

DEPRESSION AMONG DOCTORS OF SELECTED PUBLIC AND PRIVATE TERTIARY CARE HOSPITALS IN DISTRICT PESHAWAR

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ABSTRACT

Introduction: Whereas physicians play important roles in promoting physical and mental wellbeing of the community, they are not immune to physical and mental diseases. Psychiatric problems like depression among doctors may negatively affect performance, attitude towards patients, patient safety and health care in general. Despite this, little attention has been paid to the mental health status of doctors in our region. This study was conducted to assess the magnitude of depression and its risk factors among doctors working in selected tertiary care hospitals of Peshawar, Khyber Pakhtunkhwa, Pakistan.

Materials & Methods: A self-administered questionnaire based cross-sectional survey was carried out in tertiary care hospitals of Peshawar, KP using the Beck depression inventory scale; demographic and related variables were added to the questionnaire. Data were analyzed using SPSS version 16 for descriptive statistics. Cross tabulation was done between intensity of depression and possible risk factors using Chi-square test; $p \leq 0.05$ was considered significant.

Results: Depression was found in 10.9% doctors, most of whom were fresh graduates; 34.4% doctors were in transitional stage, at risk of developing the disorder at any time. The Beck Depression Inventory score was positively associated with increased years of experience, expenditures, dependents, working hours, smoking, decreased leisure time and physical activity.

Conclusion: The intensity of depression correlated positively with number of dependents, expenditure and extended working hours, though the major proportion was of transitional stage physicians.

Keywords: Depression; Physicians; Mood Disorders; Occupational Stress.

The authors declared no conflict of interest. Both authors contributed substantially to the planning of research, data collection, data analysis and write-up of the article and agreed to be accountable for all aspects of the work.

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INTRODUCTION

Depression is a common mental health problem and a debilitating condition contributing globally to the burden of disease (BOD) affecting individuals in all communities throughout the world. It is treatable but most of the affected individuals are either not certain about their condition or they receive minimal and inadequate treatment.⁽¹⁾ Doctors, like other human beings, are also prone to the occurrence and consequences of depression and other psychological problem.⁽²⁾ Depressive symptoms

include changes in temper, self-attitude, cognitive performance, sleep, appetite and energy levels.⁽³⁾ The affected individual may have difficulty concentrating or focusing at work, at clinical site and in their family life. The worse consequences can come in the form of suicide.⁽⁴⁾ Studies indicate that with more than 90% of the doctors whose behavior is frustrated and tend to commit suicide always had a history of depression, mood disorders and/or substance abuse.⁽⁵⁾ It has been observed that the suicide rates among doctors

have gone beyond those in the general population, and vary among the genders. This is because the life of a doctor is stressful. The stress is further enhanced by everyday encounters with chronically ill patients, long working hours, work burden, fear of being sued by patients, and professional development.⁽⁶⁾

The nature of work in medical field, either as student or employee, increases stress and anxiety as a result of increased pressure of work load.⁽⁷⁾ Although the definite prevalence of depression among doctors is unknown, studies demonstrate that 1/4th to 1/3rd resident doctors will be clinically depressed at some point during the journey of their training and job where it significantly varies among male and female doctors.⁽⁵⁾ Literature indicates that the prevalence of anxiety and depression in Saudi Arabia is about 47% to 73%.^{(8),(9)} The mean prevalence of depression throughout the world is 5-10%⁽¹⁰⁾ and in Pakistan it is about 33.62%.⁽¹¹⁾ According to study conducted by Khuwaja, the prevalence of anxiety and depression among general practitioners in Karachi is reported to be 39%.⁽⁷⁾ The depression among doctors varies with gender, being more common among females (20%) as compared to males (13%). Both groups vary in symptom intensity of depression.⁽¹²⁾

Trainee medical officers, medical students and medical doctors working in roles of managers and consultants, etc. also experience depression, and at even higher rates, with some studies estimating the rates as high as 30%.⁽¹³⁾ Literature shows that depression is 70% higher for male clinicians compared to non-clinicians and about 25% to 40% higher for female clinicians.^(14,15) Physicians with depression may have a decline in job performance or a higher rate of absenteeism; depressed doctors may frequently complain of aches and pains or express concerns of illness.⁽¹⁶⁾ Importantly, problems and issues in depressed physicians may show up in their workplace last of all, after symptoms have led to their

withdrawal from leisure activities. They may face problems dealing with friends, community people and peers,⁽¹⁷⁾ and difficulties in establishing therapeutic relationships with clients.⁽¹⁸⁻²⁰⁾

The present study was conducted to obtain an estimate on the magnitude of depression among doctors working in public and private tertiary care hospitals of Peshawar, Khyber Pakhtunkhwa, Pakistan.

OBJECTIVES

The objectives of this study were to:

- Assess the magnitude of depression among doctors working in tertiary care hospitals of Peshawar Khyber Pakhtunkhwa by using Beck Depression Inventory.
- To determine the work related augmenting factors of depression among doctors working in tertiary care hospitals of Peshawar Khyber Pakhtunkhwa.
- To find the difference of depression level with reference to designations, work burden, income, smoking and physical activities.

MATERIALS & METHODS

A cross-sectional survey was conducted from April to September 2015 in public and private tertiary care hospitals of Peshawar, including Lady Reading Hospital (LRH), Khyber Teaching Hospital (KTH), and Hayatabad Medical Complex (HMC) from the public sector; the private hospitals were Rehman Medical Institute (RMI), North West General Hospital & Research Center (NWGH) and Kuwait Teaching Hospital Peshawar (KuTH).

The sampling unit constituted doctors, who were further divided into three groups, i.e. House officers who had completed graduation and were doing their house job (Group A), Trainee medical officers who had done their part I (Group B), and Consultants (Assistant Professors and above) (Group C).

Sampling Frame included all the doctors working in LRH, KTH, HMC, NWGH, KuTH and RMI. A list of doctors was obtained from the Administration office from all the respective hospitals whether public or private after due approval.

The calculated sample size for the study was 307 based on WHO sample size calculator by considering:

Population size from which sample was selected, (n) = ±3000; Anticipated population proportion, (p) = 40%⁽⁷⁾; Absolute precision, (d) = 0.055; Level of significance (1-α) = 95%.

Data were collected using stratified sampling approach, doctors were selected from each of the groups as mentioned above. Within groups, simple random sampling was employed to include doctors in the study. The samples were selected from wards and units from the above-mentioned sampling frame; all the major wards notably Pediatrics, Medicine and Isolation Wards, Surgical, Gynecology and Obstetrics, Neurology, Neurosurgery and Cardiology wards were included.

The Inclusion Criteria were all the MBBS doctors who were working as public or private employees; the Exclusion Criteria were the doctors who were on vacation.

Data were collected by using the validated Beck Depression Inventory (BDI) questionnaire.⁽²¹⁾ The questionnaire consisted of 3 parts; the first part consisted of personal/demographic data, the second part was about the associated factors while the third part consisted of depression measurement in 36 items of the Beck Depression Inventory questionnaire.

Piloting was done in study population prior to data collection to check for any language problem. In hospitals, data were collected in staffrooms; both male and female doctors were invited to take part in the study, with the approval by the Director Medical Services. The

purpose of study was explained to participants before delivering the questionnaire. Apart from principal investigator, one research assistant who was a medical graduate conducted the survey. The research assistant was trained and guided by the principal investigator accordingly. The doctors were briefed about the tool and were asked to fill it according to given instructions. Respondents ranked themselves on the Beck Depression Inventory scale based on their perception.

Though the BDI categorizes respondents based on their scores as Normal, Mild Mood Change, Borderline Depression, Mild Depression, Moderate Depression and Severe Depression, for this study three categories were finally made, i.e. Not Depressed, Transitional, and Depressed.

BDI Cut Off Scores for Stages of Depression²¹

Total Score	Levels of Depression
1-10	Considered Normal
11-16	Mild Mood Disturbance
17-20	Borderline Clinical Depression
21-30	Moderate Depression
31-40	Severe Depression
Over 40	Extreme Depression

Data were analyzed using SPSS version 16. Quantitative and Qualitative variables were analyzed using frequency, percentages, mean, and standard deviation for general characteristics. Multivariate analysis was done using depression score categories i.e. Normal, Mild Mood Change, Borderline Depression, Mild Depression, Moderate Depression and Severe Depression. The relationship was made between alternate source of income, marital status, gender, diseases status, smoking status and designation. Chi-square test was applied for categorical data while correlation was made for two continuous variables. The level of significance for relationship between these variables was set at P-value ≤ 0.05.

The ethical approval was taken from Ethical Review Committee (ERC) of Khyber Medical University.

RESULTS

The study included 320 doctors, with age range from 22 to 54 years with a mean of 27 years. There were 215 (67.2%) males and 105(32.8%) females. The response rate varied from facility to facility, 49(15.3%) were from HMC, 88(27.5%) from KTH, 30(9.4%) from Kuwait teaching

hospital, 83(25.9%) from Lady Reading Hospital, 35(10.9%) were from North West General Hospital and Research Center similar proportion participated from Rehman Medical Institute as well. Table I shows participants profiling.

Table I: Participant's Profile

Participant profile	Frequency	Percent
Gender		
Male	215	67.2
Female	105	32.8
Marital Status		
Married	93	29.1
Single	227	70.9
Job in type of health care organization		
Public	182	56.9
Private	124	38.8
Both	14	04.4
Name of Facilities		
HMC	49	15.3
KTH	88	27.5
KuTH	30	09.4
LRH	83	25.9
NWGH	35	10.9
RMI	35	10.9

HMC=Hayatabad Medical Complex; KTH=Khyber Teaching Hospital; KuTH=Kuwait Teaching Hospital; LRH=Lady Reading Hospital; NWGH=North West General Hospital; RMI=Rehman Medical Institute

Half of total participants were house officers 160 (50%) while 99 (30%) were trainee Medical Officers, only 03 (0.9%) were Assistant Professor while 58 (18.1%) were other medical professional who were

performing their duties as administrators which included supervisor and manager of different clinical units and health program (Figure 1).

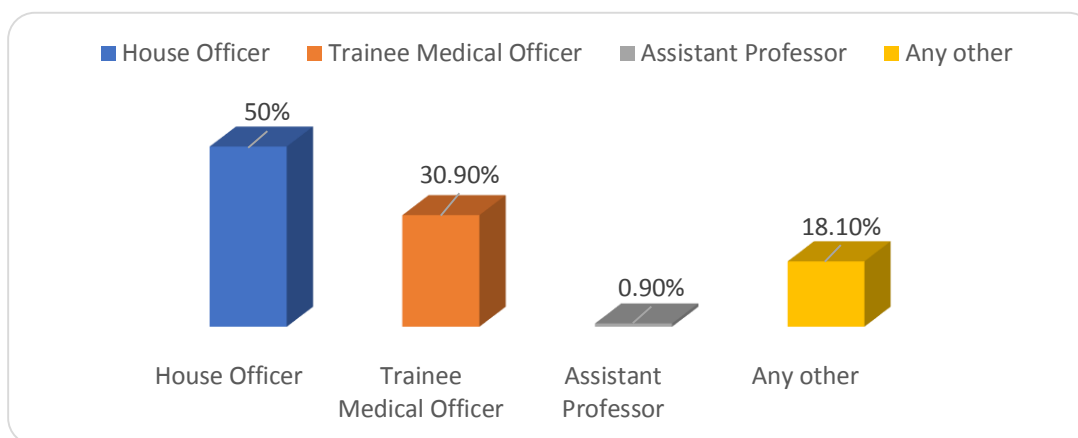


Fig 1: Participant Profile by Designation

The monthly income of doctors ranged from PKR 15,000-200,000 (mean PKR 35,297.5 ± 22,566); monthly expenditure ranged from PKR 20000-110,000 (mean PKR 28,453.1 ± 21,548) reflecting little difference between monthly income and monthly expenditure. As majority of the participants were just house officers and unmarried, more than half 183(57.2%) had no dependents, 56(17.5%) subjects had 1 to 2 dependents, while 81(25.3%) had dependents ranging from 3 to 10 persons. Table 2 shows the study sample dependent person's details.

Table 2: Number of Dependents

Dependents	Frequency	Percent
None	183	57.2
1-2	56	17.5
3-4	27	08.4
5-6	20	06.3

7-8	15	04.7
> 8	19	05.9

Most of the doctor, 277 (86.6%) were non-smokers while 43(13.4%) were smokers. Majority of them, 244(76.3%) were not doing any type of exercise while only 76(23.8%) doctors were doing some sort of exercises. Similarly, majority of the doctors, 227(71%) had no alternate source of income like part time job, business or support from other family members and were only relying on their monthly salary, while 93 doctors (29%) reported that they had secondary sources of income in the form of private clinical practice or other business. Other details that may be a factor in the causation of depression are mentioned in Table 3 along with their frequencies and percentages.

Table 3: Relative factors to Depression

Factors Related to Depression	Frequency	Percent
Experience Since Graduation		
One Year	47.8	47.8
2 to 6 years	46.3	46.3
> 7 years	05.9	05.9
Number of Working hours		
6 to 8 hours	134	41.9
9 to 11 hours	27	08.4
>12 hours	159	49.7
Number of Sleeping hours per day		
3 to 5 hours	30	09.4
6 to 8 hours	248	77.5
> 9 hours	42	13.1
Smoking history		
Yes	43	13.4
No	277	86.6
Suffering from any Chronic Diseases		
Yes	22	06.9
No	298	93.1
Exercise history		
Yes	76	23.8
No	244	76.3

The Beck Depression Inventory scores were finally cumulated into categories to classify the individual into different stages of depression. The stages of depression were categorized based on the BDI cut-off values.

The scores ranged from 4-39 (mean 11.33 ± 8.26); 175(54.7%) respondents were in normal

category, 81(25.3%) had mild mood change, 29(5.6%) were in borderline depression, 18(5.6%) were mildly depressed, 11(3.4%) were moderately depressed while 6(1.9%) were severely depressed. Upon broad categorization, 54.7% doctors were in normal stage, 110(34.4%) were in transitional stage, while 35(10.9%) of doctors had some stage of depression (Table 4).

Table 4: Frequency of Depression among Doctors based on Beck Depression Inventory

Depression Categories	Frequency	Percent
Normal	175	54.7
Mild Mood Change	81	25.3
Borderline Depression	29	9.1
Mild Depression	18	5.6
Moderate Depression	11	3.4
Severe Depression	6	1.9

The relationship between the type of health facility, i.e. public or private, and categories of depression is shown in Table 5. A significant difference was found between the public and private sector hospitals with reference to

depression (p=0.003), so that the private sector hospitals had lesser normal doctors (47.6% vs 60.4%) and more doctors in the moderate (7.3% vs 1.1%) and severe (4.0% vs 0.5%) depression categories.

Table 5: Relationship between Depression and Type of Health Facility

Facility	Normal	Depression Categories (Beck Depression Inventory)					p value
		Mild Mood Change	Borderline	Mild	Moderate	Severe	
Public	60.4%	22.5%	08.2%	7.1%	01.1%	0.5%	0.003
Private	47.6%	25.8%	11.3%	4.0%	07.3%	4.0%	
Both	42.9%	57.1%	0.0%	0.0%	0.0%	0.0%	

There were no significant differences of depression categories between doctors by gender, marital status, designation, or alternate income sources. Significant differences were seen

between depression categories for chronic disease (p=0.001), and smoking (p=0.001), (Table 6).

Table 6: Frequency distribution of possible risk factors related to depression categories.

Relating Factors	Normal	Depression Categories (Beck Depression Inventory)					p value
		Mild Mood Change	Borderline	Mild	Moderate	Severe	
Alternate Source of Income							
Yes	62.4%	20.4%	11.8%	2.2%	1.1%	2.2%	0.119
No	51.5%	27.3%	7.9%	7.0%	4.4%	1.8%	
Designation							
House Officer	61.3%	22.5%	8.1%	3.1%	3.8%	1.3%	0.187
TMO	47.5%	27.3%	9.1%	10.1%	2.0%	4.0%	

Assistant Professor	0%	66.7%	33.3%	0%	0%	0%	
Any other	51.7%	27.6%	10.3%	5.2%	5.2%	0%	
Chronic Disease							
Yes	31.8%	13.6%	18.2%	4.5%	13.6%	18.2%	0.001
No	56.4%	26.2%	8.4%	5.7%	2.7%	0.7%	
Marital Status							
Single	55.1%	24.2%	8.4%	4.8%	4.8%	2.6%	0.126
Married	53.8%	28.0%	10.8%	7.5%	0%	0%	
Gender							
Male	54.9%	25.1%	10.2%	4.7%	3.3%	1.9%	0.825
Female	54.3%	25.7%	6.7%	7.6%	3.8%	1.9%	
Smoking history							
Yes	34.9%	48.8%	9.3%	0%	7.0%	0%	0.001
No	57.8%	21.7%	9.0%	6.5%	2.9%	2.2%	

DISCUSSION

The findings of this cross-sectional study conducted on 320 medical doctors of public and private tertiary care hospitals of Peshawar indicate that most (54.7%) doctors were within the normal range of psychological aspects, with mean score of depression being 11.33 ± 8.26 . Overall, 34.4% doctors were in transitional stage; they had either mild mood disturbances or borderline clinical depression, which may be due to multiple reasons mentioned earlier. However, 35(10.9%) doctors were suffering from various categories of depression. This indicates that the magnitude of apparent depression among doctors of the selected hospitals is less compared to 34% depression prevalent in the general population of Pakistan.⁽¹¹⁾ These results may differ because most of the participants of the study were young and in the early phases of their careers.

Result indicate that the Beck Depression score had a positive association with work load, working hours, increase in monthly expenditure, and increased number of dependents. The results were consistent with other studies conducted in Karachi and other areas.^(7,17,22) A study from Karachi estimated the prevalence of depression among General Practitioners as 39%, with females more prone to develop the

condition than males. Age, increased workload, number of dependents, lack of exercise and decreased sleeping hours were all risk factors for the development of depression. All these findings are consistent with the findings of this study. Most of the studies conducted on medical students also reflect the same pattern.^(8,9,23) According to Misra et al, workload, sleeping pattern, and lack of exercise also contribute in transitions of depressive mood.⁽²⁴⁾ Lack of exercise was not strongly associated with depression in the current study, however increased smoking was significantly associated with depression which is consistent with literature.^(20, 25)

The intensity of depression was high among the doctors who were suffering from certain type of chronic disease, ($p=0.001$). A study conducted by Zafar and Mojtabei in USA determining the association of chronic disease and level of depression concludes that chronic diseases significantly enhance depression, while rehabilitation improves the depression and mood disorders in such individuals.⁽²⁶⁾

CONCLUSION

Although the prevalence of depression was low but good number of doctors were those who

were in transitional stages of development of depression. Workload, decreased sleeping hours, smoking, chronic diseases and number of dependents were all the factors that were predisposing an individual to depression. Positive working environment that can reduce stress and increase individual resilience can help reduce anxiety and depression of a doctor.

RECOMMENDATIONS

1. Placement and enhancement of support systems from management for doctors who work in stress and high work load environments.
2. Friendly working environment and reward and compensation systems should be introduced for doctors.
3. Stress management trainings during the service tenure of doctors.

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