

# A Prevalence of Depression and Their Risk Factors among the Elderly Population in the Slum Area of Chennai

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## ABSTRACT

**Background:** Aging is a natural process and old age is an incurable disease. India is turning into grey nation, with 8% of the elderly population aged above 60, which is likely to rise to 19% by the year 2050. Mental disorders were noted commonly in this age group and depression is the most common psychiatric disorder among them which go unnoticed. Prevalence of depression varies from 13%-25%. Only few studies are there which focuses on depression among elderly. Our study aims in finding the prevalence of depression in urban slum in Chennai and to find out the risk factors associated with it.

### Aim:

- To find out the prevalence of depression among the elderly population in the slum area, Chennai.
- To find the risk factors associated with the depression.

**Methodology:** This is a cross sectional study done in 5 zones in Chennai which is chosen by multistage random sampling. Final sample size attained is 460 which is based on Barua et al study<sup>16</sup>. The participants are selected based on inclusion criteria. Pre-structured questionnaire with GDS scale -15 was used in our study. The data was entered in excel sheet in Windows 10. Analysis done through SPSS 23. Continuous variables expressed in Mean  $\pm$  Standard deviation and Categorical variables expressed in Numbers and percentages. P value <0.05 is considered as statistically significant.

**Results:** The prevalence of depression in our study is 17% (80). Female preponderance is noted. Education, Occupation, Comorbidity, Type of family, Socio-economic status were found to be associated with depression and their difference is statistically significant.

**Conclusion:** More studies have to be done to throw light on the risk factors. Recreational homes should be created for rehabilitation. Screening programmes to identify depression in elderly at the earliest should be done and treatment should be started as early as possible.

**Key words:** Depression, Elderly population, Risk factors

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## INTRODUCTION

Aging is an universal multifactorial process that involves diverse changes occurring at the cellular level, various tissues, organs and the body as a whole in a person over a period of time. People more than 60 years of age is considered as elderly, according to United Nations Cut off<sup>1</sup>. According to National Policy on Older persons in India, which came into act in 2011, persons who are more than 60 years of age are considered as Senior Citizens<sup>2,3</sup>.

The elderly population in India shows a steady increase from 5.63% in 1961, 6.58 % in 1991 and 7.5 in 2001 to 8% 5 in 2010. It is projected in 2025, that the number of elderly population is expected to rise more than 1.2 billion with about 840 million of these in developing countries<sup>4,6</sup>. There is a shift in the age pyramid and the dependency population has increased. This rise of population is mainly due to the increase in life expectancy and improvement in services provided health sector. As a result of this, the mortality and morbidity have decreased leading to increase in life expectancy of the elderly. Many National programs are functioning in such a way to improve the quality of life of the elderly.

Mental disorders are seen more in this age group and depression is the most common presentation among them. According to many community based studies<sup>7,8</sup>, the prevalence of depression among elderly in India varies from 13-25% . Globally 4.4% of depression cases are reported among elderly<sup>9</sup>. Depression is considered as a “silent killer” which is the major reason in morbidity and mortality among the elderly population. Urbanization and lifestyle changes leads to more cases of depression in urban areas. In addition to the above said factors overcrowding, pollution, abuse, reduction in social support are the additional factors which increases the chances of developing depression. This study is performed to find out the prevalence of depression among the elderly population in the slum area.

#### AIM OF THE STUDY

- To find out the prevalence of depression among the elderly population in the slum
- area in Chennai.
- To find out the risk factors associated with the depression.

#### METHODOLOGY

##### Study design:

Community based cross sectional study

##### Study area:

Slum areas in North Chennai

##### Study period:

February 2019-August 2020

##### Study population:

Elderly people >60 years of age.

##### Inclusion Criteria:

All elderly people >60 years of age including both males and females.

##### Exclusion Criteria:

Elderly people with existing mental disorders

Stroke with aphasia

Loss of hearing

##### Sampling method:

Among the 32 districts of Tamilnadu, through multistage random sampling method Chennai was chosen. Chennai comprises of 15 Zones. Zone 3 was randomly selected by lot method. Zone 3, Consists of 60 slums of which 5 slums were selected randomly. Among the 5 slums, 92 participants were selected randomly from each slum through stratification.

##### Sample size:

Based on Barua A et al<sup>16</sup> study, the sample size was calculated, keeping the prevalence as 21.7, with 95% confidence interval and 4% as absolute precision with 10% of non-responders. Sample arrived is 452 which is rounded of to 460.

##### Data collection:

After obtaining Institutional Ethical Committee Clearance, data was collected. Participant's baseline characteristics like Name, Age, Sex, Occupation, Socio economic status by modified B.G.Prasad scale. Type of family was assessed through a pretested questionnaire. In addition, a 15 item Geriatric depression scale (GDS-15) was used. Score is given based on the answered questions. Scores of 0-4 are considered normal, depending on age, education, and complaints; 5-8 indicate mild depression; 9-11 signifies moderate depression and 12-15 specifies severe depression. Any positive score above 5 on the GDS-15 should prompt an in-depth psychological assessment and evaluation.

##### Statistical analysis:

Once the data was collected, it was entered in MS excel Windows 10. Statistical analysis was done by SPSS 23. Continuous variable was expressed in terms of Mean and Standard deviation. Categorical variables was expressed in terms of numbers(percentages). Association between categorical variables were done using Chi square tests. A p value <0.05 will be considered as statistically significant.

#### RESULTS

In our study data was collected from 420 elderly people in the slum area. The prevalence of depression was found to be 17%. The mean age of the population was 69. Majority of the population belong to the lower socio economic status.

**Table 1: Prevalence of depression among the elderly slum dwellers.**

Prevalence of Depression	Total (N=80) N(%)	Mild depression	49(61.25%)
Moderate depression	23(28.75%)		
Severe depression	8(10%)		
Total	80 (100%)		

In our study population, majority of the elderly suffers mild depression 49(61.25%), followed by moderate depression 23(28.75%). Severe depression is least contributing 10%.

**Table 2: Demographic characteristics of the population (N=80).**

Characteristics	Variables	Number (N)	Frequency (%)
Age group	<70 years	56	70
	>70 years	34	30
Sex	Male	19	23.7
	Female	61	76.3
SES	I,II&III	12	15
	IV&V	68	85
Occupation	Working	36	45
	Not working	44	55
Education	Literate	26	32.5
	Illiterate	54	67.5
Comorbidities	<2	18	22.5
	>2	62	77.5
Type of family	With family	33	41.25
	Alone	47	58.75
Financial dependency	No	17	21.25
	Yes	63	78.75

Among the study population, majority 56 (70%) were less than 70 years of age. Female predominance 61(76.3%) noted in our study. Most of the population belong to the lower socioeconomic group 68(85%). More than half of the people 44(55%) were not working.

54(67.5%) of study population were illiterate. More than 62(77.5%) population are suffering from more than twodiseases. 47(58.75%) were living alone and most of the people 63(78.75%) are financially dependent on their sons or daughters for their living.

**Table 3: Association of factors with geriatric depression: (N=80).**

Variables	With GDS score classified as mild, moderate and severe			Chi-square	P value
Age group				0.04	0.83
<70 years	16	10	20		
>70 years	10	10	14		
Sex				2.533	0.11
Male	9	4	6		
Female	17	12	32		
SES				3.855	0.04*
I,II&III	6	4	2		
IV & V	23	13	32		
Occupation				21.23	<0.001*
Working	16	14	6		
At home	11	3	30		

Education				5.713	0.01*
Illiterate	8	8	10		
Literate	8	10	36		
Comorbidities				6.923	0.008*
<2	9	6	3		
>2	20	10	32		
Type of family				9.779	0.001*
With family	14	11	8		
Living alone	16	3	28		
Financial dependency				3.172	0.074
No					
Yes	10	3	4		
	20	13	30		

\*statistically significant with p value less than 0.05

When we see the association between the baseline characteristics and depression, less than 70 years age are more prone for depression. Females are noticed to have more depression when compared to males. Socioeconomic status, Occupation, Education, Type of family and the comorbidities are found to be more associated with depression and the association was found to be statistically significant.

### Discussion

The results from our study are comparable to the ones performed in western population, but the prevalence of depression is much lesser in our study population compared to the western literature. Among the total 420 participants we studied, the observed prevalence was 17%, which is comparable to the study by Saikia et al<sup>12</sup>. The various studies in literature by Nirmal et al<sup>10</sup>, Jain et al<sup>14</sup> and Pracheth et al<sup>11</sup> showed the prevalence of depression as 44.6%, 45.9% & 27.71% respectively. The observed variation in the prevalence may be due to the usage of different scales such as WHO Wellbeing index<sup>5</sup>, Anxiety and Stress scale, Depression inventory Scale. Increasing age is not a significant risk factor for onset of depression in our study which is comparable to the study by Nirmal et al<sup>10</sup>.

The various risk factors which are significantly associated with depression in our study are education status, occupation, type of family, comorbidities, social economic status. These are comparable to the study done by Mamta et al<sup>13,14,15</sup>. In addition she also attributes increasing age as a factor, claiming that, as age increases, they tend to develop many comorbidities which make them dependent on others, making them vulnerable to suffer depression. The role of co-morbidities in depression is further reiterated by Pracheth et al<sup>11</sup> as he found strong association between chronic diseases and depression. We found in our study that depression is more prevalent in people with poor economic status which was in line with

saikia et al<sup>12</sup> observations. Substance abuse and sleep deprivation also significantly associated with depression<sup>14</sup>.

In our study, we noticed an increasing trend of depression among females. This may be due to the fact that many of the studied females were widows and are living alone, with no one to take care of them.

### CONCLUSION

The prevalence of our study is 17%, which is low compared to other studies. Comorbidity, Educational status, Occupation, Type of family, Socio economic status are all independent risk factors associated with depression. Depression should be diagnosed and treated as early as possible. The vulnerable population with risk factors should be screened to diagnose depression at the earliest. Recreational homes should be started for them, so that it will provide mental rehabilitation. Behavioural therapy and medications play a major role in treating depression.

### LIMITATION

- Our study included only slum area population, so it cannot be generalized.
- Mood swings may affect the performance during the study.

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