



Malnutrition and Diet Quality among the Old Age People of Rural Area of Bhagalpur District, Bihar

Ashok Kr. Thakur¹, Atul Samiran², Varsha Anand³

¹Professor, University Department of Zoology, T.M.B.U. Bhagalpur, Bihar, India

^{2,3}Student, University Department of Zoology, T.M.B.U. Bhagalpur, Bihar, India

ABSTRACT

The aim of the present study is to find the Malnutrition and Diet Quality among the old age people of rural area of Bhagalpur district, Bihar. Low socioeconomic status (SES) is frequently linked to a number of health-related issues. Therefore, the purpose of this study is to identify the incidence of malnutrition, poor food quality, and risk factors among older persons with low SES.

Keywords: Malnutrition, Socioeconomic condition, diet, People

INTRODUCTION

Globally, population ageing is now a recognised phenomenon. The accelerated ageing of the global population, particularly in middle- and low-income nations, has been highlighted at the World Health Organisation (WHO) Global Forum on Innovations for Ageing Population. About 80% of the world's older adult population is predicted to live in emerging nations during the course of the next 40 years (WHO, 2013). Older folks can now live longer, healthier lives with improved functional fitness because to advancements in health care treatment and accessibility. The growing baby boomer population was also aided by older folks' longer life expectancies, which now average 20.4 years for men and 17.8 years for women (Wellman *et al.*, 2017).

Older adults are defined as persons who are 65 years of age and older in various government programmes. Older people are those who are 60 years of age or older, according to the United Nations (DSEA, 2015). However, the US Census Bureau categorises older persons into three age groups: young old (those 65 to 74), old (those 75 to 84), and eldest old (those 85 or more) (Wellman *et al.*, 2017).

The nutritional health of older persons has a significant impact on their quality of life, health, and functional independence. It may be more challenging to achieve nutritional demands as we age, however, due to physiological changes, chronic illness, chewing and swallowing issues, decreased energy expenditure, and psychosocial issues (Leslie and Henkey, 2015). However, older persons who reside in the most underserved communities are undoubtedly more affected by these developments.

Most older persons with low SES are jobless, undereducated, and in need of financial help. They also tend to live in rural areas, have more severe disabilities, and are more likely to suffer from malnutrition due to poor diet quality (Shahar *et al.* & Donini, 2013).

Diet quality is a notion that places an emphasis on the entirety of what a person consumes, looks at healthy eating patterns as a whole, and aims to assure long-term improvements in both population and individual health (Hiza *et al.*, 2018). Limited consumption of fruits, vegetables, legumes, and whole grains, as well as excessive consumption of high-calorie, low-nutrient-packed meals with added sugars, are all signs of poor diet quality. Due to the coexistence of multiple factors, including poor dental health, frailty, chronic disease, psychosocial issues, and physical limits that will gradually degrade bodily function, ageing itself may raise the risk of malnutrition (Fávaro *et al.*, 2016). The frequency of malnutrition and the calibre of older individuals' diets in low SES are therefore discussed in this article.

The lack of access to high-quality food, however, puts older persons who are socioeconomically disadvantaged at greater risk of malnutrition.

Materials and Methods

The Survey was done in the rural area of Naugachhia subdivision of Bhagalpur district of Bihar. A total of 300 old age people data from this subdivision were collected through personal interviews and questionnaires. The diet quality and health status of all 300 old people were noted.

The old age people were categorised as per the US Census Bureau: young old (those 65 to 74), old (those 75 to 84), and eldest old (those 85 or more).

Result

The following results were obtained in the present study.

Age Group	No.	Socioeconomic Status	Malnutrition (%)
Young old (65 to 74 Years)	150	Good (22)	6%
		Moderate (48)	13%
		Low (80)	52%
Old (75-84 Years)	100	Good (27)	4%
		Moderate (31)	11%
		Low (42)	51%
Eldest Old (85 or more)	50	Good (17)	3%
		Moderate (21)	9%
		Low (12)	38%

Table 1: Table 1 Shows the old age group People their economic status and malnutrition among them.

In the above table (Table No. 1) we can see that old age people with good economic conditions have a lower percentage of malnutrition whereas people with lower economic conditions have a greater percentage of malnutrition. In the young old group, the malnutrition percentage was noted 71%, it became 66% in the old age group. In the Eldest old group, the malnutrition percentage was noted 50%.

Age Group	No.	Malnutrition (%)	Diet Quality
Young old (65 to 74 Years)	150	71%	Low
Old (75-84 Years)	100	66%	Low
Eldest Old (85 or more)	50	50%	Low

Table 2: Table shows malnutrition and diet quality among the old age people group.

Discussion

Malnutrition is described by the American Society for Parenteral and Enteral Nutrition (ASPEN) as an acute, subacute, or chronic state of nutrition in which

varying levels of overnutrition or undernutrition with or without inflammatory activity have resulted in a change in body composition and diminished function (A.S.P.E.N., 2015). In this study, it is found that old age people with good economic conditions have a lower percentage of malnutrition whereas people with lower economic conditions have a greater percentage of malnutrition. Both overnutrition and undernutrition are terms used to describe malnutrition. As the years went by, malnutrition prevalence increased across the board, especially among older adults (Chern & Lee, 2015). In older individuals with low SES in non-Asian countries, it was discovered that the prevalence of undernutrition or being at risk of undernutrition ranged from 28.9% to 48% between the years 2010 and 2019 (Fares *et al.*, 2012, Wham *et al.*, 2015).

Between 2010 and 2019 (5,14,15,16,17,25), the prevalence of undernourished low SES older individuals in Asia ranged from 3% to 64.9%. Additionally, 2.5% to 32.8% in Asian nations (5,16) and 8.1% to 28.2% for non-Asian countries (11,12,26) respectively, were the ranges for the prevalence of overweight/obesity among older persons with low SES. The varied standards used to determine the presence of malnutrition and its danger may be the cause of the difference in the prevalence of malnutrition around the world. There are several different nutritional screening and evaluation techniques available. By using structured assessment techniques to accurately and quickly detect malnutrition in older persons, intervention plans may be planned to address the issue at its earliest stages. While a tool with high specificity will lessen the risk of overtreatment malnutrition, especially in those who do not require it, a nutritional screening and assessment tool with high sensitivity will allow for accurate detection of those with nutritional problems and very little go undetected (Sakinah & Tan, 2012). BMI was the criterion employed by the majority of research (60%) in this review to determine malnutrition (Boulos *et al.*, 2016, Liu *et al.*, 2018).

One of the most popular methods for determining malnutrition is body mass index (BMI), which is regarded as a cheap, easy, rapid, and practical measurement where the level of risk is allocated based on falling BMI cut-offs (30).

Conclusion

This review supports the existence of an association between poor diet quality and low socioeconomic status among older adults. The majority of the studies (90%) included in this review reported that older

adults with low socioeconomic status had poor diet quality, with the exception of one study by Rajhans and Sharma (2011) (24).

References

- [1] World Health Organization (WHO) (2013) WHO Global Forum on Innovation for Ageing Populations. Japan: WHO.
- [2] Wellman NS, Kamp BJ (2017) Nutrition in Aging. In: Mahan LK, Raymond JL (eds), Krause's Food & the Nutrition Care Process, 14th ed, pp. 367–381. Canada: Elsevier.
- [3] United Nations, Department of Economic and Social Affairs (2015) World Population Ageing 2015. New York: United Nation.
- [4] Leslie W, Hankey C. (2015). Aging, nutritional status and health healthcare. *Healthcare (Basel)* 3(3), 648-658. doi:10.3390/healthcare3030648.
- [5] Donini LM, Poggiogalle E, Piredda M et al. (2013) Anorexia and eating patterns in the elderly. *PLoS One* 8(5), 63539. doi:10.1371/journal.pone.0063539.
- [6] Hiza HAB, Koegel KL, Pannucci TRE (2018) Diet quality: the key to healthy eating. *J Acad Nutr Diet* 118(9), 1583–1585. doi:10.1016/j.jand.2018.07.002
- [7] Fávaro-Moreira NC, Krausch-Hofmann S, Matthys C et al. (2016) Risk factors for malnutrition in older adults: a systematic review of the literature based on longitudinal data. *Adv Nutr.* 7(3), 507-522. doi:10.3945/an.115.011254.
- [8] Moher D, Liberati A, Tetzlaff J et al. (2009) Preferred reporting items for systematic reviews and meta-analyses: The Prisma statement. *Ann Intern Med* 151(4), 264-269. doi: 10.7326/0003-4819-151-4-200908180-00135.
- [9] Ahn S, Huber C, Smith ML et al. (2011) Predictors of body mass index among low-income community-dwelling older adults. *J Health Care Poor Underserved* 22(4), 1190-204. doi:10.1353/hpu.2011.0134.
- [10] Fares D, Barbosa AR, Borgatto AF et al. (2012) Factors associated with nutritional status of the elderly in two regions of Brazil. *Rev Assoc Med Bras* 58(4), 434-441. doi:10.1016/S2255-4823(12)70225-4.
- [11] Wham CA, Teh R, Moyes S et al. (2015) Health and social factors associated with nutrition risk: Results from life and living in advanced age: A cohort study in New Zealand. *J Nutr Health Aging* 19(6), 637-645. doi:10.1007/s12603-015-0514-z.
- [12] Boulos C, Salameh P, Barberger-gateau P (2016) Malnutrition and frailty in community dwelling older adults living in a rural setting. *Clin Nutr* 35(1), 138-143. doi:10.1016/j.clnu.2015.01.008.
- [13] Ghimire S, Baral BK, Callahan K (2017) Nutritional assessment of community-dwelling older adults in rural Nepal. *PLoS One* 12(2), 0172052. doi:10.1371/journal.pone.0172052.
- [14] Selvamani Y, Singh P (2018) Socioeconomic patterns of underweight and its association with self-rated health, cognition and quality of life among older adults in India. *PLoS One* 13(3), 0193979. doi: 10.1371/journal.pone.0193979.
- [15] Liu Z, Pang SJ, Man QQ et al. (2018) Prevalence of undernutrition and related dietary factors among people aged 75 years or older in China during 2010-2012. *Biomed Environ Sci* 31(6), 425-437. doi:10.3967/bes2018.056.
- [16] Conklin AI, Forouhi NG, Suhrcke M et al. (2014) Variety more than quantity of fruit and vegetable intake varies by socioeconomic status and financial hardship. Findings from older adults in the EPIC cohort. *Appetite.* 6(30), 73-77. doi:10.1016/j.appet.2014.08.038.
- [17] Francis-Granderson I, Pemberton C (2010). Factors influencing nutritional status of rural low-income elderly in Trinidad. 28th West Indies Agricultural Economics Conference, Barbados. No 529-2016-38277.
- [18] Dijkstra SC, Neter JE, Brouwer IE et al. (2014) Adherence to the dietary guidelines for fruit, vegetables and fish among older Dutch adults; the role of education, income and job prestige. *J. Nutr. Health Aging* 18(2), 115-121. https://doi.org/10.1007/s12603-013-0402-3.
- [19] Holmes BA, Roberts CL (2011) Diet quality and the influence of social and physical factors on food consumption and nutrient intake in materially deprived older people. *Eur J Clin Nutr* 65(4), 538-545. doi:10.1038/ejcn.2010.293.

- [23] Katsarou A, Tyrovolas S, Psaltopoulou T, et al. (2010) Socio-economic status, place of residence and dietary habits among the elderly: the Mediterranean islands study. *Public Health Nutr* 13(10), 1614-1621. doi:10.1017/S1368980010000479.
- [24] Chang Y, Hickman H (2017) Food insecurity and perceived diet quality among low- income older Americans with functional limitations. *J Nutr Educ Behav* 50(5), 476-484. doi:10.1016/j.jneb.2017.09.006.
- [25] Rajhans K, Sharma R (2011) Relationship between socio-economic status and energy intake of elderly from Central India. *JIAG* 7(4), 167-174.
- [26] Arjuna T, Soenen S, Hasnawati RA et al. (2017) A cross-sectional study of nutrient intake and health status among older adults in Yogyakarta, Indonesia. *Nutrients* 9(11), 1240. doi:10.3390/nu9111240.
- [27] Maila G, Audain K, Marinda PA et al. (2019). Association between dietary diversity, health and nutritional status of older persons in rural Zambia. *South Afr J Clin Nutr* 1-6. doi:10.1080/16070658.2019.1641271.
- [28] A.S.P.E.N. Board of Directors (2015) Definition of terms, style, and conventions used in A.S.P.E.N. Guidelines and Standards. *Nutrition in Clinical Practice*.
- [29] Chern CJH, Lee SD (2015) Malnutrition in hospitalized Asian seniors: an issue that calls for action. *J Clin Gerontol Geriatr* 6(3), 73-77. <https://doi.org/10.1016/j.jcgg.2015.02.007>.
- [30] Sakinah H, Tan SL (2012). Validity of a local nutritional screening tool in hospitalized Malaysian elderly patients. *J Environ Health* 3(3), 59-65.
- [31]

