A study of Chronic energy malnutrition among geriatric population residing in Old Age Homes in desert areas of Rajasthan

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ABSTRACT: Geriatric population living in Old Age Homes faces many nutritional, and psychological problems. The study aims to study extant of chronic energy malnutrition among geriatric population residing in Old Age Homes and associated factors. It is cross-sectional study conducted in 158 elderly population living in Old Age Homes of Jodhpur and Pali. Analysis revealed that 50 percent were males whereas 33.5 percent belongs to 60 to 70 years age group and 66.5 percent in 70 years and above. Majority belongs to General caste (66.5%) and 37.3 percent were widow. Chronic Energy Deficiency based on BMI (CED) is significantly high 14.7%. Analysis of Mini Nutritional Assessment revealed that percentage of elderly in 'Malnutrition' & 'At risk of Malnutrition' is significantly high (12 & 43%) which may be due to income, socio-psychological problems in addition to factor of ageing too. Results will help in addressing the issues of malnutrition among geriatric population.

Key Words: Geriatric, Old Age Homes, Malnutrition, BMI

Introduction:
Ageing is a developmental process which is, beginning and ending with death. Old age is defined as age of retirement, for it is at time that combined effect of ageing, social changes and diseases are likely to cause a breakdown in a health. Old age comes with lot of ailment and diseases. Older persons are particularly vulnerable to malnutrition. Moreover, attempts to provide them with adequate nutrition encounter many practical problems. Geriatric population needs other people to do things for them due to their reduced mobility and debilitating disabilities. With the increasing trend of nuclear families in the society, the care of older persons in the families gets increasingly difficult, in turn, sending them in Old Age Homes. There is also an increasing demand worldwide for WHO guidelines which competent national authorities can use to address the nutritional needs of their growing elderly populations. Other significant age-related changes include the loss of cognitive function and deteriorating vision, all of which hinder good health and dietary habits in old age (WHO, 2016). Geriatric population living in Old Age Homes faces many nutritional, social and psychological problems. With this background, present study aims to study the extant of chronic energy malnutrition among geriatric population residing in Old age Homes and their related factors.

Objective
1. To assess chronic energy malnutrition among geriatric population residing in Old age Homes
2. To study the Mini Nutritional Assessment among geriatric population residing in Old age Homes
3. To determine the socio-demographic factors associated with malnutrition among geriatric population residing in Old age Homes

Methodology
Study design: It is a cross-sectional study.

Sample size in urban areas calculated on the basis of least prevalence of co-morbidities viz. Diabetes, Hypertension, and CHD i.e. CHD-25%. Elderly individual below age of 60 years were not registered.

Exclusion criteria- Elderly individual below the age of 60 years were not registered for the study. The data has been collected from 158 elderly population living in Old Homes of Jodhpur and Pali District, desert areas of Rajasthan. All the subjects were examined for: Socio-Demographic profile, and Assessment of chronic energy malnutrition and MNA scale (Guigoz et al., 1996) which included questions regarding appetite, mobility, acute and chronic illness, medication history, dietary history, anthropometric measurements, self perception of nutritional status and health. All the anthropometric measurements (height, weight) were taken following standard techniques (Jellife, 1966 and WHO, 1983). Data on Socio-
demographic aspects, Nutritional aspects (MNA) and other data collected were computerized in Excel for statistical analysis. Statistical test of significance were applied as per feasibility. The ethical approval of the Study was taken from Ethics committee of Desert Medicine Research centre, Jodhpur.

Result and Discussion:
Analysis of 158 elderly population living in Old Age Homes of Jodhpur and Pali revealed that 50 percent were males whereas 33.5 percent belongs to 60 to 70 years age group and 66.5 percent in 70 years and above (Table 1). Hindus were 93.7% and majority belongs to General caste (66.5%). Analysis according to marital status showed that 22.8 percent were Married, 8.2 percent were Separated, 37.3 percent were widow, 26 percent were widower and 5.7 percent single in old age home. Analysis according to education revealed that 28 percent were Illiterate, 3.6 percent were literate, 9.2 percent were primary, 12.4 percent were middle, and 46.8 percent were in secondary and college category. The distribution of elderly population according to Monthly income in old age home revealed that 58.3 percent had monthly income less than Rs. 2,000 whereas, 6.3 percent were in 2,000-4,999 monthly income, 10.1 percent 5,000-9,999 monthly income, 25.3 percent were in 10,000 & above monthly income in old age home. The distribution of elderly population according to occupation revealed that 29.1 percent were pensioner and 58.9 percent were not working in Old Age Homes.

Table 1. Distribution of elderly population living in Old Age Homes according to Gender and age

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No %</td>
<td>No %</td>
<td>No %</td>
<td>No %</td>
</tr>
<tr>
<td>79 50</td>
<td>79 50</td>
<td>158 100</td>
<td></td>
</tr>
<tr>
<td>60 to 70 Years</td>
<td>70 years &amp; Above</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>No %</td>
<td>No %</td>
<td>No %</td>
<td>No %</td>
</tr>
<tr>
<td>53 33.5</td>
<td>105 66.5</td>
<td>158 100</td>
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</tr>
</tbody>
</table>

Chronic Energy Deficiency (CED) among elderly population living in old age homes of Jodhpur and Pali was calculated according to Body Mass Index (BMI). The analysis revealed that 34% have normal BMI i.e. 18.5 to 24.9, whereas 14.7% suffered from Chronic energy deficiency i.e. <18.5, 30.8% were overweight i.e. 25 to 30 and 20.5% were obese (Fig.1).

Analysis of Mini Nutritional Assessment revealed that the percentage of ‘Malnutrition’ & ‘At risk of Malnutrition’ is significantly high (12 & 43%) among geriatric population. The percentage of females observed to be significantly high (p<0.05) in ‘At risk of malnutrition’ (53.2%) in comparison to males (Fig.2). The study revealed that elderly population in higher age group i.e. 70 years and above suffered more from Malnutrition & At Risk of malnutrition in comparison to 60-70 years age (p<0.05). The distribution of elderly population according to income revealed that the percentage of elderly in ‘Well nourished nutrition’ were significantly higher in HIG (57.5%) than LIG (14.1%) (p<0.05). Malnutrition showed negative association with education.
In the present study, CED is significantly high and needs attention. Similar results have been reported earlier in a cross-sectional data generated by NNMB (1997-2002) indicated that CED increased from 16 percent in young males (20-44 yrs) to 29 percent among the 60-69 years age group and to nearly the 38 percent among 70 yr and above age group. Kansal et al (2015) conducted a cross-sectional study in elderly population of rural Belagavi reported that 44.70% were having BMI less than 19 and 14.70% were having BMI 19 to less than 21 and 25.4% males and 21% females were suffering from malnutrition and only 31% males and 35.3% females were well nourished. However, the association of gender and nutritional status of elderly was not found to be statistically significant (p = 0.735).

The percentage of ‘Malnutrition’ & ‘At risk of Malnutrition’ is significantly high (12 & 43%) among geriatric population of the present study whereas in literature another cross-sectional pilot survey n= 123 in Fineland by Soini et al (2005), reported that MNA results showed that 47% geriatric population were at risk of malnutrition. Wikby et al, 2006 conducted a study on nutritional status in elderly people admitted to community residential homes using a combination of anthropometry and serum protein measurements and by Mini Nutritional Assessment (MNA). The results showed that 32% of the residents in cohort 2 were assessed as protein-energy malnourished, compared with 38% in cohort1. Seong Ting Chang et al 2012 studied that women were significantly more vulnerable to both underweight and overweight. Most Malays (37.7%) had overweight and obesity problems whereas more Indians (22.5%) were posed to greater risk of underweight. There are very few studies available on specific interventional strategies in India which needs to be explored in this area.

**Conclusion:** The status of malnutrition and at risk of nutrition observed to be poor among elderly living in Old Age Homes which may be due to income, socio-psychological problems in addition to factor of ageing too. These results will help in addressing the issues of malnutrition among geriatric population living in Old Age Homes.

**References:**