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Original Research Article

Assessment of nutritional status of elderly in rural field practice area of Jhalawar medical college, Jhalawar, India

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ABSTRACT

Background: Worldwide, the population of elderly people is constantly increasing. Elderly population is at risk of under nutrition due to age related physical, cognitive, functional decline and lack of financial support. Malnutrition contributes to decline in health status, increased utilization of healthcare services and increased mortality. Aim of this study was to assess nutritional status of the elderly by MNA and to find association between nutritional status and socio- demographic profile of elderly.
Methods: After ethical approval, a community based cross sectional study was conducted among elderly people residing at Mandawar village, rural field practice area of JMC, Jhalawar during August to October 2022. Complete enumeration technique was used to enrolled participants in study. Door to door household survey was conducted using predesigned questionnaire. Nutritional status was assessed by using standard mini nutritional assessment questionnaire. The data was analyzed through SPSS28.0 (trail version).
Results: Out of 287 elderlies, 139 (48.4%) were male and 148 (51.6%) were female. According to MNA, 73 (25.4%) were found malnourished while 119 (41.4%) were at risk of malnutrition and 95 (33.1%) were well nourished. A statistically significant ($p<0.05$) association was found between nutritional status with increasing age, gender, marital status, education, occupation, morbidity, financial dependance and substance abuse.
Conclusions: This study showed that malnutrition has multidimensional background. So, to improve nutritional status of elderly approach should be focus on those who are older, illiterate or low educational status, female gender and financially dependance.

Keywords: Community, Elderly, Mini nutritional assessment, Nutritional status

INTRODUCTION

Ageing is a natural process. In the world of Seneca; "Old age is an incurable disease", but more recently, Sir James Ross commented: "You do not heal old age. You protect it; you promote it; you extend it." Old age cannot be universally defined because it is context-sensitive. The United Nations considers old age to be 60 years or older.[1] Worldwide, the population of elderly people is constantly increasing. According to the United Nations, in 2025, it is estimated that the population aged 60 years or older will be 1.2 billion and 2 billion in 2050 (representing about 22% of the world population).[2] India's elderly population is also growing rapidly and accounted for 8.1% of total population in 2011.[3] Elderly population is at risk of under nutrition due to age related physical, cognitive, functional decline and lack of financial support. Malnutrition contributes to decline in health status, increased utilization of health-care services, and increased mortality.[4] The potential risk factors of malnutrition are multiple: reduced food intake due to loss of appetite,

frequently fasting, poor dentition, chewing difficulties, inability to eat independently, digestive related problems, chronic illness and depression.[5,6] The prevalence of malnutrition among the elderly in India is not very well known.[7,8] There is a deficiency of community-based studies to assess nutrition status among elderly. India's nutritional intervention programs are usually directed toward children, pregnant and lactating mothers, and elderly are usually neglected.[7] Therefore, our study is planned among elderly with aim of find out nutritional status of elderly. Aim was to assess nutritional status of the elderly by using mini nutritional assessment.

METHODS

This was community based cross sectional study conducted at Mandawar village, rural field practice area, Jhalawar Medical College, Jhalawar from August to October 2022 after institutional ethical committee permission. Study population was all elderly population residing in study area.

Inclusion criteria

Age ≥60 years, permanent residents (≥5 years), who written informed consent were included.

Exclusion criteria

Not willing and not given consent to participate in the study, critically ill, person who were not available after 2 visits for study were excluded.

Sample size

The total population of elderly people in Mandawar village is 315 according to Panchayat record resister. Out of 315 elderly people 287 were included in this study, 9 people were critically ill, 14 was not willing to participate and 4 persons not available after 2 visits for study. So, our final sample size was 287.

Sample technique and data collection

Complete enumeration technique was used to enrolled participants in study. Door to door household survey was conducted using predesigned questionnaire. Data on sociodemographic characters, substance abuse and co-morbidity was recorded. Nutritional status was assessed by using standard mini nutritional assessment questionnaire.

Study tools

Study tools are mini nutritional assessment questionnaire (MNA), questionnaire on socio-demography and health.

Mini nutritional assessment

To assess nutritional status, the MNA questionnaire will be use. It is a validated screening tool to provide a single, rapid assessment of nutritional status among the elderly with a sensitivity of 96%, a specificity of 98%, and a predictive value of 97%.[9]

The MNA includes 18 items. The response of each item has a numerical value and contributes to the final score, which has a maximum value of 30. For the current study, nutritional status was classified as normal nutrition (24–30 points), at risk of malnutrition (17-23.5 points) and malnourished are below 17 points.[10]

Data entry and analysis

All data was collected through validated performa and entered in MS-Excel 2010. The data was analyzed through SPSS28.0 (trail version). Chi-square test was used to find association and P-value less than 0.05 was considered as significant.

RESULTS

A total 287 elderly (148 female and 139 male) after excluding 9 people were critically ill,14 was not willing to participate and 4 persons not available after 2 visits for study, were taken for study.

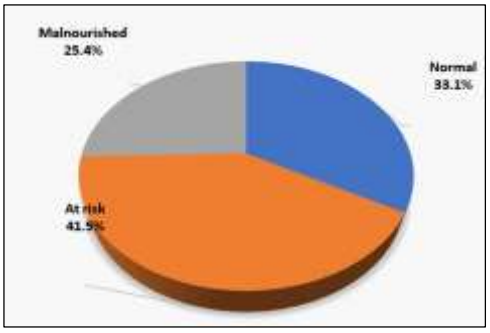

Figure 1: Nutritional status of elderly persons.

Figure 1 shows nutritional status of elderly people as determined by The MNA score. Out of 287 elderly 25.4% (73) were found malnourished, 41.4% (119) were at risk of malnutrition and 33.1% (95) found well nourished. Among different parameters, a statistically significant (P<0.05) association was found between nutritional status and age (p=0.001), gender (p=0.025), marital status (p=0.020), education (p=0.020), occupation (p=0.0001), morbidity (p=0.0001), financial dependence (p=0.0001) and substance abuse (p=0.016). There was no statistically significant (P>0.05) association was found between nutrition status and religion (p=0.737), category (p=0.273) and family type (p=0.118) in this study (Table 1).

Table 1: Association between nutritional status and socio-demography factors.

Factors		Nutritional status according to MNA scores				
		Normal	At risk	Malnourished	Total	P value
Age groups (years)	60-74	89 (38.7)	91 (39.6)	50 (21.7)	230 (100.0)	0.001*
	75-84	5 (15.2)	15 (45.5)	13 (39.4)	33 (100.0)	
	>84	1 (4.2)	13 (54.2)	10 (41.7)	24 (100.0)	
Gender	Male	56 (40.3)	55 (39.6)	28 (20.1)	139 (100.0)	0.025*
	Female	39 (26.4)	64 (43.2)	45 (30.4)	148 (100.0)	
Marital status	Married	70 (34.1)	92 (44.9)	43 (21.0)	205 (100.0)	0.020*
	Widow/divorced/widow ER	25 (30.5)	27 (32.9)	30 (36.6)	82 (100.0)	
Education	Illiterate	59 (28.4)	91 (43.8)	58 (27.9)	208 (100.0)	0.020*
	Literate	36 (45.6)	28 (35.4)	15 (19.0)	79 (100.0)	
Occupation	Nonworking	48 (23.4)	97 (47.3)	60 (29.3)	205 (100.0)	0.0001*
	Working	42 (56.0)	20 (26.7)	13 (17.3)	75 (100.0)	
	Pensioner	5 (71.4)	2 (28.6)	0 (0)	7 (100.0)	
Morbidity at least one	Yes	35 (20.6)	82 (48.2)	53 (31.2)	170 (100.0	0.0001*
	No	60 (51.3)	37 (31.7)	20 (17.0)	117 (100.0)	
Financial dependence	Dependent	49 (23.9)	97 (47.3)	59 (28.8)	205 (100.0)	0.0001*
	Independent	46 (56.1)	22 (26.8)	14 (17.1)	82 (100.0)	
Substance abuse	Yes	42 (26.4)	69 (43.3)	48 (30.2)	159 (100.0)	0.016*
	No	53 (41.4)	50 (39.0)	25 (19.6)	128 (100.0)	
Religion	Hindu	78 (33.2)	94 (40.0)	63 (26.8)	235 (100.0)	0.737
	Muslim	13 (32.5)	20 (50.0)	7 (17.5)	40 (100.0)	
	Jain	4 (33.3)	5 (41.7)	3 (25.0)	12 (100.0)	
Category	General	7 (38.9)	5 (27.8)	6 (33.3)	18 (100.0)	0.273
	OBC	74 (35.4)	89 (42.6)	46 (22.0)	209 (100.0)	
	ST	1 (14.3)	2 (28.6)	4 (57.1)	7 (100.0)	
	SC	12 (25.5)	21 (44.7)	14 (29.8)	47 (100.0)	
	SBC	1 (16.7)	2 (33.3)	3 (50.0)	6 (100.0)	
Family	Nuclear	29 (42.6)	28 (41.2)	11 (16.2)	68 (100.0)	0.118
	Joint	44 (33.3)	54 (41.0)	34 (25.7)	132 (100.0)	
	Three generation	22 (25.3)	37 (42.5)	28 (32.2)	87 (100.0)	

DISCUSSION

This study revealed that 25.4% of elderly were malnourished and 41.5% were at risk of malnutrition according to the MNA scoring. A study done by Kritika et al in Doiwala block, Dehradun showed that 20.8% of elderly were malnourished and 43.7% were at risk according to MNA scoring which results were about similar to our study.[11] Study done by Vedantam et al in rural Tamil Nadu found that 14% of elderly were malnourished and study by Baweja et al in Western Rajasthan showed 7.1% of elderly were malnourished which was lower prevalence of malnutrition than this study.[12,13] Study of Rashmi et al in Guwahati, Assam revealed that prevalence of malnutrition among elderly was 15%.[7] Higher prevalence malnutrition (49.3%) found in study of Kriti et al in Delhi.[14] The difference in prevalence of malnutrition among elderly could be due to different socio-demographic profile of study participants in these various study settings. A significant association was observed between nutritional status and age. Because in old age, person become less active, decrease appetite or due to illness reduce food intake. A similar observation was also found in study done by Baweja et al in Western Rajasthan.[13] A significant association also seen between nutritional status and gender in this study as female are more malnourished as compare to male. This could be due to attributed to role of women in society and financial dependency. Similar association was also observed by Joymati et al in Manipur.[15] In this study we found significant association between nutritional status and marital status. High prevalence of malnutrition was observed among widow/divorced/widower as compare to currently married person. Similar association was observed by Joymati et al in Manipur.[15] In this study prevalence of malnutrition was higher among illiterate than literate persons. Similar finding was also observed in different studies.[7,11,14,15] This could be because literate person may have better awareness regarding food and healthy lifestyle. This study highlights financially independent person has better health status than

dependent person which was similar finding observed in many studies.[7,11,14,15] This could be because nutritious food intake depends on purchasing power of person. A significant association seen between nutritional status and occupation in this study similar as study of Kriti et al in Delhi and by Joymati et al in Manipur.[14,15] A significant association seen between nutritional status and morbidity similar result as study done by Kritika et al in Doiwala block, Dehradun.[11] No significant association seen in this study between nutritional status and religion and family type as similar finding revealed in study of Kriti et al in Delhi.[14]

This study has few limitations. This study was done in only one village and sample size was not large enough so results may not be necessarily generalized.

CONCLUSION

The prevalence of malnutrition and at risk of malnutrition in this study was 25.45% and 41.5%. This study showed that malnutrition has multidimensional background. So, to improve nutritional status of elderly approach should be focus on those who are older, illiterate or low educational status, female gender and financially dependance. It is necessary to create awareness among elderly and their caretaker about the quality, quantity and frequency of food intake of elderly and Geriatric clinics may stablished at PHC level.

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Ethical approval: The study was approved by the Institutional Ethic Committee of Jhalawar Medical College (JMC), Jhalawar, Rajasthan, India

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