

Prevalence of Depression among Geriatric Population in Block Hazratbal, District Srinagar

Umar Nazir^{1*}, Rouf Hussain Rather¹, Shazia Benazir², Muhammad Salim Khan S¹ and Hamidullah Shah³

¹Department of Community Medicine, Government Medical College, Srinagar, India

²Department of Microbiology, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, India

³Department of Psychiatry, Government Medical College, Srinagar, India

*Corresponding author: Umar Nazir, M.D., Department of Community Medicine, Government Medical College, Srinagar, India, Tel: 919596000946; E-mail: drumarnazir111@gmail.com

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Abstract:

Background: Elderly population aged 60 years and above in the world will reach 1.2 billion by the year 2025, the majority of whom will be in developing countries. Major health problems which are faced in this age group are hypertension, CAD, atherosclerosis, strokes, DM, obesity, cancers, cataracts, osteoarthritis, osteoporosis, chronic obstructive airway disease, benign hyperplasia of prostate, Alzheimer's disease, Parkinson's disease, senile Dementia and depression.

Objective: To estimate the prevalence of depression among geriatric population in block Hazratbal, district Srinagar.

Methodology: The 496 elderly subjects were interviewed in their local/Urdu language and they were examined by using a pre-tested, pre-structured study questionnaire. The questionnaire was divided into two parts. The first part comprised of the socio-demographic information which covered a diverse set of parameters such as age, sex, marital status, education, socio-economic status, Non-communicable diseases, living conditions, economic dependency and the dependency for the activities of daily living, impact of turmoil caused due to conflict in the state. In second part Geriatric Depression Scale (GDS 30-item) was used to measure depression in geriatric population in the selected sample population.

Results: In the present study, it was found that 31.5% of elderly were suffering from depression. 27.2% of elderly had Mild depression, whereas only 4.2% had severe depression as males (31.5%) $p < 0.001$. Both the categories of depression were found to be more in elderly females. Prevalence of severe depression in elderly females (7.1%).

Conclusion: Overall prevalence of depression was fairly high among the elderly subjects in this part of the world. Depression was more common in females as compared to males. Advanced age, illiteracy, occupations, marital status, socio-economic class, family pattern, economic dependence, dependence for activities of daily living, children dependency, expected care givers, relationship with spouse are the strong predictors on the prevalence of depression in the elderly.

Keywords: Activities of daily living; Geriatric depression scale; World Health Organization

Introduction

Elderly population aged 60 years and above in the world will reach 1.2 billion by the year 2025, the majority of whom will be in developing countries [1]. Major health problems which are faced in this age group are hypertension, coronary artery disease, atherosclerosis, strokes, diabetes mellitus, obesity, cancers, cataracts, osteoarthritis, osteoporosis, chronic obstructive airway disease, benign hyperplasia of prostate, Alzheimer's disease, Parkinson's disease, senile Dementia and depression [1].

Depression is an affective illness characterized by depressive symptoms such as disturbance in mood, cognition and behaviour [2]. The World Health Organization (WHO) estimated that the overall

prevalence rate of depression in geriatric population varies between 10% and 20% depending upon cultural situations [3]. Community based studies show a prevalence of depression in the elderly, ranging from 4.8% in Spain to as high as 35% in Turkey and Hong Kong [4-6]. The community based mental health studies in India have revealed that point prevalence of depression in geriatric Indian population varies between 6% and 55% [7,8].

India is the second-most populated country in the world, in terms of elderly population of 60 years and above, elderly depression is not yet perceived as a public health problem in India. Demographic changes in India have resulted in change in structure of population, the population of 60 years and above which was 7.4% in the year 2001 has raised to 9% by the year 2016 [9,10]. Even though depression is the commonest psychiatric disorder in the elderly, it is commonly misdiagnosed and under treated. This could be due to the misconception that depression is part of aging rather than a treatable

condition [11]. Depression decreases an individual's quality of life and increases dependence on others. If depression is left untreated, there will be significant clinical and social implication in the lives of the elderly [12].

Diagnosing depression in the elderly is often difficult. Presence of cognitive impairment as well as reluctance and denial by the elderly and their family members may make eliciting history difficult and complicate the doctor's assessment. Manifestations of depression in the elderly are also different from depression in other periods of adulthood. According to the observations made by the World Health Organization, the factors of depression in old age are reported as genetic susceptibility, chronic disease and disability, pain, frustration with limitations in activities of daily living (ADL), personality trait (dependent, anxious or avoidant), adverse life events (widowhood, separation, divorce, bereavement, poverty, social isolation) and lack of adequate social support, civil unrest, conflict and oppression.

The elderly often presents with non-specific or somatic symptoms rather than the typical symptoms of depression [13]. Persistent complaints such as pain, headaches, fatigue, insomnia, gastrointestinal symptoms, arthritis, multiple diffuse symptoms and weight loss are well known primary presentations of depression in the elderly. However, they may be particularly confusing in the elderly because co-existing medical disorders may also cause some of these symptoms. The lowest rate of clinical depression is found among elderly persons living independently in a community; prevalence increases with the prevalence and severity of medical co-morbidity and disability [14].

Over the past decades India's health programs and policies have been focusing on issues like population stabilization, maternal and child health care and disease control activities, whereas the current statistics for the elderly in India gives a prelude to a new set of medical, social and economic problems. There is a need to highlight the medical and social problems that are being faced by the elderly population.

The state of Jammu and Kashmir being one of the highest militarized zones of the world has seen great atrocities caused due to civil unrest, conflict and oppression. Most civilians witness war-related traumatic events such as shooting, killing, rape and loss of family members. Such incidents may have resulted in alarming rise in the number of cases of depression over the last two and a half decades of conflict especially in the geriatric age group of the society.

Research Methodology

A community based study in assessment of depression among the elderly population has hardly been done in this part of the country. So, this study had thrown some light to know about the magnitude of depression among geriatric population in Block Hazratbal which is the field practice area of Government Medical College, Srinagar, which could be used for designing and developing a comprehensive rehabilitation plan for such fragile and neglected age group.

There were many screening instruments available to detect depression among the elderly. One of the most widely used instruments is the Geriatric Depression Scale. The Geriatric Depression Scale (GDS-30) is found to have 92% sensitivity and 89% specificity when evaluated against diagnostic criteria. The validity and reliability of the tool has been supported through clinical practice and research [15,16].

Some researchers in a cross-sectional study on Prevalence of Depression among the Elderly in Sepang, Selangor using Geriatric

Depression Scale (GDS- 30). In this study the prevalence of depression among the elderly respondents was 7.6%. The prevalence of Depression was significantly higher among the elderly who were unemployed. However, the other socio demographic factors were not significantly associated with depression [17].

A group of epidemiologists conducted a cross-sectional, observational, community-based study for a period from April 2009 to September 2009 for studying prevalence of depression in the geriatric age group was done. In this study the prevalence of depression was 47%. The depression was high among the elderly who were aged 80 years and above (54.3%), females (56.5%), illiterates (59.0%), those who were below the poverty line (86.1%), those who were living alone (87.3%), those who were economically partially dependent (63.3%) and those depended totally for the activities of daily living (100.0%). These factors were significantly associated with depression and it was inferred that prevalence of depression was found to be positively associated with increasing age, the female sex, illiteracy, a low socio-economic status, those who were living alone, those who were economically partially dependent and those who were totally dependent for the activities of daily living [8].

Similarly, other researchers conducted a Cross sectional Study on depression in Pondicherry. This study aimed to establish the nature, prevalence and factors associated with geriatric depression in an urban south Indian community. Hundred individuals in the geriatric age group were randomly selected from among the members list of the Vilianur senior citizens society. They were administered the Geriatric depression scale and the results were compiled and analysed by Chi² with Yates correction using the statistical software SPSS [18].

Prevalence of geriatric depression was 98% with 78% mild and 20% severe depression. Majority were from the lower socio-economic status. The prevalence of mild depression among males was 80.8% and it was 75.4% among females while 14.8% males had severe depression as compared to 24.5% of the females. Looking at the sleep patterns, again the proportion of severe depression was significantly higher among the ones that had a disturbed sleep (25.4%) when compared to those with a satisfactory sleep pattern (10.8%). The proportion of severe depression was significantly higher among those participants whose spouse had expired (38.8% vs. 8.1%) Geriatric depression is highly prevalent in this urban community. Higher age, disturbed sleep pattern, death of spouse etc. were some of the factors that had an association with chances of depression [18].

Study design

A community based, cross sectional study.

Study population

Elderly (≥ 60 years) persons residing in selected geographical area were included in the study after sample calculation, taking the prevalence of morbidity as 47% [8].

Inclusion criteria

- Permanent residents of Kashmir valley.
- Age 60 years and above.

Exclusion criteria

Geriatric population who refuse to give informed consent for the study.

Study area

Medical Block Hazratbal was taken as the study area. It is predominantly an urban block with small proportion of rural and tribal mix. It is situated about 12 kilometers from the city center and is under the administrative control of Department of Community Medicine, Government Medical College, Srinagar. As per the Block survey report of April 2013, the population of the block is about 75,083. It comprises of 59 villages/mohallas and for administrative convenience, the block has been divided into 4 zones-Hazratbal, Harwan, Nishat and Tailbal, comprising of 16 health centers (Sub-centers, primary health centers). Zone-wise distribution of health centers in Table 1.

Nishat Zone	Harwan Zone	Hazratbal Zone	Tailbal Zone
NTPHC Nishat	NTPHC Harwan	PHC Hazratbal	NTPHC Tailbal
s/c Ishber	s/c Dhara	s/c Takinwaripora	s/c Kashipora
s/c Abi-dal	s/c Saidpora	s/c Shanpora	-
-	s/c Darbagh	s/c Nandpora	-
-	s/c Fakirgujri	s/c Dargah	-
-	s/c Theed	-	-

Table 1: Zone-wise distribution of health centers.

Study duration

The duration of study was one and a half year starting from 1st April 2015 to 30th September, 2016.

Sampling design

multistage random sampling.

Sample size

The sample size for the study was calculated by using the following formula at a 95% confidence interval, with an allowable error of 10%:

$$N = 4 p q / L^2$$

Where

N=a minimum sample size required.

p=the expected prevalence rate (%) of depression among the geriatric age group.

$$q = 100 - p (\%)$$

L=the margin of the sampling error allowed (%)/Allowable sampling error.

Thus, the sample size for the present study is determined as follows:

$$p = 47\%$$

$$q = 100 - p (\%)$$

$$L=10\% \text{ of the assumed/Expected prevalence of morbidity}$$

$$= \frac{10}{100} \times 47 = 4.7$$

$$N = \frac{(4 \times 47 \times 53)}{4.7 \times 4.7} = 451$$

Considering a non-response rate of 10 percent, the sample size needed

$$N = 451 \times 10\% = 45.1$$

Thus, the sample size of a 496 population of age 60 years and above was found to be sufficient for the purpose of the study.

Multi-stage random sampling was used for sample selection. In the first stage 50% health centers were chosen randomly from each zone using lottery method. The selected health centers were PHC Nishat and s/c Ishber (zone Nishat), PHC Harwan, s/c Dhara and s/c Theed (zone Harwan), PHC Hazratbal, s/c shanapora and s/c Nandpora (zone Hazratbal) and s/c Kashipora (zone Tailbal). In the second stage, requisite numbers of study units were selected from each selected health center by the following method. We moved to the central part of the selected area and chose a starting direction randomly. The first household in that direction was chosen. After visiting the household, we enquired about people 60 years and above and these subjects were included in the study. Age was confirmed by their birth certificate or voter identity card or with the help of local events calendar in case the birth certificate or voter identity card was not available. The households, in which the elderly member was not present at the time of visit, were re-visited at least twice to ensure participation. Then we moved in a predetermined random direction to the next adjacent house and repeat the activity till the requisite number of samples was achieved.

All the selected subjects were informed about the objectives of the study. A proper written informed consent was taken from the selected subjects who agreed to participate in the study. Then relevant information about their socio demographic variables, chronic ailments and depression was obtained by administration of study tool (Questionnaire). A detailed history and clinical examination were also done of the selected subjects.

Procedure

The identified 496 elderly subjects were interviewed in their local/ Urdu language and they were examined by using a pre-tested, pre-structured study questionnaire. The questionnaire was divided into two parts. The first part comprised of the socio-demographic information which covered a diverse set of parameters such as age, sex, marital status, education, socio-economic status, Non-communicable diseases, living conditions, economic dependency and the dependency for the activities of daily living, impact of turmoil caused due to conflict in the state. This part of the study was validated through pilot study in which 100 study subjects were interviewed and examined. In second part Geriatric Depression Scale (GDS 30-item) was used to measure depression in geriatric population in the selected sample population.

Study tools

There were many screening instruments available to detect depression among the elderly. One of the most widely used instruments is the Geriatric Depression Scale. The Geriatric Depression Scale (GDS) (30-item) was chosen as the study instrument in this study as it has been shown to have high sensitivity and specificity. Koenig et al. 16 reported that the GDS had a sensitivity of

92% and a specificity of 89%. It has also been proven to be a valid instrument and is widely used for evaluating depression in the elderly [15,16].

Participants scoring ≥ 10 -19 on GDS 30 score were termed as found positive for mild depression and $\geq 20 - 30$ were termed as severe depression. Participants with Mild/ Severe Depression on GDS Scale were further clinically examined by Psychiatrist from Psychiatric Hospital Govt. Medical College Srinagar for confirmation of diagnosis of depression and further management.

Statistical analysis

The data obtained was entered into Microsoft Excel and analysed using statistical software (SPSS version 20). Frequencies were obtained using descriptive statistics. Chi-square test was used to see the association between two categorical variables and other tests of analysis were used to obtain results. A p-value of less than 0.05 was considered statistically significant.

Variables	Chi-square value	p-value
Age	$X^2=37.611$	$p<0.001$
Sex	$X^2=18.89$	$p<0.001$
Education	$X^2=55.116$	$p<0.001$
Current Occupation	$X^2=54.786$	$p=0.098$
Marital Status	$X^2=35.933$	$p<0.001$
Socio-economic scale (Modified kuppuswamy scale updated April 2016)	$X^2=60.035$	$p<0.001$
Type of Family	$X^2=2.783$	$p=0.095$
Economic dependence	$X^2=52.199$	$p<0.001$
Dependency for the Activities of daily living	$X^2=21.997$	$p<0.001$
Tobacco consumption	$X^2=2.753$	$p=0.097$
Expected Care given by children	$X^2=46.692$	$p<0.001$
Relationship with spouse	$X^2=7.678$	$p<0.017$

Table 3: Relationship of depression with different variables in the study population.

Discussion

Socio-demographic profile of the elderly

The demographic transition in India is predicted to transform the current population “Pyramid” into a “Pillar” by the year 2050, this geriatric boom needs a greater demand on already overstretched burden on health budget and has been identified as one of the top challenges under primary health care [19]. In the past WHO has highlighted the issue of geriatric health over the years, with World Health Day theme as “Add life to years” in 1982, and Healthy living: Everyone a winner in the year 1986, then active aging- makes the difference in 1999 and the recent one ageing and health: Good health adds life to years in the year 2012 [20].

In the present study, it was found that 156 (31.5%) of elderly were suffering from depression. 27.2% of elderly study subjects had Mild depression, whereas only 4.2% study subjects had severe depression as

Results

Geriatric Depression Scale Category	No. of Elderly (N)	Percentage (%)
Mild Depression	135	27.2
Severe Depression	21	4.2
Normal	340	68.5
Total	496	100

Table 2: Prevalence of depression as per geriatric depression scale category (GDS).

27.2% of elderly study subjects had Mild depression, whereas only 4.2% study subjects had severe depression as per Geriatric Depression scale.

per Geriatric Depression scale. Elderly people labelled as depression on the GDS scale were referred to Psychiatrist for further evaluation and management.

As the age advanced prevalence of depression was seen highest 60% in 80 years and above age group and lowest 21.2% in 60-69 years of age group. The difference was found statistically highly significant. ($p<0.001$) (Table 2). Using the GDS scale by Swarnalatha et al. in their study found prevalence of depression was 47% in geriatric population. The depression was high among the elderly who were aged 80 years and above (54.3%) [8].

Male dominant traditional societies in which control of sources of finances is exclusively with males along with low educational level in females may contribute to more economical dependence. In present study, it was observed that depression was more common in females (68.5%) as compared to males (31.5%). $p<0.001$. Both categories of depression were found to be more in elderly females than elderly males (Table 3). The prevalence of severe depression in elderly females (7.1%)

was almost eight times greater as compared to elderly males (0.9%). In other studies also it was seen that more female elderly were depressed as compared to males [21-23]. Prakash et al. found 42% of elderly had psychosocial problems in which the number of females was high (48%) as compared with males (37.8%) [24]. Education and occupation statuses of the elderly are important factors associated with depression in old age. In our study it was observed that the prevalence of depression was seen highest 147 (41.1%) in elderly study subjects who were illiterate and lowest in literates 9 (6.5%). The difference was statistically significant ($p < 0.001$). And also, prevalence of depression was seen highest (54.2%) in weavers, followed by retired persons (46.7%), followed by homemakers (38.8%) in elderly study subjects.

Multiple logistic analysis revealed in a study that the significant independent predictors of depression were higher age, low education and financial dependence, unemployment and illiteracy were also seen to be associated factors in other studies [25].

In our study, it was found that the prevalence of depression was more common among elderly study subjects who were living single (56.8%) as compared to currently married (25.4%) in elderly study subjects. The relationship was found statistically highly significant ($p < 0.001$). Jariwala et al. in their study has seen depression in elderly to be significantly associated with gender, low financial support, illiteracy and marital status [21].

In this study, it was found that the prevalence of depression in elderly study subjects was seen highest (49.8%) in upper lower class (IV), and lowest (13.5%) in upper/upper middle class (I & II). And their relationship was statistically highly significant ($p\text{-value} < 0.001$). Goel et al. in their study revealed that elderly belonging to socioeconomic class V was associated with increasing risk of depression significantly (0.033) [26]. Other research workers also have shown that depression is associated with poor socioeconomic status [26-29].

In our study, it was found that 54.5% of study subjects belonging to Nuclear families had depression, while as only 30.9% of study subjects belonging to joint families had depression. But the association is not statistically significant ($p = 0.095$). Ather et al. in their study found that elderly subjects living in a nuclear family system were 4.3 times more likely to suffer from depression than elderly subjects living in a joint family system [30].

In this study, it was found that the prevalence of depression was seen highest (42.7%) who are economically totally dependent in study subjects and lowest (8.8%) in economically independent study subjects. The difference was statistically highly significant ($p < 0.001$). A study at Bengaluru for prevalence of depression, it was significantly more i.e., 70% in medium standard of living index group as compared to 28.9% from high standard living index group. Other research workers also have shown that depression is associated with poor socioeconomic status [21,27-29].

In our study, it was found that the prevalence of depression was highest (71.4%) amongst partially/totally dependent for activities of daily life in study subjects and was lowest (29.1%) amongst independent for activities of daily life in the study subjects. The difference was statistically highly significant ($p < 0.001$). Some researchers found in their research the score of GDS and the severity of depression decreased with increasing scores on activities of daily living and IADL scales (for each, $p < 0.05$) [31].

In this study it was seen that the prevalence of depression was highest (33.8%) amongst ex/non-tobacco consumer elderly study subjects and lowest (26.4%) amongst current tobacco consumer. And the difference was not statistically significant ($P = 0.097$). Some researchers in their study found that association between tobacco use and depression was statistically significant, and the strength of association was moderately strong ($\phi: 0.29$) which was totally different from my observations [32].

In this study it was found that the depression was more prevalent in study subjects who were not being looked properly by their children (74%) compared to (26.7%) who were looked properly by their children. The difference was found statistically highly significant ($p < 0.001$). Similar findings were seen by Researchers Prince et al. in their study that social support deficits had a strong association with depression in elderly [33].

The prevalence of depression was seen more 80.0% who do not have good relationship with spouse, compared to 25.3% who had good relationship with spouse. The difference was found statistically significant ($p < 0.017$).

Conclusion

Overall prevalence of depression was fairly high among the elderly subjects in this part of the world. Depression was more common in females as compared to males. Advanced age, illiteracy, occupations like weavers, home makers and retired persons, marital status, socio-economic class, family pattern, economic dependence, dependence for activities of daily living, children, expected care givers, relationship with spouse are the strong predictors on the prevalence of depression in the elderly.

Recommendations

Screening for depression in elderly patients should be done regularly in primary care settings. It is recommended that a holistic approach should be adopted for preventing underlying causes of depression amongst elderly study subjects. There is need of strengthening the existing "package" of services for elderly under various initiatives and programs by means of IEC (Information Education and Communication) and BCC (Behavioral Change Communication) especially to bring a social change targeting towards the elderly. Since depression in older adults and the elderly is often the result of a difficult life situation or challenge, any treatment plan should address that issue. The findings of our study could guide community-based program managers to devise and implement effective and timely mental health interventions for older adults, in order to prevent geriatric depression and develop a comprehensive strategy for its early diagnosis and management.

Limitations

Though this study was a community-based prevalence study and we do realise it needs to have a follow-up after the intervention by the psychiatrist but due to time constraint and resources we could not follow-up the study subjects.

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