

FREQUENCY AND PREDICTORS OF DEPRESSION AMONG ELDERLY OF RAWALPINDI PAKISTAN

Abrar Hussain Azad¹, Sadaf Hasan², Shaaray Abrar Umar³

¹ Department of Community Medicine Islamabad Medical and Dental College, Islamabad-Pakistan

² Department of Physiology, Islamabad Medical and Dental College, Islamabad-Pakistan

³ Coordinator at Abrar Umar Organization.

Address for correspondence:

Dr. Abrar Hussain Azad

Assistant Professor,
Department of Community Medicine, Islamabad Medical and Dental College, Islamabad-Pakistan.

E-mail: drabrarumar@yahoo.com

Date Received:

August 06, 2014

Date Revised:

November 28, 2015

Date Accepted:

December 11, 2015

ABSTRACT

Objective: To determine the frequency of depression and identify predictors of depression in elderly.

Methodology: This cross-sectional study was conducted in Holy Family Hospital Rawalpindi during a three months period from October 2013 to December 2013 among elderly coming to outdoor patient department. Patients and their attendants of age 64 or above were included in the study. 209 patients were selected by consecutive sampling technique. Questionnaire included socio-demographic profile and geriatric depression scale (GDS) scale consisting of 15 items. Analysis was done by utilizing SPSS16. Descriptive statistics were performed. The results were recorded as frequencies. P-values were obtained and results were depicted in form of tables and figures. Chi-square test and Fisher's exact test were applied to the data to calculate the association.

Results: A sample of 209 was studied and depression was found to be present in 28.71%. There was no statistically significant relationship between education, intimacy, sleep, having children or having not, financial support and depression (P-value > 0.05). The analysis showed that there was a significant relationship between gender, people ever diagnosed for depression in life, persons having suicidal ideas at least once in life, poor marital relationship, monthly income between Rs10,000 to 30,000, elderly having no care giver and depression (P-value < 0.05).

Conclusion: High frequency of depression was found among elderly community and diversity exists in predicting factors.

Key Words: Prevalence, Depression, Depressive illness, Elderly, Pakistan

This article may be cited as: Azad AH, Hasan S, Umar SA. Frequency and predictors of depression among elderly of Rawalpindi Pakistan. *J Postgrad Med Inst* 2016; 30(1): 35-40.

INTRODUCTION

In developing countries depression is a disease of immense public health importance. By the year 2020 depression will be the significant cause of disability adjusted life years in developing world¹. Elderly are more susceptible to it². Prevalence of depression is found to be 12% by EURODEP consortium of studies using the GMS-AGECAT, Geriatric Mental State Examination-Automated Geriatric Examination for Computer-Assisted Taxonomy system algorithm³. Family history of depression is considered as risk factor for depression in old age. Persons having history of depression in any relative or early episodes of depression are more likely to have depression in old age⁴. Depending upon the symptoms, depression can be minor or major; however it's a common problem for elderly people⁵. Even in developed countries depression is undertreated and under diagnosed⁶. In middle and high income communities depression prevails more in elderly than in adolescents⁷. Due to scientific development and public health

awareness life expectancy is increased over the years with more people in elderly phase than before. There is a simultaneous fall in fertility rate. This resulted into a shift leading to increased number of geriatric population⁸. Pakistan with 180 million⁹ population and dependency ratio 0.75¹⁰ has chronic disease burden attributing 42% of all deaths⁹. In primary care setup depression is under diagnosed and undertreated¹⁰. The fate of elderly depression is incomplete recovery with higher relapse¹¹. The elderly having depression show overall poorer functioning than those with heart disease, hypertension or diabetes¹². Weaker health system with no specific elderly clinics, declining social moral standards, lack of old age benefits, mechanical life, decreased harmony with nature, competitive life style, disposable culture and injustice all throw the individuals into valley of depression, sometimes for all the life years to follow¹³. India showed point prevalence between 13 to 25%¹⁴.

Many studies in Pakistan showed high level of prevalence of anxiety and depression. Mirza and Jenkins

declared mean prevalence of anxiety and depression in community studies to be 34 to 66%^{15, 16}.

METHODOLOGY

A cross sectional study was conducted among elderly coming to outdoor patient department (OPD) of Holy Family Hospital Rawalpindi (HFH), a tertiary care hospital. Patients here come from different walks of life with a diverse family background and social status. All the subjects, patients and their attendants of age 64 or above were included in the study. Subjects were selected by consecutive sampling technique. Interviews were conducted by trained workers with the help of an NGO, Abrar Umar Organization. Informed consent was taken and strict confidentiality was ensured. Questionnaire includes socio-demographic profile and GDS. A pilot study was conducted on 30 subjects after translating the scale in Urdu for better understanding of most of the subjects. The questionnaire contained the characteristics like age, sex, education, intimacy, suicidal ideas, sleep, quality of marital relation, family income, having children or not, care giver and financial support. Geriatric Depression Scale consists of 15 items each having response yes or no. The cut off score for depression was 10 and above. Analysis was done by utilizing SPSS 16. Descriptive statistics were performed. The results were recorded as frequencies. P-values were obtained and results were depicted in form of tables and figures. Chi-square test and Fisher's exact test were applied to the data to calculate the association. Joint family is defined as having two to three nuclear families in it while nuclear family is a unit having parents and their dependent children. A single married or unmarried person was taken as a nuclear family.

RESULTS

A sample of 209 patients was studied and depression was found in 28.71 % (Fig.1). Males were 56.5% (n=118) and females 43.5% (n=91). 12.6% (n=25) were illiterate, 3.5% (n=7) could read or write, 5.5% (n=11) were having primary education, 11.1% (n=22) were middle, 53.8% (107) are matriculate or inter, 12.9% (n=27) were graduate or above. 55.1% (n=113) were having some intimate relationship that is close, familiar, and affectionate personal relationship but other 42.9% (n=88) were not having such kind of relationship.

Suicidal ideas were found in 30.8% (n=60) of respondents.

71.5% (n=123) have noticed a fall in total number of sleeping hours over the time, 4.3% (n=9) have noticed an increase in sleeping hours and 19.1% (n=40) have not noticed any change. 32.7% (n=32) of married couples have happy marital relationship while 67.3% (n=66) have the poor one. 48.3% (n=100) have in income below Rs. 10,000 per month, 17.9% (n=37) were having

income between Rs. 10,000 and 30000 per month and 33.8% (n=70) were having monthly income Rs. 30,000 or above. 93.8% (n=183) were having children and 6.2% (n=12) were not having children. 60.8% (n=127) were having a care giver but 39.2% (n=82) were not having care givers. 40.2 % (n= 84) were only self supported and 59.8 % (n=125) were having financial support from other sources. Prevalence of depression was more common among females 49.4% (n=45) as compared to males 12.7 % (n=15). Depression was more common in illiterate persons 40.0 % (n=10) as compared to other qualifications like middle, matriculate and graduate ones. Depressive symptoms were more common among those having no intimate relationship 36.3% (n=32) than having intimacy 23.0% (n=26). Of those who are declared to be depressed in this study 69.2% (n=18) were diagnosed for depression at least once in their life time. Of depressed 51.6% (n=31) were having suicidal ideas or tendencies at least once in their life time. Depression was more common in persons with decreased sleep 34.1% (n=42) than those with increased sleep 11.1% (n=1) or unchanged sleeping pattern 17.5% (n=7) (Table 1). Depression was more common 15.5% (n=5) in individual who are facing poor marital relationship than those who were enjoying happy marital relation 15.1% (n=7). Depression was more prevalent among those with family income between Rs. 10,000 to Rs. 30,000 40.5% (n=15) compared to those having monthly income less than Rs 10,000 36.0% (n=36) and those with 30,000 or above 12.8% (n=9). Depression was more common among those having children 31.6% (n=58) compared to those not having 16.6% (n=2) among those having no care giver 51.2% (n=42) compared to those having it 14.1% (n=18) among those having other source of financial support 32.0% (n=40) compared to those who are self supported 23.8% (n=20). (Table 2)

The analysis shows that there was no statistically significant relationship between education, intimacy, sleep, having children or having not, financial support and depression (P-value >0.05). The analysis shows that there was a significant relationship between gender, people ever diagnosed for depression in life, persons having suicidal ideas at least once in life, poor marital relationship, monthly income between Rs. 10,000 to 30,000, elderly having no care giver and depression (P-value < 0.05). (Table 1 and Table 2)

DISCUSSION

Though depression is often considered to be normal response of aging but it has heavy impact on elderly health¹⁷. Epidemiological transition and aging has lead to an increased prevalence of geriatric depression¹⁸. Elderly depression may be the 2nd biggest cause of burden of diseases in developing world in 2020¹. The present study was conducted to determine prevalence and pre-

Figure 1: Frequency of Depression

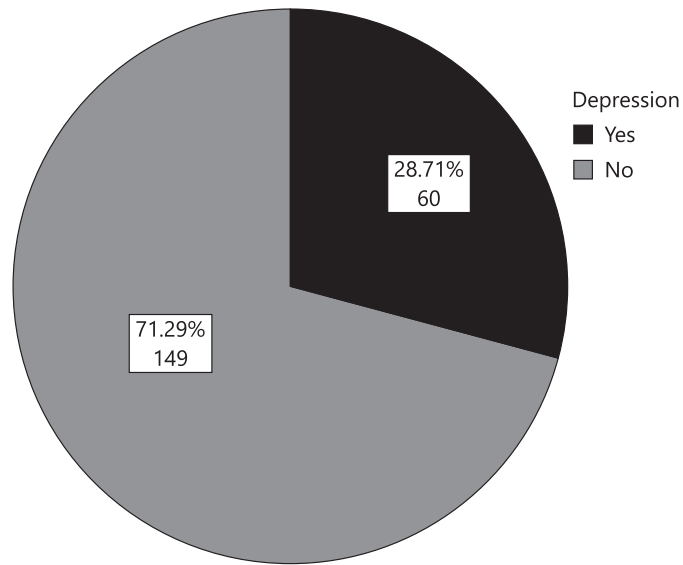


Table 1: Comparison of depression with respect to, gender, education, intimacy, suicidal ideas and sleep.

Characteristics	Depression		p-value
	Yes n (%)	No n (%)	
Gender			
Male	15(12.7%)	103 (87.3%)	*0.000
Female	45 (49.4%)	46(50.5%)	
Education			
Illiterate	10(40.0%)	15(60.0%)	**0.094
Can read and write	0(0.0%)	7(100%)	
Primary	0(0.0%)	11(100%)	
Middle	7(31.8%)	15(68.1%)	
Matric	34(31.7%)	73(68.2%)	
Graduate	7(25.9%)	20(74.0%)	
Intimacy			
Yes	26(23.0%)	87 (76.9%)	**0.051
No	32(36.3%)	56(63.6%)	
Ever diagnosed with depression			
Yes	18(69.2%)	8(30.7%)	*0.000
No	40 (23.6%)	129(76.3%)	
Suicidal ideas once or more in life			
Yes	31(51.6%)	29(48.3%)	*0.000
No	27(19.9%)	108(79.9%)	
Sleep			
Decreased	42(34.1%)	81(65.8%)	**0.063
Increased	1(11.1%)	8(88.8%)	
Same	7(17.5%)	33(82.5%)	

Table 2: Comparison of depression with respect to marital relation, family income, having children, care giver and financial support.

Characteristics	Depression		p-value
	Yes n (%)	No n (%)	
Marital Relation			
Happy	5(15.1%)	28(84.8%)	*0.012
Poor	7(15.5%)	38(84.4%)	
Family Income (in rupees)			
Below 10000	36(36.0%)	64(64.0%)	*0.001
10000-30000	15(40.5%)	22(59.4%)	
Above 30000	9(12.8%)	61(87.1%)	
Having Children			
Have	58(31.6%)	125(68.3%)	**0.350
Have not	2(16.6%)	10(83.3%)	
Caregiver			
Yes	18(14.1%)	109(85.8%)	*0.000
No	42(51.2%)	40(48.7%)	
Financial Support			
Other sources	40(32.0%)	85(68.0%)	**0.216
Self	20(23.8%)	64(76.1%)	

dictors of depression in elderly. In our study frequency of depression was found to be 28.71%. There has been diversity in prevalence of depression in different studies depending upon the cultural, sociopolitical and racial factors. In another study conducted previously prevalence of depression was 29.36% of which 22.48% were mildly depressed and 6.88% were having major depression¹⁷. A different finding was observed in a study where scores on GDS indicated elevated level of depression symptomology with 67.1% scoring above cut off for depression¹⁹. Other studies conducted determined the prevalence as 31.7%¹⁸, 47.5%²⁰, 12.94%²¹ 21.7%²², 41.1% and 45.8% in urban and rural community respectively²³. The median prevalence rate of depressive disorders in the world for the elderly population was determined to be 10.3%. The median prevalence rate of depression among the elderly Indian population was determined to be 21.9%²⁴. In our study prevalence of depression was more common among females 49.4% as compared to males 12.7%. Other studies in different regions of world showed similar results. Females 31.39% were more affected than males 25.93%¹⁷. Depression was high in females in multiple studies as 37.5%¹⁸, 57.1% as compared to males 35.3%²⁵, 46% as compared to males 36.7%²⁰. Geriatric depression was significantly associated with female sex²³. Few studies showed no significant association between depression and gender^{26, 21}. In studies conducted previously, income and education level proved to be major predictors for depression in elderly. In our

study depression was more prevalent among those with family income between Rs. 10,000 to Rs 30,000 40.5% as compared to those having monthly income less than Rs 10,000, 36.0% and those with 30,000 or above, 12.8%. It could be due to the fact that middle class is more concerned about meeting their life standards as compared to the poor one. An inverse relationship was found between socioeconomic condition and depression with depression being higher in low socioeconomic condition 60.93%¹⁷. In a study conducted previously depression was high in low socioeconomic group 34%¹⁸. In another study depression was significantly associated with income¹⁹. Depression was significantly associated with social problems $p < 0.001$ ²⁰ in a study conducted in Khartoum State. Socioeconomic condition remained a modifiable risk factor in another study²⁷. Years in education, household income and intellect were included in step 1 as covariates, and accounted for 19% of the variance in depression²⁶. Elderly having less income were 33.31% more depressed than other income groups²¹. Socioeconomic status was significantly associated with prevalence of depression²³. It was hypothesized that better education will protect against depression in elderly. In our study depression was more common in illiterate persons 40.0% as compared to other qualifications like middle matriculate and graduate ones. In a study conducted in Karnataka India 70.31% among illiterates were depressed as compared to 26.69% literates¹⁷. In a study conducted previously the rate of depression was

higher among illiterate/semiliterate 66.7% than those having secondary /university education 24.5%²⁵. Depression was significantly associated with level of education $p=0.015$, in a study in Khartoum state of Sudan, 50.0% of illiterate were depressed²⁰. Education, household income and intellect were included as covariates, and accounted for 19% of the variance in depression²⁶. When analyzed according to educational status significant differences were found between groups in some quality of life parameters (physical functioning, social functioning, mental health and bodily pain). Low educational status, reduced quality of life and increased level of depression²⁸. In a study in urban area of Maharashtra India illiterates were more depressed 16.46% than literates 15.71% though the association was not significant²¹. In still another study geriatric depression was significantly associated with illiteracy 0.015 in an urban set up²³.

In this study depressive symptoms were more common among those having no intimate relationship 36.3% than having intimacy 23.0%. Many studies analyzed the rate of depression high in those who live alone. Controlling confounders by multiple logistic regression, we found that depression was three times more in elderly with social problems (inability to visit friends and relatives ,being worried about children, feeling lonely, having no friends) $p < 0.001$, 73% of those with social problems were depressed²⁰. In a systematic review done on 74 community-based mental health surveys on depression in geriatric population, living alone was found to be a modifiable risk factor²⁷. In our study depression was more common among those having children 31.6% compared to those not having 16.6%. Similar results were observed in a study where elders living with their off springs have depression 68.4% as compared to who lived in elderly homes 36.4%²⁵. Opposite findings were observed in other studies^{21,23}. Depression was more common 15.5% in individual who are facing poor marital relationship than those who were enjoying happy marital relation 15.1% in this study supported by many other studies. (Table.1 and Table.2) show other predictors and their association with depression in elderly.

CONCLUSION

There is no statistically significant relationship between education, intimacy, sleep, having children or having not, financial support and depression (P value > 0.05). The analysis shows that there was a significant relationship between gender, people ever diagnosed for depression in life, persons having suicidal ideas at least once in life, poor marital relationship, monthly income between Rs. 10,000 to 30,000, elderly having no care giver and depression (P value < 0.05). There is a strong need of regular and systemic counseling and guidance of elderly. Community and non- government organiza-

tion in collaboration with public health system can play a vital role to combat the problem.

REFERENCES

1. World Health Organization and World Organization of Family Doctors (Wonca): Integrating mental health into primary care - A global perspective. Geneva, Switzerland: WHO; 2008. http://www.who.int/mental_health/resources/mentalhealth_PHC_2008.pdf
2. Ganatra HA, Zafar SN, Qidwai W, Rozi S. Prevalence and predictors of depression among an elderly population of Pakistan. *Aging Ment Health* 2008; 12:349-56.
3. McDougall FA, Matthews FE, Kvaal K, Dewey ME, Brayne C. Prevalence and symptomatology of depression in older people living in institutions in England and Wales. *Age Ageing* 2007; 36: 562-8.
4. Rockville MD. Depression and Older Adults: Key Issues US. Department of Health and Human Services Substance Abuse and Mental Health Services Administration. HHS Publication U.S; 2011.
5. Satcher D: Executive summary: a report of the Surgeon General on mental health. *Public Health Rep* 2000; 115:89-101.
6. Maletta G, Mattox KM, Dysken M. Update 2000. Guidelines for prescribing psychoactive drugs. *Geriatrics* 2000; 55:65-79.
7. Paukert LA, LeMaire A, Cully JA. Predictors of depressive symptoms in older veterans with heart failure. *Aging Ment Health* 2009; 13:601-10.
8. Bhamani MA, Karim MS, Khan MM. Depression in the elderly in Karachi, Pakistan: A cross sectional study. *BMC Psychiatry* 2013; 13:181.
9. World Health Organization. Facing the Facts: The Burden of chronic disease in Pakistan. WHO; 2005. http://www.who.int/chp/chronic_disease_report/media/
10. Bruce ML, McAvay GJ, Raue PJ, Brown EL, Meyers BS, Keohane DJ, et al. Major depression in elderly home health care patients. *Am J Psychiatry* 2002; 159:1367-74.
11. Mitchell AJ, Subramaniam H. Prognosis of depression in old age compared to middle age: a systematic review of comparative studies. *Am J Psychiatry* 2005; 162: 1588-601.
12. Cole MG, Dendukuri N. Risk Factors for Depression. Among Elderly Community Subjects: A Systematic Review and Meta-Analysis. *Am J Psychiatry* 2003; 160:1147-56.
13. Mubeen SM, Henry D, Nazimuddin Qureshi S. Prevalence of Depression Among Community Dwelling Elderly in Karachi, Pakistan. *Iran J Psychiatry Behav Sci* 2012; 6:84-90.
14. Barua A, Acharya D, Nagaraj K, Vinod Bhat H, Nair S. De-

- pression In Elderly: A Cross-Sectional Study In Rural South India. *J Int Med Sci Acad* 2007; 20: 259-61.
15. Mirza I, Jenkins R. Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: systematic review. *Br Med J* 2004; 328:794.
 16. Mumford DB, Saeed K, Ahmad I, Latif S, Mubbashar MH: Stress and psychiatric disorder in rural Punjab. A community survey. *Br J Psychiatry* 1997; 170:473-8.
 17. Prachet R, Mayur SS, Chowti JV. Geriatric depression scale: A tool to assess depression in elderly. *Int J Med Sci Public Health* 2013; 2:31-5.
 18. Sundru M, Goru K. Epidemiological study of depression among population above 60 years in Visakhapatnam, India. *Int J Med Sci Public Health* 2013; 2:695-702.
 19. Cummings S, Sull L, Davis C, Warley N. Correlates of Depression among Older Kurdish Refugees. *Soc Work* 2011; 56:159-68.
 20. Assil SM, Zeidan ZA. Prevalence of depression and associated factors among elderly Sudanese: a household survey in Khartoum State. *East Mediterr Health J* 2013; 19:435-40.
 21. Yadav SP, Doibale MK, Aswar NR, Inamdar IF, Sonkar VK, Gadekar RD. Assessment of socio demographic correlates of depression among the elderly in an urban area in Maharashtra. *J Evol Med Dent Sci* 2013; 2:9895-900.
 22. Barua A, Kar N. Screening for depression in elderly Indian population. *Indian J Psychiatry* 2010; 52:150-3.
 23. Arumugam B, Nagalingam S, Nivetha R. Geriatric depression among rural and urban slum community in Chennai-A cross sectional study. *J Evol Med Dent Sci* 2013; 2:795-801.
 24. Barua A, Ghosh M, Kar N, Basilio M. Distribution of depressive disorders in the elderly. *J Neurosci Rural Pract* 2010; 1: 67-73.
 25. El Kadi HM, Ibrahim HK. Depression among a group of elders in Alexandria Egypt. *East Mediterr Health J* 2013; 19:167-74.
 26. Wongpakaran N, Wongpakaran T, van Reekum R. Social inhibition as a mediator of neuroticism and depression in the elderly. *Br Med Coll Geriatr* 2012; 12:41.
 27. Barua A, Ghosh MK, Kar N, Basilio MA. Socio-demographic factors of geriatric depression. *Indian J Psychol Med* 2010; 32:87-92.
 28. Akyol Y, Durmus D, Dogan C, Bek Y, Canturk F. Quality of life and level of depressive symptoms in the geriatric population. *Turk J Rheumatol* 2010; 25:165-73.

CONTRIBUTORS

AHA conceived the idea, planned the study, and drafted the manuscript. SH helped acquisition of data and did statistical analysis. SAU drafted and critically revised the manuscript. All authors contributed significantly to the submitted manuscript.