

## COMMUNITY-BASED CROSS-SECTIONAL ASSESSMENT OF DEPRESSION AMONG GERIATRIC POPULATION

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### ABSTRACT

#### BACKGROUND

As the life expectancy is increasing, the geriatric population in the world are also increasing. Older people face many physical and mental health challenges which need to be recognized. Over 20% of adults aged 60 and above suffer from a mental or neurological disorder, depression being the commonest. Hence study was taken up to determine the prevalence of Depression and the socioeconomic factors influencing it.

#### MATERIALS AND METHODS

A community-based cross-sectional study was done in the rural area of PHC Kowshika, for a period of six months. Total 930 subjects participated in the study. Depression among elderly (>60 years) population in the study area was assessed using geriatric depression scale, cognitive impairment assessed using HMSE scale, socio-demographic details were taken and barriers in seeking health care was assessed.

#### RESULTS

Out of 930 study participants, 58.6% were females and 41.4% were males. Age of the participants ranged from 61-100 years with the mean age of 78.48 years. Among the total study participants 68.6% were illiterates, 71.93% belonged to upper class of socio economic status and 48.8% were having high standard of living conditions. Prevalence of depression among the study population was 27.74%; and 18.49% of them were in the severely depressed group. 60.21% had cognitive impairment. Depression was more common among people with lower SES, less common among literates and people with high standards of living.

#### CONCLUSION

Prevalence of Depression using GDS scale among elderly population in the study area was 27.74 %. And depression was more common among people with low SES and less among people who had education, occupation and good standards of living.

#### KEYWORDS

Dementia, Depression, Elderly, GDS.

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#### BACKGROUND

As the life expectancy is increasing, the geriatric population in the world are also increasing. Between 2015 and 2050, the proportion of the world's older population is estimated to almost double from about 12% to 22% and India is the second-most populous country in the world in terms of elderly population aged more than 60 years.

Older people face many physical and mental health challenges which need to be recognized. Over 20% of adults aged 60 and above suffer from a mental or neurological disorder and 6.6% of all disability (disability adjusted life

years-Dalys) among people over 60 years is attributed to mental and neurological disorders.<sup>1</sup>

Mental disorders though more prevalent but has got the low priority in most of the countries around the world, of which depression among the elderly population being the most common treatable medical condition and is the most frequent cause of emotional distress.<sup>2</sup>

According to WHO Mental Health Report 2012, depression is estimated to affect 350 million people. The World Mental Health Survey conducted in 17 countries found that on average about 1 in 20 people reported having an episode of depression in 2011.<sup>3</sup>

In India, community-based studies on mental disorder have revealed that the prevalence of depression varies between 13% and 46% among the elderly population.<sup>4</sup>

There may be multiple risk factors for mental health problems at any point in life. But elderly people may experience life stressors common to all people along with the additional stressors that are more common in later life. For example, older adults may experience reduced mobility, chronic pain and other health problems. In addition, older people are more likely to experience events such as drop in

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socioeconomic status with retirement, abandonment, neglect, death of the spouse, loneliness, loss of dignity and lack of social support. All these stressors make them prone to develop depression and other mental health problems in their life.

Though depression is a major mental health problem, most of the elderly people will not seek health care may be due to under-diagnosis or stigma associated with it and due to many other barriers. Hence our study tries to find out the prevalence of depression, socio-demographic factors influencing it and also other barriers which prevent elderly population in seeking health care.

### Objectives of the Study

1. To estimate the prevalence of depression among elderly (age >60).
2. To determine the association of socio demographic factors with depression.
3. To determine the barriers in seeking health care among elderly.

### MATERIALS AND METHODS

A community-based cross-sectional study was conducted between March to August 2016 (for a period of 6 months). Study was conducted in rural area of PHC Kowshika, located 10 km away from the institution, which was selected randomly. Among 135 PHCs of Hassan district, it has got 3<sup>rd</sup> highest population coverage (19,431), with four sub centres, covering 20 villages. Distribution of the population was as follows, Male population - 10,183 female population - 9,248 and elderly population being- 1848.

**Sample Size-** The prevalence of Neuropsychiatric disorders is 11.6% in India (Mental Health Atlas 2011 - World Health Organization).<sup>5</sup> the same was considered for sample size calculation, taking an allowable error as 20%. So the sample size required for the study was 762 (800) by using the formula  $n = 4pq/d^2$  ( $n = (4) (11.6) (88.4)/5.38 = 762$  which was approximated to 800].

Ethical Clearance was taken from Institutional Ethical Committee, Hassan Institute of Medical Sciences, Hassan, before starting the study.

### Inclusion Criteria

- All subjects belonging to either sex aged > 60 years.
- Permanent residents of the study area.

### Exclusion Criteria

- Subjects not willing to participate in the study.
- Subjects who were seriously ill at the time of study.
- Subjects who were deaf and dumb.

**Sampling Technique-** Study was conducted by doing house-to-house survey. Every household in each village was visited and all the eligible elderly people in each house were included in the study till we reached our sample size. Junior doctors (Investigators) visited the study area couple of times, each visit covering one village and spent not less than

30 minutes for each subject. Prior consent was taken from individual. Information was collected using preformed and pretested proforma, by face-to-face interview method at their own residential settings. Totally we interviewed and collected information from around 960 elderly population, out of which 930 subjects' details were complete. Rest of the elderly people were excluded from the study according to exclusion criteria.

The proforma in its first part included socio-demographic details of the participants like age, sex, education, type of family, family size, current marital status, living arrangements and monthly income etc. And also history of any chronic illness like diabetes, hypertension and COPD etc. were asked.

**Socioeconomic Status Assessment-** After enquiring about the details like caste, education, occupation and social participation etc. socioeconomic status (SES) of the study participants was assessed according to

Udai Pareek's Classification, which was developed mainly for rural area and SES classified according to the scores as upper class, upper middle class, middle class, lower middle and lower class.

As living conditions of the population actually influences the accessibility, affordability and utilisation of the health care services, living condition of the study population was assessed using Standard of Living Index (SLI) scale, developed by Govt. of India. The type of house they were residing in, source of drinking water, electricity utilisation, other material possessions were assessed and classified according to SLI scale score as low (<9), medium (9-14) and high (>14).

**Cognition and depression assessment-** Cognition of the participants was assessed using Hindi Mental State Examination (HMSE). HMSE, a tool developed by IndoUS-Cross National Dementia Epidemiology 1975, intended to screen for cognition impairment. It consists of 22 items, which examine various cognitive aspects like orientation to time /place /memory, attention, language, registration and recall. Each question with the right answer was given 1 mark, with a maximum score of 30 if all the answers were correct. And score of 25 or lower is indicative of cognitive impairment.<sup>6</sup>

Depression among elderly people was assessed using Geriatric Depression Scale - 15 item Scale (GDS-15 item Scale) developed by Yesavage 1983, with a sensitivity of 92% and a specificity of 89%. It consists of 15 questions related to depression; participants had to respond with "yes/no" to each of the item in the scale. A score of 1 was assigned to each positive response, such that maximum score would be 15. And depression was graded according to GDS- score as 0-4 (no depression), 5-10 (mild depression) and 11- 15 (severe depression).<sup>7</sup>

Though elderly population suffer from mental and physical health problems they don't seek health care early. Hence, we assessed the common barriers like transportation, stigma, financial problems, denial of the

problem and lack of services, which prevented them in seeking health care at the right time.

**Statistical Analysis-** The data was entered in Microsoft Excel and was analysed using SPSS version 21.0. Results were expressed in percentages, proportion and mean. Binary Logistic Regression was used to know the association between various socio demographic factors and depression. P value <0.05 was considered statistically significant.

**RESULTS**

**Socio demographic features-** Out of 930 study participants 58.6% were females and 41.4% were males. As the study conducted was on elderly population the age of the participants ranged from 61-100 years with the mean age of 78.48 years.

Majority of the study participants were Hindus (98.38%). Around half (50.10%) of these elderly people were from nuclear family and 24.83% were living alone and not with their children. 71.72 % were currently married and 27.63% were married but divorced and widowed.

Among the total study participants 68.6% were illiterates. Their personal history showed that 22.25 % were alcoholics and 24.94% were pan chewers. After assessing the living conditions of the study population, it was found that almost 30% of them were not having even the toilet facilities at their home and were following open air defecation method.

**Socio Economic Status**

Score	Category	Number	%
>43	Upper class	669	71.93
33-42	Upper middle Class	158	16.98
24-32	Middle class	03	0.32
13-23	Lower middle class	94	10.10
<13	Lower class	06	0.64

**Table 1. Distribution of the Study Subjects according to their Socioeconomic Status (Udai Pareek's Classification) (n=930)**

Socio economic status of the study population was assessed using Udai Pareek classification. Most of the study.

**Socio-demographic factors and depression-**

Variable	B	SE	Wald	OR	95% CI	Significance
SLI	0.716	0.108	44.065	0.489	0.396-0.604	0.000
SES (Pareek)	0.701	0.141	24.885	2.016	1.531-2.656	0.000
Education	0.123	0.038	10.246	0.884	0.820-0.953	0.001
Occupation	0.405	1.683	0.058	0.667	0.025-18.059	0.810
Health seeking behaviour	0.672	0.070	93.294	0.511	0.371-0.588	0.000

**Table 4. Association of Socio-demographic Factors and Depression**

\*B-coefficient for the constant, †SE-Standard error, ††Wald-Wald chi-square test.

Logistic regression analysis was done to assess the association between various socio-demographic factors and

participants (71.93%) belonged to upper class followed by upper middle class (16.98%) and only 0.64% of them were from lower class.

Score	Category	Number	Percentage
< 9	Low	353	37.95
9-14	Middle	123	13.22
>14	High	454	<b>48.81</b>

**Table 2. Distribution of the Study Subjects According to Standard of Living Index (n=930)**

Living condition of the subjects assessed using Standard of Living Index, it was found that almost half of the study population (48.8%) were having high standard of living conditions, whereas the standard of living was low among the other 37.95% population.

**Chronic Illness-** Five hundred and thirty eight individuals (57.84 %) among the study population were diagnosed to have chronic illness such as hypertension, diabetes mellitus, ischaemic heart disease, chronic obstructive pulmonary diseases or cancer. Some (10.43 %) of them even had a combination of two or three illnesses. The rest (42.15%) were healthy except for some minor ailments.

**Depression Assessment**

Status	Number	Percentage
Normal	672	72.25
<b>Depression</b>	<b>258</b>	<b>27.74</b>

**Table 3. Prevalence of Depression among Study Population According to GD Scale**

Depression among elderly was assessed using Geriatric depression scale, with fifteen questions and scoring was given according to the responses. And the study showed that the overall prevalence of Depression among the study population was 27.74 % and 18.49% of them were in the severely depressed group. And Cognitive impairment assessment done according to HMSE scale showed that 60.21% of the study population had cognitive impairment.

depression. It was found that Depression was 0.48 times less common among people with high standards of living compared to low standards of living, with 95% CI (0.396-0.604), 0.8 times lesser among literates compared to illiterates, with 95% CI (0.820-0.953), 0.5 times lesser

among study population who had health seeking behaviour compared to the individuals who didn't have health seeking behaviour, with 95% CI (0.371-0.588) and it was found statistically significant.

Depression was found 2.0 times more among study participants from lower socioeconomic status compared to participants from higher SES, with

95% CI (1.531-2.656) and it was found statistically significant.

Depression was 0.6 times lesser among the study population who have had some occupation than others who didn't have any occupation (95% CI (0.025-18.059)) but it was not statistically significant.

**Barriers in Seeking Health Care-** Health seeking behaviour among elderly population was assessed. Among 930 individuals 45.6% of them had health seeking behaviour when needed, rest of the others didn't have. Among those who did not seek health care lack of proper transportation facilities (25.16%) was the commonest barrier followed by financial problems (5.5%) and lack of health care services (2.58%). And 18.6% of the participants were not seeking health care as they were not ready to accept the health problem they had (denial of the problem) and 1.61% of the participants felt that social stigma associated with the diseases prevented them in seeking health care when needed.

## DISCUSSION

In the present study depression among elderly was found to be 27.74%. In a study conducted by Pracheth R et al<sup>8</sup> in the urban slums of Dharwad district, Karnataka, prevalence of depression was 29.36% and, in another study, conducted by Vishal J et al<sup>9</sup> in the urban poor locality of Surat observed the prevalence of 39%. A cross-sectional study in a tertiary care hospital in Karachi found the prevalence of depression to be 19.5% in the elderly aged 65 years and above.<sup>10</sup> This shows that depression among elderly is emerging as public health concern.

The present study shows that depression was two times higher among the population from lower socioeconomic condition than the subjects from higher socioeconomic status. It was 0.5 times less among people with having high standard of living. It was 0.8 times less among people who had education and occupation and was statistically significant.

A similar study conducted by Safwi SR et al<sup>11</sup> showed similar findings that depression was more prevalent among (14.6%) subjects than those having some education. 16.1% of the study subjects having a low SLI were found to be suffering from depression as compared to 12.1% of those having high SLI. Among the occupational groups depression was found to be present in 33.3% of the professional groups, followed by 11.5% in the housewives.

Hence people with no education, dependant on others without occupation, lower socioeconomic status and low

standard of living all these situation puts any individuals at risk of developing depression in their life.

Out of 930 study participants less than half of them had health seeking behaviour. And the major barriers found in the study were lack of proper transportation facilities and denial of the health problems among them and even lack of health care services. Hence, measures like increasing transportation facilities even to remote place, improving health care facilities by increasing man power, providing mental health care facilities and increasing awareness among the general public about the diseases should be taken to overcome the barriers.

## CONCLUSION

Prevalence of Depression using GDS scale among elderly population in the study area was 27.74 %. And depression was more prevalent among people with low SES and less among people who had education, occupation and good standards of living.

## REFERENCES

- [1] Mental health action plan 2013-2020. Geneva: World Health Organization 2013.
- [2] Sanjay TV, Jahnavi R, Gangaboraiah B, et al. Prevalence and factors influencing depression among elderly living in the urban poor locality of Bengaluru city. *International Journal of Health & Allied Sciences* 2014;3(2):105-109.
- [3] World Health Organization. Depression. Geneva: WHO 2012. <http://www.who.int/topics/depression/en>
- [4] Barua A, Kar N. Screening for depression in elderly Indian population. *Indian J Psychiatry* 2010;52(2):150-153.
- [5] WHO. Mental health atlas 2011. World Health Organization 2011.
- [6] Sengupta P, Benjamin AI. Prevalence of depression and associated risk factors among the elderly in urban and rural field practice areas of a tertiary care institution in Ludhiana. *Indian J Public Health* 2015;59(1):3-8.
- [7] Yesavage JA, Brink TL, Rose TL, et al. Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res* 1982-1983;17(1):37-49.
- [8] Pracheth R, Mayur SS, Chowti JV. Geriatric depression scale: a tool to assess depression in elderly. *Int J Med Sci Public Health* 2013;2(1):31-35.
- [9] Vishal J, Bansal RK, Swati P, et al. A study of depression among aged in Surat city. *Natl J Community Med* 2010;1(1):47-49.
- [10] Taqui AM, Itrat A, Qidwai W, et al. Depression in the elderly: does family system play a role? A cross-sectional study. *BMC Psychiatry* 2007;7:57.
- [11] Safwi SR, Ami A, Khalique N, et al. A cross-sectional study on depression from rural India. *International Journal of Community Medicine and Public Health* 2016;3(7):1769-1776.