

## PREVALENCE OF DEPRESSION AND ASSOCIATED SOCIO DEMOGRAPHIC FACTORS IN ELDERLY RURAL POPULATION

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### ABSTRACT

#### OBJECTIVE

To determine the prevalence of depression in elderly rural population and analyze socio demographic factors associated with depressive symptoms.

#### STUDY DESIGN

Cross sectional study

#### PLACE OF STUDY

Bewal village Pakistan in October 2014.

#### SUBJECTS AND METHOD

The sample population comprised of 206 elderly people (60 years and above) living in village Bewal Pakistan. Beck Depression Inventory (BDI) was used to record the presence and severity of depressive symptoms. The following socio-demographic variables were taken on a separate sheet.

#### RESULTS

Out of 206 subjects 29.1% had no depressive symptoms, 27.2% had mild, 18% had moderate and 25.7% had severe depressive symptoms. With logistic regression, we found significant correlation between depressive symptoms and female gender, use of naswar and lack of social support.

#### CONCLUSION:

Prevalence of depressive symptoms is very high in our study which highlights the importance of developing good mental health care facilities for elderly rural population. Special attention should be paid on females, naswar users, and people who are having inadequate social support.

#### KEY WORDS

Depressive symptoms, Elderly, Rural, Risk Factors.

### INTRODUCTION

Depression has been recognized as one of the major public health problem. It causes severe physical and mental dysfunction and distress and has a population prevalence of 12.7% for men and 21.3% for women in USA.<sup>1</sup>

Advancement in medical science has increased the average age of human being. This increase in age has brought various challenges for geriatric health care professionals regarding both physical and mental health. In rural areas, often there are fewer facilities available for basic health care needs. Even rural populations of developed countries have more health related problems than urban areas and that includes both physical and mental health.

A study in US showed association between low socio economic status and depressive symptoms is high in rural areas, given the high prevalence of both depression and poverty and emphasized the need for good mental health services in this high risk population<sup>2</sup>. Study in china verifies that prevalence of depressive symptoms is common among Chinese rural elderly population<sup>3</sup>. Another study done in US concluded that the prevalence of depression is significantly high in residents of rural areas as compared with urban areas<sup>4</sup>. A study done in rural Malaysia concluded high prevalence of depression in older rural adults<sup>5</sup>. Another study in our neighboring country India showed similar results that depression, particularly mild depression, is common in this rural population of older adults<sup>6</sup>.

Many studies have reported a correlation with psychiatric disorders and other problems such factors as smoking<sup>7,9</sup>, drinking<sup>10</sup>, family structure<sup>11,12</sup>, parental relationships<sup>13,14</sup>, family income<sup>15</sup>, and family history of depression<sup>16</sup>. Stressors are also found to be correlated with psychiatric illness. These include the military<sup>17</sup>, family, worrying about the future<sup>18</sup>, and inadequate social support<sup>19-21</sup>.

Data are scarce in Pakistan regarding depression in elderly population. This study is first of its kind in this region to determine the prevalence of depressive symptoms and risk factors among elderly population of a rural area.

### METHOD

#### Participants

This cross sectional study was carried out in bewal village of Pakistan in the month of October 2014. All the people in village who were 60 years of age or greater than that and who gave written informed consent were included in the study. Non consenting people, People below 60 years of age, diagnosed cases of any psychiatric illness or psychoactive substance use and People unable to understand or complete the BDI were excluded from the study.

## Instruments

A structured performa was use to record demographic variables; these Variables were: age, gender, education, level of family income, tobacco smoking, chronic illnesses (DM, IHD, HTN, history of stroke), marital status, family size, worrying about the future and social support status.

Beck Depression Inventory (BDI) was used to assess the depressive symptoms among the target population. The BDI-II (Beck, Steer, & Brown, 1996) is a standardized self-report measure that consists of 21 items assessing the presence and severity of affective, cognitive, motivational, vegetative, and psychomotor aspects of depression. All 21-items are rated on a 4-point scale (0 to3).

## PROCEDURE

The subjects were gathered in a quiet field with and were reassurance of confidentiality. Detailed description of the study was provided and they were inducted into the study after written informed consent. Structured Performa was used to enter the socio demographic data of the full sample of subjects participating in the

research; due to wish of some subjects for anonymity only initials of their names were kept as record. The confounding variables were taken care of by detailed history taking about any current or previous psychiatric illness and any current or previous evidence of illicit substance/drug use. Those subjects with confounding variables were excluded from the study. Beck's Depression Inventory (BDI) was applied. SPSS version 20 was used to analyze the data, descriptive statistics, chi-square and Binary logistic regression was applied. For regression analysis 17 was taken as cut off BDI score.

## RESULTS

Out of 206 subjects 90(43.6%) were male and 116(56.4) were female. 29.1% had no depressive symptoms, 27.2% had mild, 18% had moderate and 25.7% had severe depressive symptoms. As shown in table 1 Female gender, use of naswar, less education, low income, inadequate social support, worry about future, marital status and presence of chronic physical illness were associated with depressive symptoms when chi-square was applied. Table 2 shows that only female gender, use of naswar and inadequate social support were significantly associated with the presence of depressive symptoms after the regression analysis.

**Table 1:**  
Characteristics of the subjects and their Beck Depression Inventory scores.

Socio demographic factors	N0 depressive symptoms (0-9)		Mild Depressive symptoms (10-16)		Moderate Depressive symptoms (17-29)		Severe Depressive Symptoms (30-63)		$\chi^2$	p-value
	N	%	N	%	N	%	N	%		
<b>Total</b>	60	29.1	56	27.2	37	18.0	53	25.7		
Age										
60-75 years	40	66.7%	28	50%	21	56.8%	23	43.4%	6.746	0.078
>75 years	20	33.3%	28	50%	16	43.2%	30	56.6%		
Education										
<10	40	66.7%	44	78.6%	32	86.5%	51	96.2%	16.978	0.000
10 or more	20	33.3%	12	21.4%	5	13.5%	2	3.8%		
Gender										
Male	38	63.3%	27	48.2%	11	29.7%	11	20.8%	21.724	0.000
Female	22	36.7%	29	51.8%	26	70.3%	42	79.2%		
Marital status										
Un Married	12	20%	5	8.9%	4	10.8%	1	1.9%	17.591	0.031
Married	44	73.3%	46	82.2%	27	73.0%	40	75.4%		
Widow/Widower	4	6.7%	5	8.9%	6	16.2%	11	20.8%		
Separated	0	0%	0	0%	0	0%	1	1.9%		
Family income										
<Rs.12000	13	21.7%	16	28.6%	13	80.5%	34	64.2%	24.603	0.000
2000 or more	47	78.3%	40	71.4%	24	14.6%	19	35.8%		
Tobacco smoking										
Smoker	45	75%	39	69.7%	30	81.1%	38	71.7%	1.680	0.629
Non smoker	15	25%	17	30.3%	7	18.9%	15	28.3%		
Naswar use										
User	58	96.7%	47	83.9%	26	70.3%	10	18.9%	88.717	0.000
Non user	2	3.3%	9	16.1%	11	29.7%	43	81.1%		
Social support										
Inadequate	7	11.7%	19	33.9%	12	32.4%	34	100%	34.166	0.000
Adequate	53	88.3%	37	66.1%	25	67.6%	19	0%		
Worry about future										
Yes	34	56.7%	30	53.6%	14	37.8%	11	20.8%	18.204	0.000
No	26	43.3%	26	46.4%	23	62.2%	42	79.2%		
Chronic Illness										
Absent	50	83.3%	36	64.3%	22	59.5%	25	47.2%	16.671	0.001
Present	10	16.7%	20	35.7%	15	40.5%	28	52.8%		

**Table 2**

	$\beta$	p-value	Odds ratio	Confidence interval	
				lower	upper
Age (reference is more than 75 yrs)	.312	.491	1.366	.563	3.316
Education (reference is matriculate or above)	.876	.133	2.400	.765	7.527
Gender (reference is male)	.984	.027	2.676	1.121	6.388
Marriage					
Unmarried	.089	.887	1.094	.319	3.754
Widow/widower	.033	.957	1.034	.311	3.435
Separated (reference is married)	19.543	1.000	307306383.440	.000	.
Family income (reference is above 12000)	.629	.118	1.875	.853	4.123
Smoking (reference is non smoker)	-.064	.893	.938	.367	2.398
Naswar use (reference is non naswar user)	2.251	.000	9.494	3.997	22.550
Worry about future (reference is not worried)	.434	.283	1.544	.699	3.410
Social support (reference is adequate support)	.930	.024	2.534	1.131	5.680
Chronic Illness (reference is absence of any illness)	.341	.402	1.406	.634	3.119

## DISCUSSION

Most of the people showed depressive symptoms. Prevalence and severity was more than rural populations of other countries 2, 4, 6. These studies except the one done in India are from developed countries which have better health care facilities and other modalities making quality of life better as compared to our rural population which have very little access to even basic facilities. Gender predisposition was very strong in our study. A very strong association between female gender and depressive symptoms was established. This is very much in accordance with the other similar studies<sup>1,5</sup>. Increased rate of depression in women may be contributed to hormonal changes particularly menopause. Additional responsibilities or dissatisfaction with their spouses may also be contributing factor<sup>22</sup>.

Inadequate social support was significantly related with presence and severity of depressive symptoms as mentioned in similar studies before<sup>19-21</sup>. Deteriorating health, retirement, financial problems, change in routine and life style and busy schedule of children may be the causes for increase requirement of support and care from others at old age. Lack of which may prone them towards mental health issues.

Use of naswar and its association with depressive symptoms is one of very significant and interesting finding of our study. It is a tobacco based substance and its use is very common in our part of the world. As alcohol and drugs are considered a taboo in our society, Gutka and


Naswar though addictive, are accepted as part of the local culture in certain ethnicities. They are easily available and widely consumed by the locals despite research showing the serious health risks posed by them. Their association with oral pathologies is documented but not much work has been done to establish their association with mental health problems so our study provides a strong base to look into its effect in larger studies among different sets of populations in future. Our study has few limitations as well. No subjects stationed outside of Bewal village were included in the study. Therefore, the results of present study cannot be generalized and cannot represent the true prevalence of depressive symptoms among elderly population of rural Pakistan. We used self-rating scale to detect depression so we need more attention in clinics because the BDI scores may be influenced by local factors and individual demand. We used the cross-sectional study method so the cause and effect relationships remain unclear. Therefore, we suggest further studies to look into these associations using longitudinal epidemiological data.

## CONCLUSION

Prevalence of depressive symptoms is high in our study which highlights the importance of developing good mental health care facilities for rural population and routine screening of elderly. Special attention should be paid on females, naswar users and people who are having inadequate social support.

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