

## Depression and risk factors among elderly population of central Punjab, Pakistan

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**Objective:** To examine the prevalence of depression among elderly and find the risk factors of depression.

**Methodology:** Out of 2.9 million elderly population of central Punjab, 6% were taken for this cross sectional study. Sample consisted of 624 elderly men and women using Multistage sampling method. Interview schedule and Geriatric Depression Scale (GDS-15) were used to collect data. Depression was measured by Geriatric Depression Scale (GDS-15) and Logistic regression analysis was applied to determine factors associated with depression.

**Results:** Depression was found in 22.3% elderly. More depression was noted among elderly

females than males, while no variation was estimated between urban and rural community. Logistic regression analysis found that different independent factors, including age, economic dependency, health status and family behavior were associated with depression.

**Conclusions:** This significant prevalence of depression among elderly indicates an alarming increase of depression. Therefore, efforts should be made to gauge this burden of depression at community level and made comprehensive plan of action to address the geriatric mental health issues. (Rawal Med J 201;42:571-574)

**Keywords:** Elderly, depression, economic dependency.

### INTRODUCTION

Depression is an emerging public health problem, which is estimated to affect 340 million people throughout the world. Depression among elderly is common, with a prevalence ranging from 4% to above 30%. The percentage of older persons is growing rapidly, which will make depression among elderly even more frequent than it is today. It is estimated that one in seven elderly is affected by depression. Multiple factors have been recognized as determinants of depression in old age. Among socio-demographic factors, gender and community is found to be significantly associated with depression. The low socioeconomic status has significant role in triggering the depression in late age and elderly with low status have depression. The poor older people become more victims of depression, as they have no resources to encounter or cope with these routine life stressors. This financial difficulty is associated with psychological distress throughout the life course.

Considerable work has been done on prevalence and

risk factors of depression among elderly in developed countries but in Pakistan only a few studies have been conducted on depression among elderly. A cross sectional study in Pakistan by Mirza and Jenkins reported that the percentage of anxiety and depressive disorders in the community was 34-66%. In Pakistan, large number of psychological, social and physical health problems have been found and the majority of elderly are not satisfied with the available health care services. The aim of this study was to examine the prevalence of depression among elderly in Punjab and find the risk factors of depression.

### METHODOLOGY

This cross sectional study divided Punjab in three zones; Southern, Central and Northern Punjab. The central Punjab was selected by the researchers due to the diversity in changing life style, changing family patterns, cultural variation, modernization, mass media, urbanization and geographical proximity. The population of elderly was 2.9 million in central Punjab and 6% were taken for sample of

study comprising of four cities i.e. Gujrat, Sargodha, Kasur and Toba Tek Singh. The sample size was taken by using the formula  $N/1+Ne^2$  624 sample sizes was taken. In this formula N stands for Total population of elderly in central and e stands for Margin of error.

Multistage sampling method was used to take sample. At first stage, one-fourth i.e four districts from Central Punjab (total districts=16) were selected by applying simple random sampling technique. At the second phase, one tehsil from each already chosen district was selected through simple random sampling. Thirdly, urban and rural blocks/strata were selected from the respective tehsils. Each block had 250 households. By applying disproportionate stratified sampling technique, each block was divided into equal number of households i.e. 250. At fourth phase, the 60+ respondents were accessed by applying convenience sampling technique. In Pakistan, the house holds numbers and data are not properly arranged so at last stage the researcher had to follow the convenience sampling technique. Interview schedule and Geriatric Depression Scale (GDS-15) were used to collect data. It constitutes four sections i-e Socio-economic profile of the respondents, family attitude, risk factors of mental health problems and coping

mechanism of elderly. The 15-item Geriatric Depression Scale (GDS-15) developed in 1986, is short, less time taking version that has been considered to screen for depression among elderly.

**RESULTS**

The average age of respondent was 73 years. Majority of respondents were illiterate. 51.8% were residing in joint family system. The average family size was reported as 8 family members in each household. 72.7% of respondents were married. While discussing the working situation, it was found that half of the aged women did not have any job or monetary source, as in Pakistani culture majority of women were living as housewives. Half of the elderly males had their own independent source of income and rest of them was dependent on their offspring. The average family income and respondents' income was Rs. 19793 and Rs. 10289, respectively.

**Table 1. Prevalence of depression (n=624).**

Response	Number	Percentage
Depressed	139	22.3
Not depressed	485	77.7
Total	624	100.0

**Table 2. Gender wise level of depression - T-test (Gender and Depression).**

Levene's Test for equality of Variance		T- Test for Equality of Means							
F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Error Difference	95% Confidence Interval of the Difference		
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
TGDS	0.00		-9.1	490.572	0.00	-0.2853	0.03135	-0.3469	-0.2237

\*TGDS stands for the total depression rate estimated by using Geriatric depression Scale

It was found 485 (77.7%) did not suffer from depression whereas 139 (22.3%) were diagnosed depression by using the Geriatric Depression Scale (GDS-15) (Table 1). An independent-sample T-test was applied to compare depression with gender

(p=0.000). An independent-sample T-test was conducted to compare depression scores for urban and rural background. The value of significance level/p for Levene's test was ).848 (Table 2). It is larger than the

cut-off of .05; so there was no significant variation was observed between the depression of urban dwelling elderly and rural dwelling elderly.

**Table 3. Logistic Regression Analysis of factors associated with depression.**

TGD (Depression)	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
Intercept	9.211	1.480	38.755	1	.000			
Age	-.298	.107	7.749	1	.005	.742	.602	.916
Education	-.035	.257	.019	1	.892	.966	.583	1.599
Family System	-.234	.157	2.218	1	.136	.791	.581	1.077
Family Size	.138	.084	2.692	1	.101	1.149	.973	1.355
Economic Dependency	-2.992	.598	24.997	1	.000	.050	.016	.162
Respondent's Spouse	.074	.226	.108	1	.743	1.077	.692	1.677
Health Status	-.662	.213	9.703	1	.002	.516	.340	.782
Family Behaviour	-.523	.213	6.020	1	.014	.593	.390	.900
Undesirable events of life	.031	.223	.020	1	.888	1.032	.666	1.599

Multinomial Logistic Regression analysis of factors associated with depression included the nine independent variables (age, education, family system, family size, economic dependency, respondent's spouse, health status, family behavior and undesirable events of life). The results of regression analysis indicated that four variables i.e. age, economic dependency, family behavior and health status were associated with the dependent variable as p-value was less than 0.05 while educational status, family system, family size, respondent's spouse and undesirable events of life did not have significance (Table 3). All the independent variables having association with dependent variable may be considered as the risk factors of depression. Therefore, age, economic dependency, family behavior and Physical health status were the risk factors of depression and may cause in promotion of depression. The strongest predictor (independent variable) was economic dependency.

**DISCUSSION**

This study showed slightly less than one fourth (22.3%) depression rate among elderly, which is in line with a study conducted in Karachi, Pakistan. In 2009, Luni et al reported 44.1% prevalence of depression and anxiety among the elderly in a

Pakistani community. In the west, the occurrence of depression varies from 1% to 42% while the percentage of depression among Indian elderly has vided range i.e. from 6-50% in community setting. A clear variation was observed between the prevalence of depression between male elderly and elderly females. The current study confirmed the findings of the previous studies in Pakistan and other countries that the prevalence of depression is greater among female than male. Male's are egoistic in nature and do not express their feelings of distress while elderly females are more expressive. Mirowsky and Ross concluded that although women do express their feelings more freely than men, elderly females had more somatic complaints and related activities than do men. The results of this study presented no variation of prevalence of depression in the urban and rural community, which is similar to the survey conducted by Nizamuddin et al in central Punjab, Pakistan.<sup>16</sup>

Results of this logistic regression analysis show that age, health status, family behavior and economic dependency were correlated with depression. All theses associated factors were considered as risk factors of depression that causes to raise the depression level among elderly. The financial support to family was reported as a strongest predictor among risk factor of depression. Taqui et al.<sup>11</sup> reported that prevalence of depression was found two times more among unemployed or retired respondents than those who were engaged in any economic activity.

This study also showed a significant relationship between economic dependency and depression that is validated by the results of previous studies. Similarly, elderly who reported a lower living index also tended to have more depressive symptoms. This is similar to other studies, which documented that financial stress leads to psychological distress.

**CONCLUSION**

This significant prevalence of depression among elderly indicates an alarming increase of depression in Pakistani community, which recently constitutes 11.5 million elders persons (60+) and will go to rise to 50 million by 2050. A comprehensive plan of action should be made through the joint efforts of

health care department, social welfare department, government and non-governmental sector working in the field of senior citizens to perk up in the geriatric health especially in the domain of mental health.

**Author Contributions:**

Conception and design: Aaqib Shahzad Alvi  
 Collection and assembly of data: Aaqib Shahzad Alvi  
 Analysis and interpretation of the data: Aaqib Shahzad Alvi  
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