



## ASSOCIATION BETWEEN PSYCHOLOGICAL STATUS, RISK OF FALL AND NUTRITIONAL SCREENING AMONG ELDERLY AGED 65 YRS AND ABOVE OF RURAL RESIDENTIAL AREAS OF FARIDABAD

Ankita S. Sharma\*<sup>1</sup> and Aakanksha Nagar<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Nutrition and Dietetics, Manav Rachna, International Institute of Research and Studies, Faridabad.

<sup>2</sup>Student, Department of Nutrition and Dietetics, Manav Rachna, International Institute of Research and Studies, Faridabad.

\*Corresponding Author: Ankita. S. Sharma

Assistant Professor, Department of Nutrition and Dietetics, Manav Rachna, International Institute of Research and Studies, Faridabad

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### ABSTRACT

Malnutrition is a common phenomenon among the elderly and quite often related to psychological and nutritional problems. The aim of this study was to determine malnutrition risk and its association with nutritional screening and psychological status among elderly residing in rural residential areas of Faridabad. The objective of this study was to assess and compare the nutritional screening of elderly of the rural areas, to evaluate and compare the psychological status of the elderly of the rural areas, to assess and compare the risk of fall among elderly and to assess their 24hr diet recall. The study was conducted among 35 subjects, who were interviewed to obtain information on malnutrition risk using Mini Nutritional Assessment. Psychological status was also determined using Geriatric depression scale to identify cognitive impairment, depressive symptoms and loneliness status of the subjects respectively. Risk of fall was determined using the Home check list designed by the University of Buffalo. The results were analyzed and assessed which showed the correlation between the nutritional status and depression level, and also if the subjects have good appetite and indulge in physical activities there will be an improvement in their nutritional status. A total of 85.7% of subjects were at risk of malnutrition in rural areas. The mean score of geriatric depression scale was 16.94. Malnutrition risk was prevalent and associated with nutritional status, psychological problems and risk of fall among both the elderly subjects.

**KEYWORDS:** Malnutrition, elderly, nutritional status, risk of fall, psychosocial aspects.

### 1. INTRODUCTION

Conventionally, “elderly” has been defined as a chronological age of 65 years old or older, while those from 65 through 74 years old are referred to as “early elderly” and those over 75 years old as “late elderly”<sup>[1]</sup>

Malnutrition is a very common problem in elderly and directly linked to depression. There are many complications of malnutrition among institutionalized elderly. Among those complications depression is one.<sup>[2]</sup> Depression in old age is not a normal reaction of ageing but rather it is a pathological process. Depression is the most common mental health problem among elderly.<sup>[3,4]</sup> The risk of malnutrition and protein energy malnutrition is higher in older people who are living in hospitals and institutionalizations.<sup>[2]</sup> Depression can be the cause of generalized malnutrition.<sup>[5,6]</sup>

Nutrition can be one of the major factors affecting the health of elderly. The effect of illness in elderly leads to

a poor nutritional status. Nutritional decline may be disregarded in elderly because of their symptoms for example, muscle wasting and weight loss are, considered to be the process of ageing.<sup>[7]</sup>

Environmental hazards are the leading cause of falls, accounting for about 25 to 45 percent in most studies. Gait disturbance and muscle weakness also are common causes. Dizziness, vertigo, drop attacks, postural hypotension, visual impairment, and syncope also are known to cause falls.<sup>[8]</sup>

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## 2. METHODOLOGY

### Locale of the study

The study was undertaken in the rural areas of Faridabad. The subjects were selected purposively in the areas of Faridabad of Haryana state. The area of the study was selected by using the purposive sampling technique.

### Sample Size

Sample size for the study was 35. A total of 35 subjects were selected including both males and females.

### Development of tools and collection of data

A detailed interview scale was prepared for the collection of data and following methods were used for gathering information.

- Interviewing method
- Anthropometric measurements
- Dietary survey
- Statistical Analysis.

### ➤ Interview Method

In this method standardized scoring scales were used. This included the information regarding name, age, sex, education, eating pattern and food habits.

- The questionnaires are divided into three categories as follows:
  - Nutritional assessment
  - Home check list
  - Psychosocial assessment.

### ➤ Scoring Scales

#### • Mini Nutritional Assessment Questionnaire (Annexure 1)

The MNA is a highly specific, reliable and validated screening tool for malnutrition in the elderly. Performing the MNA is not time consuming, the complete form does not exceed 15 minutes. Mini Nutritional Assessment (MNA) comprises of 18 questions regarding anthropometry.<sup>[7]</sup>

#### • Geriatric depression scale (Annexure 5)

The Geriatric Depression Scale (GDS) was developed as a simple, easy-to-use tool to screen for depression in older adults; the original GDS Long Form is a 30-item questionnaire in which participants are asked to answer yes or no to questions.<sup>[12]</sup>

The dietary assessment was done by using the 24 hour dietary recall and nutrient adequacy ratio.

**24 hour dietary recall:** The dietary intake data of the subject was collected using 24 hour recall method.

## 3. RESULTS AND DISCUSSION

### BMI of Rural areas elderly

BMI Range (kg/m <sup>2</sup> )	Rural%
Less than 19	0
19 to less than 21	14.28
21 to less than 23	17.14
23 or greater	68.58

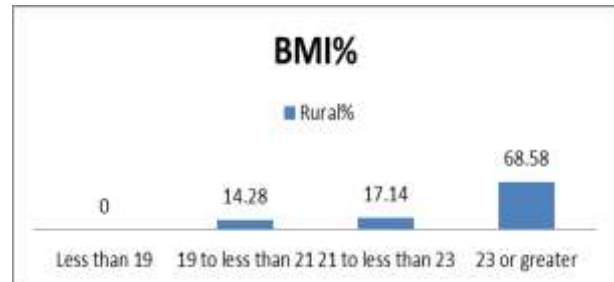


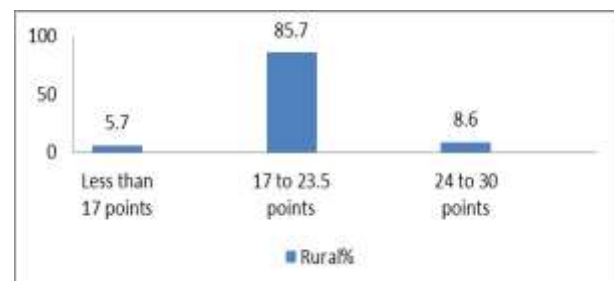
Table shows the BMI range for elderly residing in rural areas, where 14.28% were having BMI range 19 to less than 21, 17.14% had 21 to less than 23 and 68.58% had 23 or greater ranges respectively. The BMI range for elderly residing were more than the normal BMI range due to the imbalance diet, lack of physical activities.

### Malnutrition Indicator Score through Mini Nutritional Assessment of the elderly of rural areas

Score	Rural Elderly %
Less than 17 points (malnourished)	5.7
17 to 23.5 points (at risk of malnutrition)	85.7
24 to 30 points (normal nutritional status)	8.6

The mean and standard deviation in rural areas for mini nutritional assessment was  $20.9 \pm 2.38$ .

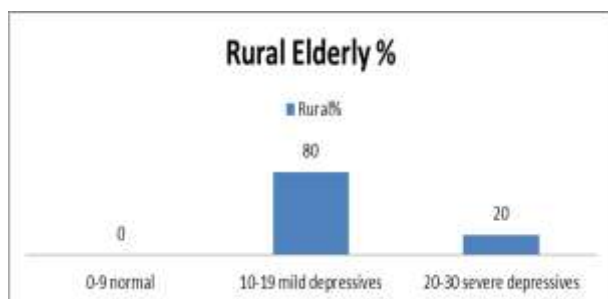
Table shows that in rural areas 5.7% were malnourished, 85.7% were at risk of malnutrition and 8.6% were having normal nutritional status respectively.



### Psychological status of the elderly of rural areas through Geriatric depression scale

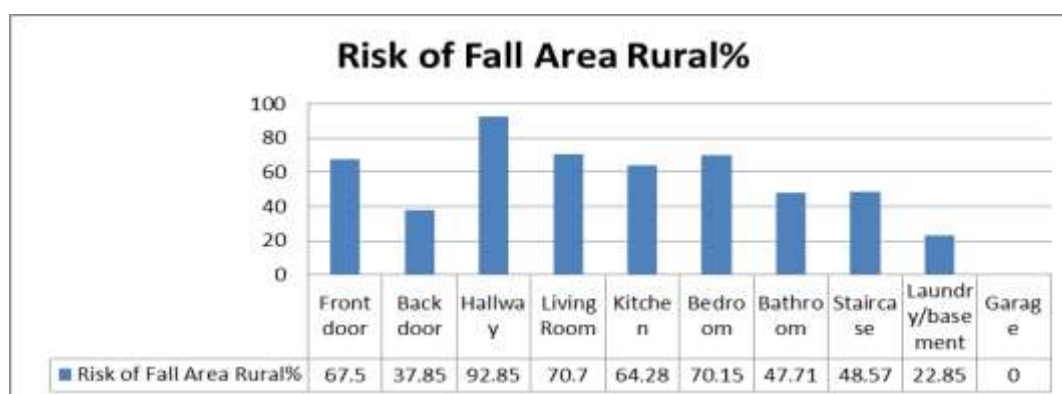
Range	Rural Elderly %
0-9 normal	0
10-19 mild depressives	80
20-30 severe depressives	20

The table shows that in rural areas 80% were mild depressives and 20% were severe depressives. This was due to the inattentive and ignorance attitude of the children towards elderly and lack of care too which resulted in loneliness, anxiety and ultimately depression. For rural areas the mean and standard deviation for geriatric depression scale was  $16.94 \pm 3.18$ .



### Risk of fall of the elderly of rural areas through Home safety self-assessment tool

Risk of Fall Area	Rural Elderly %
Front door	67.5
Back door	37.85
Hallway	92.85
Living Room	70.7
Kitchen	64.28
Bedroom	70.15
Bathroom	47.71
Staircase	48.57
Laundry/basement	22.85
Garage	0



### Energy mean score of Subjects of Rural Areas

Energy Intake	Mean $\pm$ Standard Deviation
Rural	$823.45 \pm 140.15$

The table shows for the rural areas the mean and standard deviation for energy intake was  $823.45 \pm 140.15$  Kcal.

### Protein mean score of Subjects Rural Areas

Protein Intake	Mean $\pm$ Standard Deviation
Rural	$32.85 \pm 6.28$

Table shows that the highest risk of fall were seen in bedroom which was 70.15%, as none of them had telephone near the bed in case of any emergency to contact, lack of nightlight, arrangements that causes difficulty in reaching items, presence of clutter etc.

After the bedroom the highest risk of fall was in the front door 67.5% and hallway 92.85% for rural areas. None of them had safety precautions for the elderly at their household; the infrastructure was not according to the elderly example; access to wheelchair, sleeper bathroom tiles, no grab bars or railing for the support etc.

For rural areas the mean and standard deviation for home safety self-assessment tool was  $37.8 \pm 4.38$ .

The table shows for the rural areas the mean and standard deviation for protein intake was  $32.85 \pm 6.28$  g.

### Fat mean of Subjects of Rural areas

Fat Intake	Mean $\pm$ Standard Deviation
Rural	$19.01 \pm 4.73$

The table shows for the rural areas the mean and standard deviation for fat intake was  $19.01 \pm 4.73$  g.

### Carbohydrate mean score of Subjects of Rural Areas

Carbohydrate Intake	Mean $\pm$ Standard Deviation
Rural	169.07 $\pm$ 21.49

The table shows for the rural areas the mean and standard deviation for carbohydrate intake was 169.01 $\pm$ 21.49g.

### 4. CONCLUSION

The result concluded that in the rural areas, 68.58% of the subjects (n=24) were having the BMI ranging from 23 or greater which means they were overweight due to the fact they had alcohol consumption, unhealthy eating habits, especially bad and cheap cooking oil, cheap and raw meat and meat products from the streets and not frozen items because they didn't have the income to afford expensive and quality food items. They didn't have the knowledge about intake of food. Around 17.14% subjects (n=6) were in the range of 21 to less than 23 and 14.28% of the subjects (n=5) were having BMI ranging from 19 to less than 21.

In the rural areas the malnutrition indicator score were 5.7% of the subjects were malnourished, 85.7% of the subjects were at the risk of malnutrition and 8.6% of the subjects were having normal nutritional status.

The geriatric depression score were 80% of the subjects were suffering from mild depression (range=10-19) and 20% of the subjects were suffering from severe depression (range=20-30).

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