

## Original Research Article

# Prevalence and comparison of depression rates in geriatric patients of old age home and community, and its association with chosen demographic factors

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**Received:** 23 February 2020

**Accepted:** 27 March 2020

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### ABSTRACT

**Background:** Depression is an emerging mental health condition and elderly population of the world is often affected by it. In the elderly, it often goes unnoticed and often burdens them.

**Methods:** Two groups of population one from an old age home and the other from a community were selected. Data was collected using a Geriatric Depression Scale (GDS) and a demographic form. The data was compiled and analyzed using Google Spreadsheets.

**Results:** Depression rates were found in both, the old age home and the community. The rates were found higher in the old age home than the community. The demographic factors chronic illness, gender, educational status and marital status were found to be associated with depression.

**Conclusions:** As depression in elderly is a fairly common phenomenon, it should be paid more attention. The elderly should receive intervention for the disease and be able to sustain it.

**Keywords:** Age, Depression, Geriatric, Home, Old

### INTRODUCTION

Depression is the most common mental health problem in the elderly.<sup>1</sup> This adds severe burden on the patient as well as affects their families and alters their financial situation. According to the prevalence studies, it is found that 14% to 20% of the elderly living in the community experience depressive symptoms, while higher rates are found in the elderly in the hospitals (12-45%), and even higher rates in long-term care facilities (an approximate 40%).<sup>2-4</sup> Since the elderly population of the world is increasing, there are even more elderly affected by depression, but yet depression in elderly has not gained enough importance. It is usually less understood and largely ignored. Depression in older people is common. It often goes unrecognized by both patients and doctors, is frequently under-treated, and can account for greater levels of disability than physical illness.<sup>5</sup> It is fairly

recognized that depression amongst the geriatric population has significantly increased, this is reasoned to be due to various reasons for under-recognition of depression in elderly people. This may be due to barriers to diagnosis which may include time constraints, other conditions which may complicate the diagnosis and as well reluctance of the patients to talk about the disorder. There is also a great stigma associated with depression in the Indian population which may prevent the elderly from seeking medical help.

Depression in the elderly is associated with functional decline that can require increased care or placement in a facility, family stress, a higher likelihood of co-morbid physical illnesses, reduced recovery from illness (e.g., stroke), and premature death due to suicide and other causes.<sup>6</sup> Finding out prevalence of depression among older adults living in old age home and community

provides the information about the impetus we should give on mental health care, therefore, the results of this study will help the entire health care community to understand severity of depression in geriatric group of population, find the main causes of depression and help with intervention of the linkage.

## METHODS

A cross section study of the geriatric group of population was performed. Two sections of the geriatric group were taken for the study- Geriatric population residing in an old age home and geriatric population residing in a community of Jodhpur, Rajasthan, India. Inclusion criteria of the study: Population aged 60 years and above, also those who gave a valid verbal consent. Exclusion criteria: Population aged below 60 years of age and those who did not provide a consent. The sample size of the study was 160 - 80 participants from the old age home and 80 participants from the community. The study period was October - November 2019.

The old age home selected for the study was- Aastha old age home, Jodhpur and the community selected was a society in Shastri Nagar, Jodhpur. The geriatric population was contacted personally. A valid verbal consent was taken from each participant of the study before the data collection and the forms were filled by non-disclosure of the participant. Several factors including substance abuse, financial disabilities, physical disabilities, chronic illness and memory loss were taken into consideration to find the root cause of depression in the population.

There were two forms used for data collection - A Geriatric Depression scale (GDS), a standardized tool, was used to assess the level of depression. The Geriatric Depression Scale (GDS) is a well-validated screening tool for depression in the elderly, and a demographic form was used to collect demographic information. The sampling technique used was purposive. The data was compiled and analyzed using Google Spreadsheets.

To find the association between different factors- the statistical method of Chi-square test and p value was taken. A null hypothesis was formed with no association taken into consideration and Chi-square values and p-value was calculated to find the possible association between the decided factors. The confidence interval taken for P-value is 95% with 0.05 level of significance. Values corresponding  $<0.05$  are found significant, the null hypothesis stands void and the factors are found to be associated for 95% confidence level.

## RESULTS

After data analysis: The following results were obtained. Initially, the distribution of various selected factors of the demographic factors' population was studied.

Initially, the factor of distribution of age group and gender was taken. Out of the total 160 participants - 81 were males and 79 were females. Maximum number of males were found in the 70-79 age group and maximum number of females were found in 70-74 age group. The mean age of the population was 72.64 years with a standard deviation of 6.466 years. The minimum age found was 60 years and maximum age was 92 years (Table 1).

**Table 1: Distribution of gender according to age group.**

Age group	Male	Female	Total	%
60-64	7(41.17%)	10(58.83%)	17	10.60%
65-69	16(51.61%)	15(48.39%)	31	19.40%
70-74	32(56.14%)	25(43.86%)	57	35.60%
75-79	17(60.71%)	11(39.29%)	28	17.50%
80-84	8(36.36%)	14(63.64%)	22	13.90%
>84	1(20%)	4(80%)	5	3.00%
Total	81(50.63%)	79(49.37%)	160	100%

The next demographic factor considered was the distribution of gender in the community and old age home. Out of the 160 participants - 79 were females and 81 were males (Table 2).

**Table 2: Distribution of gender in old age home and community.**

Variable	Gender		Total
	F	M	
Community	34(42.5%)	46(57.5%)	80
Old age home	45(56.25%)	35(43.75%)	80
Total	79	81	160

Another demographic factor selected was educational status found in the community and old age home of the geriatric population. Majority of participants had primary education 40% followed by graduate 31.25%, secondary education 21.875% and 6.875% were illiterate. In the community, majority of the people were graduates, where as in the old age home, majority had done their primary education (Table 3). Another demographic factor selected for the study was marital status of the participants. Majority of the participants were married- more in community than in old age homes, while majority of the population in old age home were widows (Table 4).

The next demographic factor considered was chronic illness. The distribution of chronic illnesses in the community and old age home was studied. In the community, 90% were suffering from chronic illness and 10% were not suffering from chronic illness. In the old age home, 33.75% were suffering from chronic illness and 66.25% were not suffering from chronic illness (Table 5).

**Table 3: Distribution of Educational Status of the population in old age home and community.**

Variable	Education status				Total
	Illiterate	Primary	Secondary	Graduate	
Community	1(1.25%)	19(23.75%)	23(28.75%)	37(46.25%)	80
Old age Home	10(12.5%)	45(56.25%)	12(15%)	13(16.25%)	80
Total	11(6.87%)	64(40%)	35(21.87%)	50(31.25%)	160

**Table 4: Distribution of marital status of participants in community and old age home.**

Variable	Marital status					Total
	Divorced	Married	Unmarried	Widow	Widower	
Community	0(0%)	60(75%)	0(0%)	10(12.5%)	10(12.5%)	80
Old age Home	3(3.75%)	18(22.5%)	5(6.1%)	32(40%)	22(27.5%)	80
Total	3(1.87%)	78(48.75%)	5(3.12%)	42(26.25%)	32(20%)	160

**Table 5: Distribution of chronic illness in community and old age home.**

Variable	Chronic illness		Total
	Yes	No	
Old age home	53(66.25%)	27(33.75%)	80
Community	72(90%)	8(10%)	80
Total	125(78.13%)	35(21.87%)	160

The next factor analyzed was the number of children of the participants in the community and old age home. Maximum number of people, both in the community and

old age home had children less than or equal to three (Table 6).

**Table 6: Distribution of children of the participants in old age home and community.**

Variable	Children	
	<=3	>3
Community	63(39.38%)	17(10.62%)
Old age Home	72(45%)	8(5%)
Total	135	25

**Table 7: Distribution of different chronic illnesses in the community and old age home.**

Variable	Chronic illness		
	Hypertension	Diabetes	Thyroid Disorders
Community	64(80%)	23(28.75%)	4(5%)
Old age Home	48(60%)	23(28.75%)	4(5%)
Total	112(70%)	46(28.75%)	8(5%)

**Table 8: Association of educational status and depression.**

Educational status	Depression		Total
	Depressed	Non-Depressed	
Illiterate	4(33.33%)	7(66.63%)	11(6.8%)
Primary	33(51.56%)	31(48.43%)	64(40%)
Secondary	13(37.14%)	22(62.85%)	35(21.87%)
Graduate	10(20%)	40(80%)	50(31.25%)
Total	60	100	160

The next demographic factor considered was the chronic illnesses found in the population. Three diseases were found during the study which caused long term medications and financial burden. In the community, 80% of them were suffering from Hypertension, 28.75% of them were suffering from Diabetes and 5% of them were suffering from Thyroid disorder. In the old age

home, 60% of them were suffering from Hypertension, 28.75% of them were suffering from Diabetes and 5% of them were suffering from Thyroid disorder (Table 7).

After studying the distribution of various factors- the association of the factors with depression was studied using statistical methods of Chi- square test and p-value.

The association between depression and educational status was studied. Depression was found maximum in people with primary education (Table 8). A null hypothesis of no association between depression and educational status was proposed. Chi square value of 11.941 and p value of 0.008 was found. According to these values, the null hypothesis stands void and there is a positive association between the factors found.

The next association between chronic illness and depression was studied. Maximum chronic illness was found in the depressed individuals accounting to 33.13% of the population (Table 9). A null hypothesis of no association between depression and chronic illness was proposed. Chi-square value of 5.854 and p-value of

0.0155 was found. According to these values, the null hypothesis stands void and there is a positive association between the factors found.

**Table 9: Association between depression and chronic illness.**

Variable	Depression		Total
	Depressed	Non-Depressed	
Chronic illness	Yes	53(33.13%)	72(45%)
	No	7(4.27%)	28(17.5%)
Total		60(37.5%)	100(62.5%)

**Table 10: Association between depression and marital status.**

		Depression		Total
		Depressed	Non-Depressed	
Marital Status	D	1(33.33%)	2(66.66%)	3(1.87%)
	M	23(29.48%)	55(70.5%)	78(48.75%)
	UM	2(40%)	3(60%)	5(3.12%)
	W	24(57.14%)	18(42.85%)	42(26.25%)
	WR	10(31.1%)	22(68.75%)	32(20%)
Total		60	100	160

The next association between marital status and depression was studied. Maximum depression rate was found in widows, while minimum depression rate was found in married individuals (Table 10). A null hypothesis of no association between depression and marital status was proposed. Chi square value of 9.62 and p-value of 0.047 was found. According to these values, the null hypothesis stands void and there is a positive association between the factors found.

**Table 11: Association between depression and age.**

Variable	Depression		
	Depressed	Non-Depressed	
Age	>84	1	4
	60- 64	10	7
	65-69	18	13
	70-74	37	20
	75-79	18	10
	80-84	16	6
Total	60(37.5%)	100(62.5%)	

The next association between age and depression was studied. Maximum depression rate was found in the population of age group 70-74 years (Table 11). A null hypothesis of no association between depression and marital status was proposed. Chi square value of 5.373 and p-value of 0.471 was found. According to these

values, the null hypothesis stands true and there is no positive association between the factors found.

**Table 12: Association between depression and gender.**

Gender	Depression		Total
	Depressed	Non-depressed	
Females	38	41	80
Males	62	19	80
Total	100	60	160

The next association between gender of the participants and depression was studied (Table 12). A null hypothesis of no association between depression and marital status was proposed. Chi square value of 13.804 and p-value of 0.0002029 was found. According to these values, the null hypothesis stands void and there is a positive association between the factors found.

At last, comparison between depression rates in the community and old age home was done. Participants living in the community and experiencing depression were 30% and non-depressed were 70%. Participants residing at the old age home and experiencing depression were 45% and non-depressed were 55%. This showed a significant level of depression in the geriatric population living in the old age home compared to those living in the community (Table 13).

**Table 13: Depression rates in the elderly living in the community and the old age home.**

	Depression		Total
	Depressed	Non-depressed	
Old age home	36(45%)	44(55%)	80
Community	24(30%)	36(45%)	80
Total	100	60	160

## DISCUSSION

Depression affects a significant population of the elderly. It is generally estimated that approximately 15% of adults aged 60 and over suffer from a mental disorder.

The most common neuropsychiatric disorders in this age group are dementia and depression.<sup>7</sup> There was a meta-analysis by Barua et al, of 74 studies which included 487,275 geriatric individuals, this study found that the worldwide prevalence rate of depressive disorders to be

between 4.7% and 16%; however, there was higher prevalence of geriatric depression in India ranging from 11.6% to 31.1%.<sup>8</sup>

According to the World Health Organization (WHO) report, patients over 55 years with depression have a four times higher death rate than those without depression, mostly due to heart disease or stroke.<sup>9</sup>

Although there are known, effective treatments for depression, fewer than half of those affected in the world (in some countries, <10%) receive such treatments.<sup>10</sup> In this study, depression was found prevalent in both the community and the old age home, but depression was found more in the old age home than in the community. It could be due to multiple reasons- isolation from the family, not being able to meet the family, financial instability, age related illnesses etc. The following chosen demographic factors were found associated with depression gender, educational status, chronic illness and marital status (Table 14).

**Table 14: Association of depression with chosen demographic factors.**

Variable	Depression		Chi-Square Value	p-value	Association	
	Non-Depressed	Depressed				
Age	>84	1	4	5.373	0.471	No
	60-64	10	7			
	65-69	18	13			
	70-74	37	20			
	75-79	18	10			
	80-84	16	6			
Gender	Female	38	41	13.804	0.0002029	Yes
	Male	62	19			
Educational Status	Illiterate	7	4	11.941	0.008	Yes
	Primary	31	33			
	Secondary	22	13			
Chronic Illness	Graduate	40	10	5.854	0.0155	Yes
	Present	72	53			
Marital Status	Absent	28	7	9.62	0.047	Yes
	Divorced	1	2			
	Married	23	55			
	Unmarried	2	3			
	Widow	24	18			
	Widower	10	22			

## ACKNOWLEDGEMENTS

Authors would like to thank the old age home and participants from the community for giving us permission and consent to perform the study and do the research.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

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**Cite this article as:** Singh PT, Singhvi SD, Bhandari G. Prevalence and comparison of depression rates in geriatric patients of old age home and community, and its association with chosen demographic factors. *Int J Res Med Sci* 2020;8:1760-5