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## **Original Research Article**

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# Depression and its associated factors among geriatric population in rural area of south Bihar

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#### **ABSTRACT**

**Background:** Depression among elderly has been recognized as one of the major health problems worldwide. However, important life changes that happen as we get older may cause feelings of uneasiness, stress, and sadness. **Methods:** Community based cross sectional study was conducted among geriatric people (aged above 60 years) residing at rural area of south Bihar. The information regarding sociodemographic characteristics, dietary habits, current working status, any morbid condition and source of income were collected. The level of depression was assessed by using geriatric depression scale short form (GDS SF)-15.

**Results:** The prevalence of depression was 54.6%. Depression was strongly associated with female gender, single status of participants, financial dependent on others and medical illness, which was statistically significant.

**Conclusions:** Depression in geriatric people became a major public health problem in urban as well as rural population. So, there is an urgent need for feasible intervention for geriatric population by the government and health care professional to improve their quality of life and to strengthen the systems for their support.

**Keywords:** Depression, Geriatric depression scale short form (GDS SF)-15, Geriatric population, Medical illness, Morbid condition

#### INTRODUCTION

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration.1 It is present in all age groups of people, but more common problem among older adult. Depression among elderly has been recognised as one of the major health problems, with prevalence ranged from 8 to 22%.<sup>2-4</sup> However, important life changes that happen as we get older may cause feelings of uneasiness, stress, and sadness. It is predicted that the geriatric population in the world will get doubled in next 30 years, i.e., approximately 11% to 22% in 2050.5 In India, the elderly population has rose from 77 million in census 2001 to 104 million in census 2011 which now accounts for 8% of total population. 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>6</sup> Early recognition, diagnosis, and initiation of effective treatment for depression in old age people provide opportunities for improving their quality of life, preventing morbidity and mortality and maintaining optimal levels of function.<sup>7</sup> This study was conducted to assess the prevalence of depression among geriatric people residing in rural areas of south Bihar and to identify the significant risk factors associated with depression.

#### **METHODS**

The present community based cross-sectional study was conducted among geriatric people (aged above 60 years) residing at rural areas of south Bihar from August to September 2019. A house to house visit was conducted in

the community and data was collected using pretested semi-structured questionnaire through personal interview method. The locked house and non-responsive participants were excluded from this study. Written informed consent was taken from each participant. The information regarding sociodemographic characteristics (includes age, gender, education, type of family and socioeconomic status), dietary habits, current working status, any morbid condition (past and present), and source of income were collected. Geriatric depression scale short form developed by Yesavage et al was used to assess the prevalence of depression among participant.8 It consists of brief questionnaire in which the participants were asked to respond to the 15 questions by answering either 'yes' or 'no'. Each question carried 1 mark and total scores greater than 5 suggestive of depression.8 The data was entered into microsoft excel spreadsheet 2017,

and was subsequently analysed using SPSS 21.0 (trial version). The statistical test was used with 95% of confidence interval and Pearson's chi-square test was used, with the statistical significance level of p<0.05.

#### **RESULTS**

A total of 130 participants were enrolled in this study, out of which 98 (75.4%) were male and 32 (24.6%) were female. Maximum participants (90.8%) were in the age group of 61-70 years of age. Majority of them i.e., 108 (83.1%) were literate and 76 (58.5%) were employed. Based on the modified BG Prasad classification of socioeconomic status, 39 (30.0%) were in class I, followed by 33 (25.4%) in class II and 22 (16.9%) in class V (Table 1). According to geriatric depression scale (GDS-15), the prevalence of depression was 54.6% (Table 1).

Table 1: Socio demographic characteristics of study participants (n = 130).

Characteristics		Frequency	%
A ()	60-70	118	90.8
Age (years)	71 and above	12	9.2
Gender	Male	98	75.4
	Female	32	24.6
Education	Illiterate	22	16.9
	Literate	108	83.1
Family type	Joint	86	66.2
Family type	Nuclear	44	33.8
Spouse	Alive	103	79.2
	Dead	27	20.8
Dietary habits	Vegetarian	32	24.6
	Mixed	98	75.4
	Class I	39	30.0
Socio economic status (modified BG Prasad classification 2019) <sup>9</sup>	Class II	33	25.4
	Class III	16	12.3
	Class IV	20	15.4
	Class V	22	16.9
Working status	Employed (private sector)	76	58.5
WOI King Status	Unemployed	54	41.5
Source of income	Job	76	58.5
	Pension	29	22.3
	Dependent on others	25	19.2
	Diabetes	36	27.7
Morbid condition	Hypertension	33	25.4
	Cardiac disease	11	8.5
	Respiratory disease (asthma/COPD)	9	6.9
	GIT problems (constipation/diarrhoea/gastritis etc.)	18	13.8
	Chronic kidney disease	3	2.3
	Visual impairment	63	48.5
	Hearing impairment	9	6.9
	Locomotor impairment	26	20.0
GDS score	5 and below (normal)	59	45.4
	6 and above (depression)	71	54.6

Table 2: Bivariate analysis for association between depression and various risk factors among study participants.

		Depression absent	Depression present	Chi- square	P value	Odds ratio (95% CI)
Age (years)	60-70	55	63	0.77	0.378	1.74 (0.49-6.11)
	71 and above	4	8			
Gender	Male	55	43	18.51	0.0001	8.95 (2.91-27.47
	Female	4	28			
Education	Illiterate	12	10	0.89	0.3437	1.55 (0.61-3.91)
	Literate	47	61			
Family type	Joint	44	42	3.42	0.0443	2.02 (0.95-4.30)
	Nuclear	15	29			
Spouse status	Alive/staying together	53	50	7.37	0.0066	3.71 (1.38-9.94)
	Dead/separated	6	21			
Working Status	Employed	37	39	0.8036	0.3700	1.38 (0.68-2.79)
	Unemployed	22	32			
Financial dependency	Independent	57	48	17.45	0.0002	13.65 (3.06-60.90)
	Dependent	2	23			
Medical illness/ morbid condition	No	25	11	11.62	0.0006	4.01 (1.75-9.14)
	Yes	34	60			

The source of income of the participants was Job (58.5%) and pension (22.3%). Majority of the participants (48.5%) had visual impairment followed by diabetes (27.7%) and hypertension (25.4%) (Table 1).

The risk of depression was 8.95 times more in females than males which was statistically significant. The association of depression was 3.71 times more in participants whose spouse was dead and 13.65 times more, who were financially dependent on others (Table 2). Even the risk of depression was 11.62 times more in those with co-morbid condition or medical illness, which was statistically significant. The prevalence of depression in geriatric participants was also higher among those who were older age (70 and above), literate and unemployed (Table 2).

#### DISCUSSION

In this study, majority (90.8%) of participants were in the age group of 60-69 years and similar findings was observed Susan Paul study. The prevalence of depression in geriatric population in this study was 54.6%, which was quite high. The similar result was found in a study done by Susan Paul in rural block of Tamilnadu with a prevalence of 52.5%. Anita Goyal study in southern part of Punjab revealed that 60% of geriatric people were mildly depressed and 17% were severely depressed, which was much higher than our study findings.

It was observed from this study that females had higher risk of developing depression than males which was statistically significant. This may be because that women face more stressful events throughout their lifetime. Buvneshkumar et al study revealed that female had 1.81 times more chance to develop depression than male, which was much lesser than our study findings. <sup>12</sup> Similar observations were also found in studies done by Susan Paul, Sati Sinha, and Sengupta. <sup>10,13,14</sup> Study showed that elderly women had a greater chance of transitioning from non-depression to depression and lesser chance of transitioning from depression to non-depression. <sup>15</sup>

The risk of suffering from depression was more than 2 times among participants who were living in nuclear family than those living in a joint family. In a study done Sengupta, the elderly living in a nuclear family were more than 3 times likely to suffer from depression than those living in a joint family and similar findings was also reported by Taqui. <sup>13,16</sup> There may be less care and support of elderly people in nuclear family, that leads to depression.

The participants whose spouse was dead or separated or single status had strong association of developing depression compared to those whose spouse was alive or staying together. The findings were similar and comparable to Susan Paul study.<sup>10</sup>

Medical illness or morbid condition was strong risk factor for depression in geriatric people. In this study, it was observed that the medical illness had 4 times more chance to develop depression than those without any medical illness, which was statistically significant. Similar findings were observed in other studies also. 12,13

The limitation of this study was that the diagnosis of depression was not based on diagnostic criteria. As GDS scale is used for screening purpose, so it cannot be replacement of diagnostic criteria by clinician. Assessment of medical illness or co-morbid condition was based on participant's history or medical record.

#### **CONCLUSION**

The prevalence of depression in geriatric population in rural area was 54.6% which was quite high. Higher age, female gender, nuclear family, single status, unemployment and medical illness were found to be strongly associated with depression in geriatric population. Depression in geriatric people became a major public health problem in urban as well as rural population. There is an urgent need for feasible intervention for geriatric population by the government and health care professional to improve their quality of life and to strengthen the systems for their support.

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Institutional Ethics Committee

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