



Original Research Article

A Cross Sectional Study on Assessment of Mini Nutritional Status and Depression Status among Elderly in the Villages of V. Kota Mandal, Chittoor District, A.P.

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ABSTRACT

Introduction: Malnutrition is common in older people and has serious adverse effects and one of the correctable causes is depression, hence current study was undertaken with the objective of assessment of nutritional status and its relation with depression among elderly in rural areas of southern India.

Materials & Methods: A Cross sectional study was done in the villages of V. Kota Mandal, Chittoor district of Andhra Pradesh, by applying multi stage random sampling technique. The study duration was for a period of six months. 10 among 34 villages were selected randomly and elderly people (60 yrs and above) who are residents since one year were included for the study. A pretested semi-structured questionnaire administered for sociodemographic information. Mini Nutritional Assessment (MNA) tool and Geriatric Depression Scale (GDS-15) were used to evaluate nutritional and depression status, respectively. Statistical analysis was performed using SPSS version 19.

Results & Conclusions: A total of 402 elderly people were interviewed. Among them 179 were males and 223 were females. Most of them (75.6%) of them belong to the age group of 60 – 70 yrs. 25(6.21%) subjects were malnourished and 216 (53.74%) were at risk of malnutrition. 36.06 were depressed. Among malnourished 11 were depressed and 87 were depressed among malnourished and at risk group respectively.

Key words: Elderly, nutritional status, depression, MNA, GDS.

INTRODUCTION

Older persons are particularly vulnerable to malnutrition. [1] The Being a multifactorial etiology malnutrition has severe consequences like decrease in functional status and consequently high dependency, an impaired quality of life as well as higher morbidity and mortality. [2]

Apart from various physiological, social, economical and religious causes, psychological causes like depression, loneliness and insecurity are considered as important reasons for increased risk of malnutrition. Among them depression is one of the most common and reversible causes of malnutrition in elderly. [3]

The relationship between nutrition and depression is complex. Depression has been associated with undernutrition, overnutrition, and deficits in specific food components and nutrients. Depression can cause altered nutrition or complicate nutritional issues that already exist. Patients who are compromised nutritionally are more prone to depression. Understanding factors that impact nutrition and depression may help doctors and other healthcare team members develop strategies to prevent these health problems and the ability to promote positive health outcomes and overall quality of life. [4]

Hence the current study was undertaken with the objective of assessment of nutritional status and its relation with depression among elderly in rural areas of southern India.

MATERIALS AND METHODS

A Cross sectional study was done in the villages of Venkatagiri Kota Mandal, Chittoor district of Andhra Pradesh, by applying multi stage random sampling technique. The study duration was for a period of six months (Jan-June 2014). Elderly persons aged 60yrs and above were selected by applying multistage random sampling technique. Among 34 villages in V. Kota Mandal 10 villages were selected randomly. In the 10 villages selected randomly, a house to house survey was conducted to identify elderly aged 60 yrs and above.

From the center of the village one street was selected randomly by currency note method. Only one side of the street was selected by tossing a coin. On one side of the street selected, households will be surveyed for elderly people. Only one elderly person from the household will be interviewed if more than one elderly person is available at single household. Informed consent was taken from each study participant.

Study tools included a pretested semi-structured questionnaire for collecting sociodemographic information, Mini Nutritional Assessment (MNA) tool and Geriatric Depression Score (GDS) were used to evaluate nutritional status and depression scores, respectively. Both questionnaire were translated into local language, the vernacular and was retranslated into English.

The MNA is a well validated assessment and screening tool that can be used in elderly subjects to identify malnourished patients and those at risk of malnutrition. [5,6] Based on final scores, patients will classify into three groups: at risk of malnutrition (score 8-11), malnourished (score 0-7), and well nourished (score 12-14). [7]

For screening of the elderly patients at risk of depression, the GDS questionnaire was used. This tool has been validated in Iran. [8] Scores of 0-4 were considered normal; 5-8 indicated mild depression; 9-11 moderate depression and 12-15 severe depression. [9]

RESULTS

Table 1: Socio demographic variables of study subjects.

Age groups (in yrs)	No.	Percentage
60-70	304	75.6
71-80	72	17.9
>80	26	6.4
Gender		
Male	179	44.5
Female	223	55.4
Religion		
Hindu	345	85.8
Muslim	38	9.4
Christian	19	4.7
Educational status		
Illiterate	127	31.5
Primary	64	15.9
Higher secondary	200	49.7
Degree & above	11	2.7
Socioeconomic status		
Lower	99	24.7
Upper lower	158	39.4
Lower middle	108	26.8
Upper middle	29	7.2
Upper	11	2.9
Occupation		
Working	260	64.67
Not working	142	35.33

Socio demographic profile: A total of 402 elderly persons were included in the study. The mean (\pm SD) age was 67.60 \pm 7.6 and 55.4% of the subjects were women. Majority of them were belonged Hindu religion followed by Muslim and Christian. Almost thirty percent were illiterates and 24.6% subjects were belonged to lower socio economic status according modified BG Prasad classification. [10] one third of the elderly was not working and was dependent on family members.

Geriatric Depression Scale Scoring: As shown in Table 2, according GDS score, 36.06% of the subjects were depressed. Although the percentages of people at risk of depression were higher in females than in males (38.11% vs. 33.5%) it was not found to be statistically significant. There was a significant difference between depression scores in elderly with increasing age, lower literacy status and those who are not working but staying in home (Table 3).

Table 2: Distribution of elderly persons according GDS and MNA Scores.

GDS Score	No.	%
Normal	257	63.93
Mild/moderate	70	17.41
Severe	75	18.65
MNA Score	No.	%
Well nourished	161	40.05
At risk of malnutrition	216	53.74
Malnutrition	25	6.21

Mini Nutritional Assessment: As shown in Table 2, only 40.05% of the subjects were well nourished. 6.21% of the subjects were malnourished and 53.74% were at risk of malnutrition. In our study we observed that there was a significant association between malnutrition and at risk of malnutrition with increasing age, lower literacy levels (Table 3). Although the percentages of people with malnutrition and those at risk of malnutrition were higher in females than in males (8.1% and 55.6% vs. 3.9% and 41.9% respectively), higher in those who are working than who are staying at home (6.5% and 55.4% vs. 5.7% and 50.7% respectively) it was not found to be statistically significant.

Table 3: Relationship between depression and various sociodemographic variables.

Age (years)	Depression		χ^2	p value
	Present	Absent		
60-70	107	197	6.27	0.04
71-80	33	39		
>80	5	21		
Gender				
Male	60	119	0.9	0.34
Female	85	138		
Education				
Illiterate	30	97	19.9	0.00
Primary	35	29		
Higher Secondary	74	126		
Degree & more	6	5		
Occupation				
Working & earning	85	175	3.64	0.05
At home	60	82		

Table 4: Relationship between Nutritional status and sociodemographic variables.

Age group	Nutritional status (MNA)			X^2 17.5	p 0.02
	Malnourished	At risk of Malnutrition	Well Nourished		
60-70	13(4.3)	157(51.6)	134(44.1)		
71-80	8(11.1)	40(55.6)	24(33.3)		
>80	4(15.4)	19(73.1)	3(11.5)		
Gender					
Male	7(3.9)	92(51.4)	80(44.7)	4.8	0.89
Female	18(8.1)	124(55.6)	81(36.3)		
Education					
Illiterate	11(8.6)	55(43.3)	61(48.1)	13.97	0.03
Primary	6(9.4)	33(51.5)	25(39.1)		
Higher Secondary	8(4.0)	119(59.5)	73(36.5)		
Degree & more	0	9(81.8)	2(18.2)		
Occupation					
Working & earning	17(6.5)	144(55.4)	99(38.1)	1.21	0.54
At home	8(5.7)	72(50.7)	62(43.6)		

Relationship between GDS and MNA: out of the total 402 subjects studied, 36.06% were depressed and 6.21% and 53.74% were malnourished or at risk of malnutrition respectively. The prevalence of malnutrition and at risk of malnutrition was 7.7% and 61.4% respectively among depressed group, whereas the prevalence of malnutrition and

at risk of malnutrition in non depressed population were 5.7% and 49.6% respectively (Table 5).we conclude from study that there is a significant statistical difference between the prevalence of malnutrition in depressed and non-depressed individuals ($P= 0.02$).

Table 5: Association between Depression and nutritional status based on MNA Scores.

Depression	Malnutrition			Total	X ²	p
	Malnourished N (%)	At Risk of Malnutrition N (%)	Well Nourished N (%)			
Absent	15(5.7)	129(49.6)	116(44.6)	260	7.16	0.02
Present	11(7.7)	87(61.4)	44(31.0)	142		
Total	25(6.21)	216(53.74)	161(40.05)	402		

DISCUSSION

The number of older adults continues to increase in all healthcare settings. The majority of older adults are living in the community. Most are dealing with at least one chronic physical illness or mental health concern. Nutritional status and depression, key indicators of overall health, have a complex and interdependent relationship.

In older adults with depression, malnutrition including vitamin and/or mineral deficiencies is common. [11] Weight loss and anorexia have multiple physical and psychological causes in older adults and depression is one important psychological cause.

The main intention of this study was to determine the prevalence of malnutrition and depression in elderly people and their relationship with each other based on MNA and GDS, and also with some socio demographic factors. Being a simple, noninvasive, well validated screening tool for malnutrition in elderly people MNA is recommended for early detection of malnutrition. In our study we observed that there is a significant association between malnutrition and depression which was similar to findings by Torres et al [12] in which about one-third were considered

depressed and one-fifth were at risk for malnutrition.

In our study 6.21% were malnourished and 53.74% were at risk of malnutrition, this finding is similar to a study by Baweja et al [13] among elderly in a community dwelling(7.1%), 5.53% in elderly living in Sargodha city of Pakistan by Abdul Ghani, [14] 6.5% in elderly living at their homes in Turkey by Ozge et al. [15] It was observed in this study that malnutrition was most common in upper geriatric age group (80 years & above) (15.4%) as compared to lower geriatric age group (60-70) years age subgroup 4.3 % . This age group is more dependent, less mobile and was suffering from different type of diseases like Hypertension, Diabetes Mellitus, Ischemic Heart Disease, Acid Peptic Disease, Dementia, Dental Problems and difficulties in intake of diet. Similar findings were also observed by Abdul Ghani. [14]

Although in our study there was a higher prevalence of malnutrition in females when to males which was similar many studies done in different parts of the world (13-15) it was not found to be statistically significant probably due to small sample size. Relationship between depression and low income is well documented in our study

which is consistent with similar findings by N Mokhber. [11]

CONCLUSION

From our study it can be concluded that inter relationship of malnutrition and depression must alert us to refer the elderly depressed persons to fully qualified nutritionists for in depth evaluation. Involvement of specialists from field of psychiatry is also of utmost importance in assisting the public health professionals in providing comprehensive health care for vulnerable older people in the achievement of goal of bringing down the morbidity burden among geriatric population.

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