

## Research Article

# Nutritional status of senior citizens living in old age homes of Kathmandu metropolitan municipality

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### ABSTRACT

**Background:** Health and nutrition needs of elderly population are often ignored and unidentified. Older adults population are continuously at risk for malnutrition due to physiological, psychological, social, dietary and environmental risk factors. Assessing nutritional status in the senior citizen is critical in determining their health status. The study presents the nutritional status and the associated factors of the senior citizens living in old age homes of Kathmandu metropolitan municipality, Nepal.

**Methods:** A descriptive cross sectional study was conducted. Total of 237 senior citizens (Above 60 years) of both sexes living at old age homes of Kathmandu valley were assessed for their nutritional status using mini nutrition assessment screening tool.

**Results:** The prevalence of malnutrition among the senior citizens living in old age homes of Kathmandu municipality was found to be 15.5% and those at risk of malnutrition was 61%. Lifestyle related factors such as smoking, alcohol consumption, sedentary lifestyle and presence of co-morbidities (diabetes and hypertension) and taking multiple medications were found to be the factors affecting the nutritional status of senior citizen. Significant association was seen between nutritional status and age ( $p=0.007$  and  $p=0.000$ ), ethnicity ( $p=0.020$ ) and duration of stay in the old age homes ( $p=0.037$ ). The proportion of malnourished however was found higher among males as compared to females and also found to be higher among illiterates.

**Conclusions:** There is a greater risk of malnutrition among the elderly population living in old age homes, which seems to be worsening with the advancing age.

**Keywords:** Senior citizen, Nutritional status, Malnutrition, Old age homes, Mini nutritional assessment

### INTRODUCTION

The ageing population is expanding apace through-out the globe with estimates that people age over 60 years and older constitute 12% of global population. The proportion of this age group is expected to double (22%) by 2050.<sup>1,2</sup> Currently, 125 million people are aged 80 years or older and two third of this population live in low and middle- income countries.<sup>1,3</sup> Developing world is expected to face more burdens of elderly population in

future due to higher elderly population growth rate as compared to industrialized nations.<sup>1,4,5</sup> In Nepal, the Central Bureau of Statistics (2011) reported that the percentage of population aged 60 years and above increased from 5.0% during 1952-54, 5.8% in 1991, 6.5% during 2001 to 8.1% in 2011 accounting for an increase of nearly 2.46 millions old age population in Nepal. The life expectancy at birth for Nepalese female and male is 67.4 years and 64.94 years respectively.<sup>6</sup> In such circumstances, elderly homes and religious sites are the major destinations for senior citizens out of their family

during the old age.<sup>7,8</sup> However, only about total of 1500 elderly people across the country have been benefiting from elderly homes.<sup>9</sup>

As the number of older people continues to accelerate, provision of better-quality healthcare to the elderly is crucial.<sup>1,10</sup> With the age advances there is increased morbidity and functional loss.<sup>11,12</sup> Aging may ensue with accretion of diseases and impairments, including cognitive and physical decline, depressive symptoms and emotional changes, all of which may directly affect the balance between nutritional needs and intake.<sup>12,13</sup> Poor nutrition among elderly is not merely the results of old age and aging process; older adults are at risk for malnutrition due to physiological, psychological, social, dietary, and environmental risk factors.<sup>14-16</sup> More often the focus of nutrition in older adults is a healthy diet and physical activity to minimize the risk of developing lifestyle diseases.<sup>17,18</sup> However, there is an ample of evidences to suggest that protein-energy malnutrition (PEM) is a common nutritional problem in elderly population.<sup>10</sup> Malnutrition in elder population is mostly associated with complications and premature death.<sup>13,14,16</sup> The progression to malnutrition is often insidious and covert.<sup>14</sup> Malnutrition plays vice-versa role (both cause and effects) of illness.<sup>15</sup> In addition, many factors appears to contribute the nutritional condition evidenced with aging.<sup>1,16</sup> Physical or physiologic problems related to chewing, digestion and absorption of food, lack of appetite, smoking, alcohol consumption and excessive use of medication and also lifestyle, hormonal changes and diseases play a role in malnutrition.<sup>16,17</sup> Poor nutritional status among elder people related to increased morbidity and mortality.<sup>16,17</sup> Also, nutritional status is related to the overall quality of life and health.<sup>19</sup>

Assessing nutritional status in the elderly population is critical in determining health status.<sup>20</sup> The mini nutritional assessment (MNA) is a practical, non-invasive technique for rapidly evaluating potential risk of malnutrition in the elderly.<sup>21,22</sup> This instrument has received recognition as a suitable screening tool and has been validated to a limited degree in various samples of elderly persons from around the world.<sup>20</sup> The MNA consists of 18 questions derived from four parameters of assessment. The sum of the MNA score distinguishes between the following groups of elderly patients:

- Those with adequate nutritional status: MNA  $\geq$ 24.
- Those at risk of malnutrition: MNA between 17 and 23.5.
- Those with frank malnutrition: MNA  $<$ 17. 23.

There is a paucity of evidences in the area of nutritional and health of elderly population in Nepalese context.<sup>7,24</sup> The changing demography trends in Nepal explicitly demands evidences to address elderly health and nutritional issues.<sup>25,26</sup> It is obvious that the identification of nutritional status and related factors allows interventions directed to the actual needs of the elderly

population aimed at healthy ageing and quality of life for all.<sup>1,20</sup> In this context, the present study aims to assess the nutritional status of elderly people living in old age homes and also examines the association between their nutritional status and selected socio-demographic variables.

## METHODS

This is a descriptive cross-sectional study conducted at old age homes of Kathmandu metropolitan city. The old age homes of Kathmandu municipality operating under Ministry of Women Children and Social Welfare of Nepal government were selected purposively and census method was applied to select the participants of study. The five selected functional old age homes were namely Social Welfare Centre Elderly's Home, Pashupatinath, Nisahaya Sewa Sadan, Aamako Ghar, Janakbaba Ashrit Mandir and Jayanti Ashram Pepsi Cola. There were respectively 230, 41, 28, 10 and 6 elderly individual staying at selected old age homes during the time of study. Only the elderly above 60 years of age were included in the study. According to Nepalese law above 60 years of age elderly individuals are considered to be senior citizen.<sup>7,8</sup> Altogether 315 elderly individuals were staying at the selected old age homes however; only 213 elderly individual (Above 60 years) were included in the study considering the inclusion criteria of study. Senior citizens with cognitive impairment were not included in the study. The study was conducted in between September 2015 to December 2015. The data were collected using the interview method and anthropometric measurements. Semi- structured questionnaire was used to gather socio-demographic characteristics, lifestyle and physical health condition of participants. The screening tool mini nutritional assessment (MNA) was used to gather information on the nutritional status of study participants. The pretesting of questionnaire was carried out at Divine Service Home, Golfutar and Matatirtha Briddhaashram, Matatirtha at local small-scale old age home in Kathmandu. The collected data were analyzed using SPSS vs. 16 and Ms-Excel 2007. Bivariate analysis was done using chi-square test to find the association between the selected variables. Ethical approval was taken from institutional ethical committee of National Open College, Pokhara University. Written consent from old age homes and verbal consent from all the participants was taken prior to interview and assessment. None of the participants were forced to participate and confidentiality of the information gathered was assured.

## RESULTS

### *Socio-demographic characteristics of the respondents*

Table 1 shows the distribution of respondents according to their socio-demographic characteristics. With the mean age of 77.16 years  $\pm$ 8.70 SD, 16.6% were young olds, 40% were middle olds while 43.4% were very olds.

Out of total 213 participants, female participants were dominant with 72.3% while male participants comprised of only 27.7%. The mean duration of stay in the old age

homes was 5.68 years $\pm$ 4.92 SD. Those who were staying for five years or less were 59.4% while those staying more than five years were 40.6%.

**Table 1: Distribution of respondents according to the socio-demographic characteristics.**

Variables	Frequency (n)	Percentage (%)	Mean $\pm$ S.D	
Age (years)	205			
Young old (60-69)	34	16.6	77.16 $\pm$ 8.70	
Middle old (69-79)	82	40.0		
Very old (Above 80)	89	43.4		
Sex	213			
Male	59	27.7	-	
Female	154	72.3		
Religion	211			
Hindu	205	97.2	-	
Buddhists	5	2.4		
Christian	1	0.5		
Ethnicity	211			
Brahmin/Chhetri	134	63.5	-	
Newar	50	23.7		
Gurung/Magar	8	3.8		
Tamang	7	3.3		
Thakuri	5	2.3		
Rai/Lama	5	2.3		
Nepali	2	0.9		
Marital status	209			
Single	25	12.0		-
Married	35	16.7		
Widow/widower	122	58.4		
Separated	24	11.5		
Divorced	3	1.4		
Educational status	213			
Illiterate	167	78.4	-	
Literate	30	14.1		
Primary level	4	1.9		
Secondary level	11	5.2		
Higher studies	1	0.5		
Past occupation	211			
Unemployed	5	2.4	-	
Housewife	70	33.2		
Agriculture	90	42.7		
Labor	17	8.1		
Service	14	6.6		
Business	15	7.1		
Duration of stay at old age homes	202			
5 years or less	120	59.4	5.68 $\pm$ 4.92	
More than 5 years	82	40.6		

#### *Lifestyle and physical health status of the respondents*

Table 2 shows that the majority of the respondents 67.1% were non-smokers, 19.7% were smokers, while 13.1% were ex-smokers.

Similarly, 95.3% didn't drink alcohol while 4.2% drank occasionally. Those who spent time sitting for 4 to 6

hours were maximum (46.2%), for less than 4 hours were 29.2% and those sitting for more than 6 hours were 24.5%. 39.9% were hypertensive, only 9.9% were diabetic and 20.7% had respiratory diseases (Asthma (65.9%) and COPD (31.8%)). Those suffering from arthritis were 11.3% only. Maximum respondents (92.5%) took 0-3 prescribed medicines and 7.5% took 4 or more medicines as prescribed by the doctor.

**Table 1: Lifestyle and physical health status of the respondents.**

	Frequency (n)	Percentage (%)
<b>Smoking status</b>	213	
Non smoker	143	67.1
Smoker	42	19.7
Ex-smoker	28	13.1
<b>Alcohol consumption</b>	213	
No	203	95.3
Occasionally	9	4.2
Everyday	1	0.5
<b>Sedentary lifestyle</b>	212	
<4 hours	62	29.2
≥4 hours and <6 hours	98	46.2
>6 hours	52	24.5
<b>Hypertension</b>	213	
Yes	85	39.9
No	128	60.1
<b>Diabetes</b>	213	
Yes	21	9.9
No	192	90.1
<b>Respiratory diseases</b>	213	
Yes	44	20.7
Asthma	29	65.9
COPD	14	31.8
No	169	79.3
<b>Arthritis</b>	213	
Yes	24	11.3
No	189	88.7
<b>Prescribed medications</b>	213	
0-3	197	92.5
4 or more	16	7.5

*Nutritional status of respondents according to the MNA*

Table 3 represents the nutritional status of the respondents as per the MNA scores. 23.5% had normal nutritional status i.e. MNA score of 24 to 30 points. 61% were at risk of malnutrition since their MNA score were between 17 to 23 points, while 15.5% of the respondents were malnourished with MNA scores less than 17 points.

*Nutritional status of respondents according to the lifestyle and physical health status*

The higher proportion of malnourished individuals was found among the smokers (26.2%) as compared to non-smokers and ex-smokers. Likewise, those at risk of malnutrition and those malnourished were seen in higher proportion among those who drank alcohol occasionally or everyday. It was also observed that the proportion of malnourishment was seen higher among respondents who had negative physical health conditions such as

hypertension and diabetes. Malnourishment among hypertension and diabetics patient were found to be 18.8% and 19% respectively. However, those who did not have respiratory diseases or arthritis seemed to have higher proportion of malnourished respondents and those at risk of malnutrition, than those who had the conditions. It can also be seen that the proportion of those malnourished and at risk of malnutrition was higher (68.8% and 18.8%) among those who took 4 or more prescribed medications.

**Table 2: Nutritional status of the respondents according to MNA score.**

Nutritional status (N=213)	Frequency (n)	Percentage (%)
Normal	50	23.5
At risk of malnutrition	130	61
Malnourished	33	15.5

*Association between age and nutritional status*

There were 100 respondents belonging to age group 60 to 77 years. Among them 33% had normal nutritional status, 59% were at risk of malnutrition while 8% were malnourished. Likewise in the age group 77 years and above 14.3% were normal, 35.7% were at risk of malnutrition and 20% were malnourished. There is significant association between age and nutritional status of the respondents ( $p=0.007$  and  $p=0.000$ ), with  $or\ 2.573$  and  $5.775$ . The nutritional status seems to be getting poor with advancing age.

*Association between sex and nutritional status*

Out of 54 male respondents 67.8% were at risk of malnutrition while 16.9% were malnourished. Whereas among 159 female respondents 58.4% were at risk of malnutrition and 14.9% were malnourished. Malnutrition was found slightly higher in males than in females. There seems to be no statistical significance between sex and nutritional status of the respondents ( $p=0.085$  and  $p=0.192$ ).

*Association between ethnicity and nutritional status*

A higher proportion of malnourished respondents can be seen among Brahmin/ Chhetri (20.1%) than among other castes. Also, higher proportions (64.9%) of those at risk of malnutrition were seen among the respondents of other castes than Brahmin/ Chhetri. Statistically significant association between ethnicity and malnourished nutritional status can be seen with  $p$ -value 0.020.

*Association between educational status and nutritional status*

The nutritional status was poorer among the respondents who were illiterate (at risk of malnutrition (62.3%) and

malnourished (16.8%)) than those who were literate (at risk of malnutrition (56.5%) and malnourished (2.3%)). No statistically significant association was observed

between educational status and nutritional status of the respondents.

**Table 3: Nutritional status of respondents according to the lifestyle and physical health status of the respondents.**

Variables	Nutritional status		
	Normal n (%)	At risk of malnutrition n (%)	Malnourished n (%)
<b>1. Lifestyle</b>			
<b>Smoking status</b>			
Non-smoker	34 (23.8%)	91 (63.6%)	18 (12.6%)
Smoker	8 (19%)	23 (54.8%)	11 (26.2%)
Ex-smoker	8 (28.6%)	16 (57.1%)	4 (14.3%)
<b>Alcohol consumption</b>			
No	50 (24.6%)	122 (60.1%)	31 (15.3%)
Occasionally	0 (0%)	8 (88.9%)	1 (11.1%)
Everyday	0 (0%)	0 (0%)	1 (100%)
<b>Spent sitting</b>			
< 4 hours	15 (24.2%)	36 (58.1%)	11 (17.7%)
4 hours to 6 hours	27 (27.6%)	58 (59.2%)	13 (13.3%)
> 6 hours	8 (15.4%)	36 (69.2%)	8 (15.4%)
<b>2. Physical Health Status</b>			
<b>Hypertension</b>			
Yes	21 (24.7%)	48 (56.5%)	16 (18.8%)
No	29 (22.7%)	82 (64.1%)	17 (13.3%)
<b>Diabetes</b>			
Yes	7 (33.3%)	10 (47.6%)	4 (19%)
No	43 (22.4%)	120 (62.5%)	29 (15.1%)
<b>Respiratory diseases</b>			
Yes	13 (29.5%)	25 (56.8%)	6 (13.6%)
No	37 (21.9%)	105 (62.1%)	27 (16%)
<b>Arthritis</b>			
Yes	8 (33.3%)	13 (54.2%)	3 (12.5%)
No	42 (22.2%)	117 (61.9%)	30 (15.9%)
<b>Prescribed medication</b>			
0-3	48 (24.4%)	119 (60.4%)	30 (15.2%)
4 or more	2 (12.5%)	11 (68.8%)	3 (18.8%)

**Table 4: Association between age and nutritional status of the respondents.**

Age category (n=205)	Nutritional status of the respondents				
	Normal n (%)	At risk of malnutrition n (%)	p- value	Malnourished n (%)	P-value
60 to 77 years	33 (33%)	59 (59%)	0.007	8 (8%)	0.000
77 years and above	15 (14.3%)	69 (35.7%)		21 (20%)	
		$\chi^2 = 7.182$ , d.f. = 1, OR = 2.573, 95% CI (1.275-5.193)			$\chi^2 = 12.305$ , d.f. = 1, OR = 5.775, 95% CI (2.087-15.978)

**Table 5: Association between sex and nutritional status of the respondents.**

Sex (n=213)	Nutritional status of the respondents				
	Normal n (%)	At risk of malnutrition n (%)	p-value	Malnourished n (%)	p-value
Male	9 (15.3%)	40 (67.8%)	0.085	10 (16.9%)	0.192
Female	41 (26.6%)	90 (58.4%)		23 (14.9%)	
				$\chi^2 = 2.972$ , d.f.=1	$\chi^2 = 1.705$ , d.f. = 1

**Table 6: Association between ethnicity and nutritional status of the respondents.**

Ethnicity (n=211)	Nutritional status of the respondents					
	Normal n (%)	At risk of malnutrition n (%)	p-value	Malnourished n (%)	p-value	Total n (%)
Brahmin/Chhetri	28 (20.9%)	79 (59%)	0.618	27 (20.1%)	0.020	134 (63.5%)
*Other castes	21 (27.3%)	50 (64.9%)		6 (7.8%)		77 (36.5%)
$\chi^2 = 0.249$ , d.f. = 1				$\chi^2 = 5.437$ , d.f. = 1 OR= 0.296, 95% CI (0.104-0.847)		

\*Other castes included Newars, Gurung, Magar, Tamang, Tharu, Thakuri, Rai/Lama and Nepali

**Table 8: Association between educational status and nutritional status of the respondents.**

Educational status (n= 213)	Nutritional status of the respondents					
	Normal n (%)	At risk of malnutrition n (%)	p-value	Malnourished n (%)	p-value	Total n (%)
Illiterate	35 (21%)	104 (62.3%)	0.152	28 (16.8%)	0.122	167 (78.4%)
*Literate	15 (32.6%)	26 (56.5%)		5 (2.3%)		46 (21.1%)
$\chi^2 = 2.053$ , d.f. = 1				$\chi^2 = 2.396$ , d.f. = 1		

\*Literate included educational status from simple literate (able to read and write) to formal higher studies

**Table 9: Association of duration of stay in the old age homes and nutritional status of the respondents.**

Duration of stay (n= 202)	Nutritional status of the respondents					
	Normal n (%)	At risk of malnutrition n (%)	p-value	Malnourished n (%)	p	Total n (%)
5 years or less	33 (27.5%)	73 (60.8%)	0.255	14 (11.7%)	0.037	120 (59.4%)
More than 5 years	15 (18.3%)	50 (61%)		17 (20.7%)		82 (40.6%)
$\chi^2 = 1.295$ , d.f. = 1				$\chi^2 = 4.349$ , d.f. = 1 OR= 2.671, 95% CI (1.050-6.800)		

#### Association between duration of stay in the old age home and nutritional status

Among the respondents who had stayed in the old age homes for 5 years or less, the proportion of those at risk of malnutrition was found to be 60.8% and those malnourished were 11.7%; and it was 61% and 20.7% among those who stayed in the old age homes for more than 5 years. It was found that the nutritional status was poorer with increasing duration of stay in the old age homes. A statistically significant association was observed between duration of stay in the old age homes and malnourished nutritional status ( $p=0.037$ ).

## DISCUSSION

Despite the inevitable serious consequences of malnutrition among elderly, prevention and treatment of malnutrition do not currently receive appropriate consideration. Increased awareness of the importance of nutritional screening among older people is needed.<sup>10,27</sup> The findings from this study shows co-morbidities existed among the respondents where 39.9% were hypertensive, 9.9% were diabetic and 20.7% had respiratory diseases (65.9%) and COPD (31.8%). Those

suffering from arthritis were 11.3%. Maximum respondents (92.5%) took 0 to 3 prescribed medications. The study showed that according to MNA 23.5% had normal nutritional status, 61% were at risk of malnutrition and 15.5% of the respondents were malnourished which was close to the findings of similar research conducted in pharpping of Nepal in (2012) by Lyons G. et al where 31% of elderly people were malnourished and 51% were at risk and a study conducted in Iran by Aliabadi M. et al, where, out of total population of 1962, 42.7% were well nourished, 45.3% at risk of malnutrition and 12.0% malnourished.<sup>28,29</sup> Similar institution based study also indicates that the prevalence of malnutrition ranges from 5-10% in free-living elderly to 30-85% in homebound, nursing home, and hospitalized elderly.<sup>21,30</sup>

Additionally, many factors appear to contribute to the nutritional condition evidenced with aging.<sup>31,32</sup> Smoking, alcohol consumption, lifestyle (sedentary behavior, physical inactivity, poor diet), hormonal changes, and diseases can contribute to malnourishment.<sup>31,33</sup> The study showed that higher proportion of malnourished individuals was found among the smokers (26.2%). Likewise, those at risk of malnutrition and malnourished

condition were also found to be higher among those who drank alcohol occasionally or every day and also the risk of malnutrition increased with the increase in the hours spent sitting per day. Similar result was demonstrated by the study conducted by Boscatto et al, where the association between smoking and nutritional status of old age was related to the multiple effects that smoking has on the thyroid gland and changing metabolic control was presented.<sup>33</sup>

In addition, Boscatto et al, study also presents higher number of malnutrition among those who drank alcohol more frequently and those who spent time sitting more than 6 hours. Furthermore, malnourishment was found among respondents who had negative physical health conditions such as suffering from hypertension (18.8%) and diabetes (19%). This result could be due to the predominance of protein-energy malnutrition that increases with age and the number of co-morbidities.<sup>10</sup> Likewise the study also reveals the proportion of those malnourished and at risk of malnutrition was higher (68.8% and 18.8%) among those who took 4 or more prescribed medications. This result is concurrent with the evidence that denotes the excessive use of medication has positive role in malnutrition presentation.<sup>33</sup>

Moreover, statistically significant association was observed between age of the respondents and nutritional status ( $p=0.007$  and  $0.000$ ) in the present study. It was explicitly found that poor nutritional status was linked with advancing age of respondents. Similar finding was also presented by studies Aliabadi et al, and Faraes D. et.al.<sup>29,34</sup> Results in underweight and malnutrition are also positively linked with the aging process and also accompanied by biological, physiological, and psychological alterations, such as oral cavity problems, decreased sense of smell and taste and reduced cognitive and functional capacity.<sup>34</sup>

In the present study, malnutrition was found higher among the males (16.9%) than in females (14.9%) with contrast to study by Aliabadi M. et al where malnutrition was more prevalent among the females. Similarly, positive association of sex with nutritional status was also observed in the Aliabadi M. et al study. Conversely, the present study shows no association between sex and malnutrition. The difference in finding was may be due to the difference in the status of free living (Iran) and institutionalized old age home (Kathmandu municipality). The study elucidated association of nutritional status with the ethnicity, and duration of stay in the old age homes ( $p=0.020$  and  $0.037$ ) and no association was found with respect to marital status, past occupation and educational status.

The study by Lyons et al and Khanal et al also showed that people within the lower social class groups were at greater risk of being malnourished.<sup>28,35</sup> This is probably because of social, cultural, educational and economic difference that affects nutritional status of individuals.<sup>35-37</sup>

Similarly, the other related studies also suggested that the prolonged stay in the institutions (geriatric rehabilitation center, old age care homes or hospitals) led to poorer nutritional status which is also similar to the findings of this study.<sup>13,38,39</sup> Therefore the screening and regular nutrition examinations are essential, since large number of malnourished individuals are unrecognized and untreated at old age homes.

## CONCLUSION

The overall prevalence of malnutrition among the senior citizens living in old age homes of Kathmandu municipality was found to be 15.5% and those at risk of malnutrition was 61%. Therefore, it is explicit that there is a greater risk of malnutrition among the elderly population living in old age homes, which seems to be worsening with the advancing age. The study also suggested that MNA could be an effective tool to identify the nutritional status of elderly population in the context of Nepal as well.

Lifestyle related factors such as smoking, alcohol consumption and sedentary lifestyle and presence of co-morbidities (diabetes and hypertension) and taking multiple medications were found to be the factors affecting the nutritional status. Significant association was found between nutritional status and socio-demographic variables such as age, ethnicity and duration of stay in the old age homes. The proportion of malnourished however was observed higher among males than females and also found higher among illiterates.

The evidences explicitly demand the need of regular monitoring the nutritional and health status of the senior citizens living in the old age homes. Early identification of the nutritional status can be commenced and necessary interventions can be taken in time to help prevent morbidity conditions due to poor nutritional status and improve the overall health of elderly population. Additionally, the following recommendations are drawn based on study findings:

- The respective institutions under study should arrange for nutritional screening and periodic health checkups to identify underlying co-morbidities by trained professionals. It is highly recommended to keep the track of their weight loss and gain.
- Those who are malnourished should be treated with nutrition intervention (Diet enhancement and oral nutritional supplementation. Their weight should also be closely monitored and further in-depth nutrition assessment should be done.
- They should also focus on the diet with necessary protein and calorie content, which are age appropriate with consideration for those with other morbid conditions.
- The medications of the senior citizens should also be kept track of.

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