake, poor appetite, muscle wasting and weight loss” ⁴. Malnutrition in children is often considered,

all of which lower their overall functional capacity. So, elderly are specifically susceptible to malnutrition; thus, it is important to identify nutritional issues in them and take appropriate action.

Keywords: Malnutrition, Nutritional status, Elderly aged above 60, Mini nutritional assessment tool, Prevalence of malnutrition, Risk factors.

INTRODUCTION

Ageing populations are rising everywhere, particularly in developing nations like India. WHO predicts that in 40 years, 80% of the world's elderly will live in developing nations. Reports have shown that by 2050, number is expected to increase by 19% ¹ that in elderly is usually neglected ⁵. Malnutrition in the elderly is linked to decreased mobility, weakened immunity, and cognitive impairment, all of which lower their overall functional capacity ⁶. So, they are specifically susceptible to malnutrition; thus, it is important to identify nutritional issues in them and take appropriate action.

Prevalence Of Malnutrition

The 2016 Global Nutrition Report states that malnutrition affects one in three people

globally, which makes it a significant public health issue^[7]. Between 13% and 47.8% of the elderly people in the community are undernourished. Studies from low- and middle-income countries reported a substantially greater prevalence of malnutrition than research from high-income nations⁸ According to research done in various regions of India shows that 7-19% of older adults are malnourished. Contribution from rural areas appear to be more^[9]. And also, the studies say that as the age increases prevalence of malnutrition also will increase^[10,11]. Ministry of social justice and empowerment posted a report through Press Information Bureau on 05 APR 2022 which says that in India, 27% of those aged 60 and more are underweight, while 22% are overweight or obese, demonstrating a dual burden of undernutrition and overnutrition among the elderly^[12].

A systematic review and meta-analysis conducted in India in the year of 2020, which included the studies published in the year between 2010-2019 in order to estimate the malnutrition and risk of malnutrition among elderly had shown that the prevalence of malnutrition among the elderly was 18.29% and 48.17% respectively. The prevalence of malnutrition in India was higher among female 16.67%, clinical settings 28.87%, urban areas 19.29%, and northern region 27.37%^[13]. Another meta-analysis and systematic review of prevalence data of malnutrition and nutritional risk in older adults across various healthcare settings revealed a wide range of malnutrition, from 3% in the community setting to about 30% in rehabilitation and subacute care, despite the fact that the review restricted itself to research studies using the Mini Nutritional Assessment^[14]. Bisai s et al. included further studies to determine the overall occurrence of malnutrition of Indian elderly with the 147 studies reported malnutrition of elderly assessed by mini nutritional assessment tool revealed that overall prevalence of malnutrition among elderly

was 17.93%. According to this study the prevalence is more in rural elderly 21.6% than urban 14.23% elderly^[15].

In different nations around the world, the percentage of old individuals who are malnourished ranges from 10% to 60%^[16]. The environment, underlying or accompanying disease, as well as the manner of screening and assessment, all have a significant impact on the prevalence of malnutrition. Although the specific numbers of malnutrition prevalence vary between meta-analyses, the key conclusions are comparable, showing that the community setting had the lowest percentage of malnourished people and that acute and subacute settings had the highest percentages. There were also sex-specific differences, with women having the highest risk. Additionally, the prevalence of malnutrition was significantly influenced by geography and the tool used to detect it^[17].

Malnutrition in the elderly continues to be a significant problem with high reported frequencies, especially in conditions of dependency, despite the body of research outlining the personal and clinical effects of the condition as well as its financial impact on the system of health care^[18]. This has been credited to inadequate knowledge and a lack of time or education on the part of medical and nursing professionals, but it is indisputably difficult to recognise and treat malnutrition in older persons, especially when it is detected early. Overall, it is estimated that approximately 25 percent of European adults over 65 are at high risk of malnutrition in a variety of contexts^[19].

Malnutrition And Related Factors

Malnutrition in the elderly is caused by various complicated interaction of several factors. The Related factors of Malnutrition in Aged Persons (Do Map) model illustrates the direct and indirect risk factors for malnutrition linked to the three main variables that contribute to its development: low intake, high requirements, and impaired nutrient bioavailability^[20]. One of these three main conditions may become active as

a result of indirect factors, such as low educational attainment and poverty, which can then cause malnutrition. Some sociodemographic characteristics can predict malnutrition in older adults because they are well-known predictors of such indirect factors [21]. Several socioeconomic factors, including age, sex, educational attainment, marital status, income level, occupation, place of residence, and region, have a strong correlation with malnutrition or the risk of malnutrition in older adults [22,23].

Age, sex, educational attainment, employment position, marital status, place of residence, economic standing, and caste all have a substantial impact on indirect factors that might be linked to malnutrition in India [6,24,25]. One of the important research projects was "The Hellenic

Longitudinal Investigation in Ageing and Diet," which was carried out in Greece (2014) with 1,050 participants, found a number of variables relating to elderly people living in the community's nutritional status. Marriage status, Body Mass Index (BMI), sex, educational attainment, cognitive function, and adherence to the Mediterranean diet were the factors. The frequency of moderate and high nutritional hazards was also considerable, with only around one-third of the individuals being adequately fed. An illness or disease that affected food intake, dental or oral difficulties, eating few fruits and vegetables or dairy products, and dining alone most of the time were other factors that increased the risk of malnutrition²⁶. Some of the sociodemographic variables are described below.

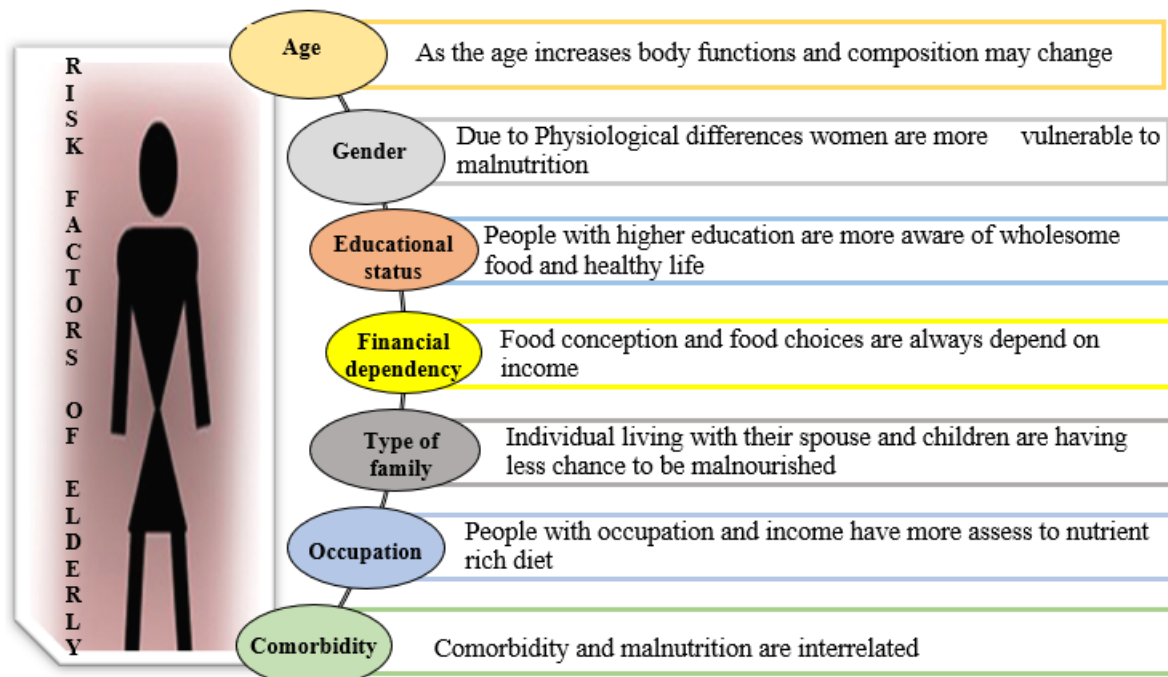


Figure:1 Demographical risk factors of elderly

Age

The body's functions and composition change as we age, which has an impact on how nutrients are absorbed and used by the body. Some nutrients' requirements change as a result. Due to the loss of bone and muscle mass as we age, our ability to exercise lessens [27]. Additionally, the metabolic rate drops. Thus, the caloric

requirements of the elderly are lower [28]. Ageing, which occurs for a variety of reasons, has a significant impact on food intake and absorption. Both appetite and the senses of taste and smell decline. Chewing becomes challenging due to tooth loss and denture issues. Food intake is further hampered by acid reflux, constipation, and recurrent episodes of diarrhoea and

constipation (irritable bowel syndrome). As the age increases the individual will become less active and have reduced appetite and therefore food intake also will decrease [29]. Feeding is often challenging and food is no longer enjoyable, especially if there are additional issues like swallowing issues brought on by neurological factors. Certain dietary items are frequently off-limits due to chronic conditions, which further lowers food consumption. The digestive system changes associated with ageing have an impact on nutrient absorption as well. As a result, it becomes difficult for them to get the nutrition they need, which increases their risk of becoming malnourished. The age-related changes to the digestive tract also affect how well nutrients are absorbed. They find it more challenging to obtain the nourishment they require as a result, increasing their vulnerability to malnutrition [30]. Studies also shown that as the age increases there is a chance of elderly to become malnourished or to be at risk [31,32]. Some of the other studies also revealed that as the age increases there is a chance of increased anorexia and this will lead to further malnutrition in elderly population. [6]

Gender

In the association between lifestyle choices and a number of age-related illnesses, including cognitive decline and sarcopenia, gender disparities have been noted. Additionally, it was recently found that the association between food and frailty is stronger in female participants than in male subjects, possibly due to physiological differences [33,34]

There are a number of physiological gender variations that could account for a stronger response to nutrition in females, while the exact processes are yet unknown. Older women are more susceptible to chronic inflammation since their sex hormone levels have decreased after menopause [35]. Which may therefore raise the chance of mobility loss due to negative muscular consequences [36]. Additionally, this increased risk may make women more vulnerable to depression

and chronic pain, which leads to a higher prevalence of polypharmacy in women than in men [37].

Additionally, older females may be more vulnerable to inadequate protein consumption due to their lower lean mass compared to older males, or to inadequate intakes of key nutrients like vitamin D and calcium, due to their greater risk for bone loss [38,39]. Given the close correlation between bone mass, muscle mass, and functional measures, this may explain why poor nutrition has a stronger effect on female mobility [40].

Especially the study conducted in rural areas the females are more prone to be malnourished [41]. This might be due to the position of women in society, such as the impact of their customary practice of eating last after serving men and children, who typically share the leftover food, which may be less nutrient-dense [42].

Educational Status

Multiple studies have shown that nutritional status also have some association with educational status. This might be the case because people with higher education may be more aware of wholesome foods, healthy lifestyles, and active ageing [43].

Financial Dependency

Financial dependence and nutritional status are related. This might be as a result of food consumption or food choices, which all depend on income. The amount of food consumed is determined by purchasing power as well as a number of intricate socioeconomic problems that are either directly or indirectly related to malnutrition. Financial challenges can cause people to consume more inexpensive, less nutritious, but more energy-dense meals [44,41].

Type Of Family/House

Family type also is an important factor that contributes to malnutrition. Elderly people living with their spouses or children showed decreased levels of malnutrition, demonstrating the value of family care in

preventing the condition [45]. When compared to owners, tenants had a 3.2 times higher risk of malnutrition. Given that tenants typically come from migrant backgrounds and may not have a stable source of income, this finding may be explained by the possibility of malnutrition [46].

Occupation

Elderly people without jobs were 3.23 times more likely to suffer from malnutrition than those with jobs. This can be explained by the possibility that the financially stable older adults who are employed have easy access to nutrient-rich diets. Additionally, individuals must rely less financially on the careers to provide their basic needs for food and hygiene [47].

Comorbidity

Comorbidity and malnutrition are two typical geriatric disorders. A lack of nutrients to meet the body's physical needs is the main cause of poor nutritional status, which is a health problem. Comorbidity will result from an increase in age-related psychological and physiological changes. As a result, elderly people have particularly poor nutritional status [48].

Certain chronic diseases like heart disease, diabetes, high blood pressure, stroke, osteoporosis, arthritis, chronic kidney disease, cancer, etc. that are frequently present as people age further modify dietary needs. In fact, several of these disorders are brought on in part by bad eating habits, and the existence of such conditions necessitates dietary changes. Therefore, elderly's ability to stay healthy and recover from disease may be influenced by their diet [49]. Thereby, it is crucial to regularly evaluate the nutritional health of elderly persons in terms of both their eating habits and anthropometric measures.

Dehydration, which may be avoided, is a serious worry for elderly people in addition to hunger. Acute illnesses like diarrhea or vomiting, as well as ageing, various drugs, altered mental condition, and a decrease in

thirst feeling all increase the risk of dehydration in older people

MATERIALS & METHODS

Literature Search

We searched the MEDLINE/PubMed/Google Scholar database for articles from November 2010 to November 2021 using the following search terms: Malnutrition, Nutritional status, Mini nutritional assessment tool. Prevalence of malnutrition, Risk factors. In order to restrict the article found we limited the search with "Elderly aged above 60"

SOURCE OF DATA: Google scholar, PubMed, Research Gate

STUDY DESIGN: Literature review

INCLUSION CRITERIA: English article, Article concerned with elderly aged above 60.

EXCLUSION CRITERIA: Other than English article.

CONCLUSION

In view of the studies referred to in this article, we can see that we need to pay more attention to the status of the outnumbered elderly population. Despite several studies and corresponding progress, most of the elderly population in rural communities are still undernourished. Therefore, studies and policies are needed to prevent the malnutrition among elderly. So, more researchers and authorities need to take initiatives for this.

Declaration by Authors

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