

Prevalence of depression among students of Doctor of Physical Therapy (DPT) in Swabi and Peshawar: a cross-sectional study

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ABSTRACT

Background: Depression is among the most prevalent forms of mental diseases; 4.5% of the world's population is believed to be depressed. Depression is very common among university students as they undergo a significant transitory period from adolescence to adulthood. Factors such as difficulties in learning, maintaining good grades, preparing for the future, and adjusting to life in a hostel, cause significant levels of anxiety and depression among university students. This study aimed to evaluate the vulnerability to depression among final year DPT (Department of Physical Therapy) students in various medical institutes of Peshawar and Swabi, using BDI (Beck's depression inventory scale). **Methodology:** A simple quantitative cross-sectional survey was conducted at the medical colleges of Peshawar and Swabi. A convenience sampling technique was used in the current study. The sample size was 145, calculated by the Raosoft sample size calculator. Only the students of the final year of physical therapy were included in the current study. Exclusion criteria comprised of students belonging to departments other than DPT, students who had any physical disabilities, and those who had any psychological problems. Data was collected through a structural questionnaire administered to all participants. **Result:** It was found by using BDI Scale that 44.8% of students had borderline clinical depression. About 19.3% were suffering from moderate depression and 2.8% were suffering from severe depression. The students of Khyber Medical University reported higher levels of borderline clinical depression compared to the other institutes. **Conclusion:** Our study reported that an average number of students experienced borderline clinical depression, while a small percentage of participants suffered from severe depression. Females were seen to be more affected than males. Moreover, students of the Institute of Physical Medicine and Rehabilitation (IPMR), KMU, Peshawar reported higher rates of depression compared to other DPT colleges.

Key words: Depression, DPT, Convenient sampling technique, Beck's depression inventory scale

INTRODUCTION

Physical therapy is a sub-field of rehabilitation science, which plays a crucial role in the health care system. It can treat a number of diseases of the musculoskeletal system and the neurological system among several others. It offers both direct and indirect access to the patient for treatment. Treatment sessions are based on tests, assessment, diagnosis, prognosis, and the treatment plan is based on the patient's condition¹. Usually, in a clinical setting, the first diagnosis used to be carried out by the physician, especially by a general practitioner, and danger signs were ruled out by them, before referral to the physiotherapist. However, at present, physiotherapists are considered to have enough knowledge and advance skills to act as the first line of contact. Several physiotherapists now refer patients for diagnostic imaging, including plain X-rays, CT scans, and MRIs, in order to obtain an accurate diagnosis and treat patients ac-

ordingly². Physiotherapists are an important part of the clinical health care team. Hence, they need to recognize the functions of other clinicians and collaborate effectively in order to provide quality care³. Depression is one of the four major disorders worldwide and is the most common cause of disability⁴. About 300 million people around the world are estimated to be suffering from depression, which corresponds to 4.5% of the world's population⁵. Depression is highly prevalent among university students and is a widespread problem all over the world^{6,7}. University students undergo a significant transitory period from adolescence to adulthood, and constitute a special community who are in the most stressful periods of their lives. A large number of students suffer from anxiety and depression due to the burden of studies, pressure of maintaining good grades, planning for the future, and adjusting to life in the hostel^{8,9}. Depression greatly affects the concentration

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levels of an individual; it also disturbs appetite and sleep. Globally, depression is a leading cause of mental and physical illnesses and is projected to be the second-largest contributor to the global disease burden by the year 2020¹⁰. Symptoms of depression can last for weeks, months, or even years without desirable interventions and thereby lead to serious problems. Proper treatment can help almost all patients of depression and enable them to resume their normal lives.

Depression negatively affects the feelings, thoughts and day-to-day lives. It is a very common and serious medical problem across communities. Depression can also lead to loss of interest and feelings of sadness, but fortunately, it can be treated through proper administration of specific interventions and caring for the affected person¹¹. Annually, depression affects almost one in fifteen adults (6.8%), and some studies report that one individual out of six experiences depression-related symptoms at some point in their lifetime. On an average, depression mostly occurs between the late teens and mid-20s, however, it can affect anyone at any point throughout their life span. Women are more likely to develop depression compared to men¹¹. There are several contributing factors which can lead to depression; these include interpersonal problems (such as poor social skills, failed romantic relationships, and mistreatment by others), developmental events (including childhood problems, unresolved issues with one's family), personality or cognitive causes (such as irrational concerns, emotional upsets, and depressive thought patterns), biological factors (including genetics and biochemical imbalance), environmental factors (for example, stress and illness of self or others)¹².

The common symptoms of depression include the following: feeling sad or having a depressed mood, loss of interest or pleasure in activities once enjoyed, changes in appetite – weight loss or gain unrelated to dieting, trouble in sleeping or sleeping too much, loss of energy or increased fatigue, increase in purposeless physical activity (e.g., hand-wringing or pacing) or slowed movement and speech (actions observable by others), feeling worthless or guilty, difficulty thinking, concentrating or making decisions, thoughts of death or suicide¹¹.

Various studies have been carried out on depression and anxiety, as depression is a type of chronic disability often requiring long-term treatment and maintenance. Medical experts and psychiatrists conclude that it has a very high recurrence rate, and patients who have experienced a recent episode of depression are especially prone to such recurrence. Further, if

someone has suffered from almost three episodes of depression, they will be more likely to suffer the next episode of depression within the coming two years. Though depression is very high among different professions, especially students, very few studies have been conducted in Pakistan for measuring depression among students, particularly in the newly emerging field of DPT. Hence, we are interested in studying the current rate of depression among final year students of DPT. This study is expected to help the institutes, colleges, and universities of various regions, in assessing the prevalence of depression, based on which they can take positive steps to reduce depression by changing their environments or providing different opportunities for the same.

METHODOLOGY

Ethical approval

The current study was ethically approved by the ethical committee of the Department of Physical Therapy and Rehabilitation, NCS University, Swabi (with regard to conducting the study in Swabi), and Department of Rehabilitation Sciences, Northwest Institute of Health Sciences, Peshawar, Pakistan (with regard to conducting the study in Peshawar). This was a cross-sectional survey. Data was collected from final year students of DPT at different institutes of Peshawar and Swabi, in order to find out the prevalence of depression among them.

Survey details

A cross-sectional survey was carried out and a convenience sampling technique was employed to include participants in the study. The convenience sampling technique is a non-probability sampling technique wherein subjects are selected because of their convenient accessibility and proximity to the researcher.

Data collection

Data were collected from a total of 145 students. The total population was 230, and the sample size was calculated using an online calculator "Raosoft", with a confidence level of 95%, and response distribution of 50%. The duration of the study was 6 months. Information about the study was provided in written format to all the students. Beck's depression inventory questionnaires and written informed consent forms were also provided to all the students. Those students who were willing to be part of the study signed the consent forms and filled the questionnaire. The questionnaire consisted of a total of 21 questions. It was checked by the supervisor and director of NCS University Swabi before administration to the students.

Inclusion and exclusion criteria

Only willing students of final year DPT, studying at different universities of Peshawar and Swabi were part of the study. Students with physical disabilities or psychological issues were excluded from the study.

Statistical analysis

Data were analyzed using SPSS version 22. Mean \pm S.D., range, and standard deviation for demographic data were measured. Descriptive statistics were expressed in the form of frequency tables and bar graphs.

RESULTS

Participant information

A total of 145 participants from different DPT institutes of Peshawar and Swabi participated in this study. More than half were male ($n=80$, 55.2%), the rest were female ($n=65$, 44.8%). Participants belonged to IPM&R ($n=39$, 26.9%), RMI ($n=29$, 20.0%), NCS Peshawar ($n=28$, 19.3%), NWIHS ($n=39$, 26.9%) and NCS Swabi ($n=10$, 6.9%). With regard to age category ranging from 20-25 ($n=101$, 69.7%) and 26-30 ($n=44$, 30.3%), the majority of the participants were in the age group between 20 and 25. The frequency of single participants was $n=141$, 97.2%, and married was $n=4$, 2.8%. By using the Beck's Depression Inventory scale, 17 participants (11.7%) were found to be normal, 29 participants (20.0%) fell within the 11-16 range (mild mood disturbance), and 65 participants (44.8%) reported borderline clinical depression. Twenty-eight participants were moderately depressed, while only 4 and 2 participants were severely and extremely depressed, respectively. According to the above results, most of the participants were facing borderline clinical depression ($n=65$, 44.8%).

Gender-based analysis

By using the Beck's Depression Inventory Scale, it was found that, among the total participants, 22 males had mild mood disturbance, while 31 had borderline clinical depression and 14 were suffering from moderate depression. There was no single cause of severe depression among males. Among female participants, 7 had mild mood disturbance, 34 were suffering from borderline clinical depression, and 14 had moderate depression. Only 4 female participants were found to be severely depressed. Thus, it was concluded that while most of the participants had borderline clinical depression, women were more affected among such participants.

Institution-based analysis

In Khyber Medical University, out of 39 students, 31 had border line clinical depression, while 5 had mild mood disturbance, 3 were considered normal, and no cases of severe depression were found. Likewise, in Rehman Medical Institute (RMI), out of 29 students, 10 were suffering from borderline clinical depression, one had mild mood disturbance, 12 had moderate depression and 3 participants had severe depression. A total of 28 students participated in the study from NCS University Peshawar, of which 10 had borderline clinical depression, 7 had moderate depression, 3 suffered from mild mood disturbance and 1 had symptoms of severe depression. The number of participants from NWIHS was 39. Here, 13 participants had borderline clinical depression, 17 had mild mood disturbance, 7 were moderately depressed, and no case of severe depression was found. The number of students from NCS Swabi was 10; among them, 3 had mild mood disturbance, 1 had borderline clinical depression, and 2 were moderately depressed.

DISCUSSION

The purpose of this study was to evaluate the prevalence of depression among final year students of DPT in different colleges of Peshawar and Swabi. A BDI questionnaire was used to collect the data from 145 participants belonging to different institutes. The questionnaire was filled by 80 males and 65 females who were in the age group of 20 to 30 years. The current study shows that most of the students had borderline clinical depression (44.8%), some were suffering from moderate depression, and only 2.8% were found to be severely depressed. An earlier study was conducted at Nishtar Medical College, Multan, to find out the prevalence of anxiety and depression, wherein the questionnaire was filled by 482 out of 815 students. The percentage of prevalence of anxiety and depression reported by this study was 43.89%. Among the total reported cases, female students were found to be highly depressed as compared to male students¹³. Similar results were observed in the current study; the overall prevalence of depression, especially borderline clinical depression, was found to be more among females as compared to males.

Another descriptive cross-sectional survey was carried out, wherein 237 students were selected using stratified sampling techniques. The overall depression rate was found to be 21.5% in this study¹⁴. Another study was carried out in India, wherein the prevalence of depression was 39%¹⁵. According to a study published by the University of São Paulo, the total number of participants was 88, out of which 69.8% had no

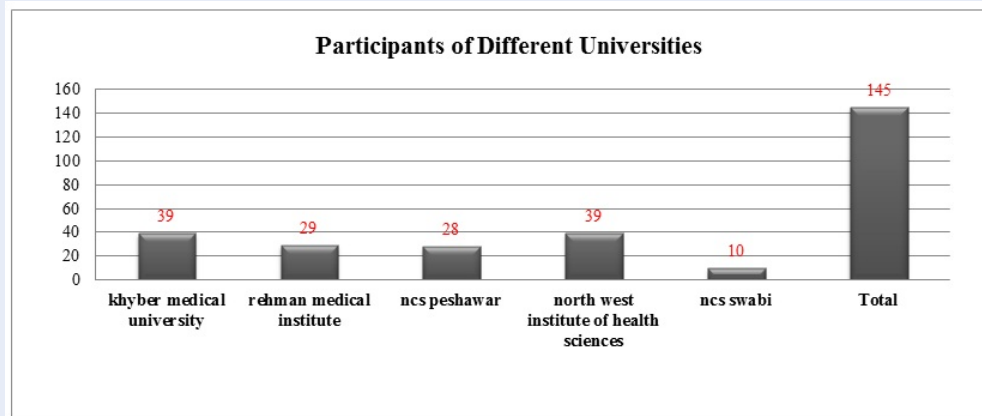


Figure 1: Institutional based analysis of depression level among the students of different medical universities in Peshawar and Swabi.

Table 1: The overall analysis of Beck's Depression Inventory Scale of participants of the current study

Beck's Depression Inventory Scale	Frequency	Percentage (%)
Consider normal	17	11.7
Mild mood disturbance	29	20.0
Borderline clinical depression	65	44.8
Moderate depression	28	19.3
Severe depression	4	2.8
Extreme depression	2	1.4
Total	145	100.0

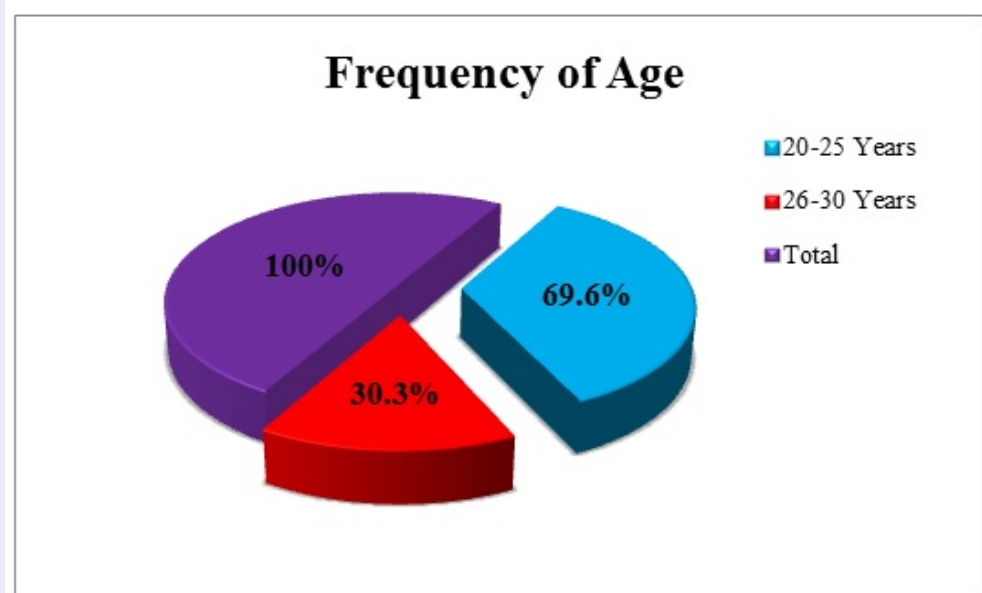


Figure 2: Overall analysis of age frequency of the participants.

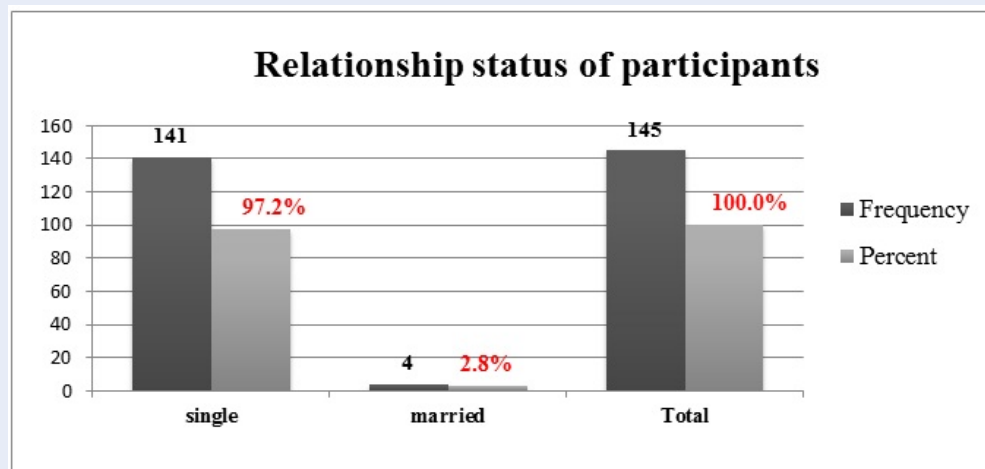


Figure 3: Relationship status of the participants of current study.

Table 2: Showing the Frequency of Beck's Depression Inventory scale of final year DPT students studying at different universities with respect to all depression levels

Beck depression inventory scale Cross tabulation								
Name of institute	Consider Normal	Mild Mood Disturbance	Borderline Depression	Clinical	Moderate Depression	Severe Depression	Extreme Depression	Total
KMU	3	5	31		0	0	0	39
RMI	2	1	10		12	3	1	29
NCS Peshawar	7	3	10		7	1	0	28
NWIHS	2	17	13		7	0	0	39
NCS Swabi	3	3	1		2	0	1	10
Total	17	29	65		28	4	2	145

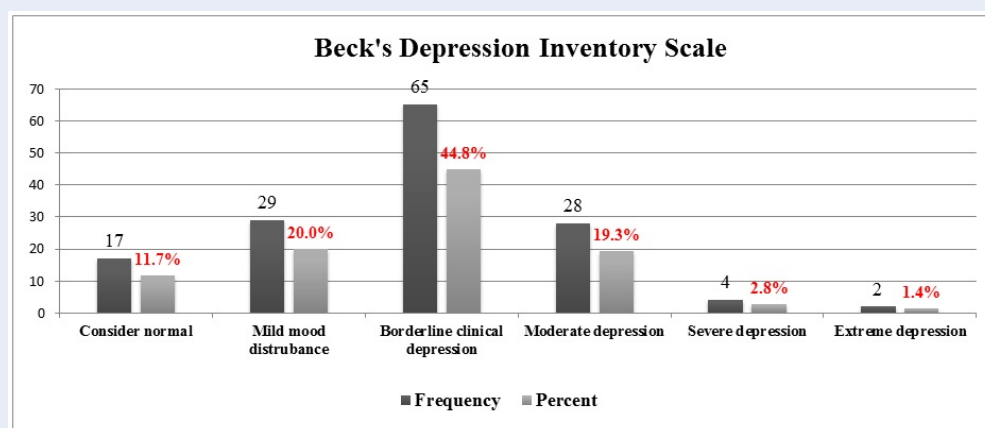


Figure 4: Analysis of Beck's Inventory Depression Scale; showing results for the level of depression among the final year DPT students.

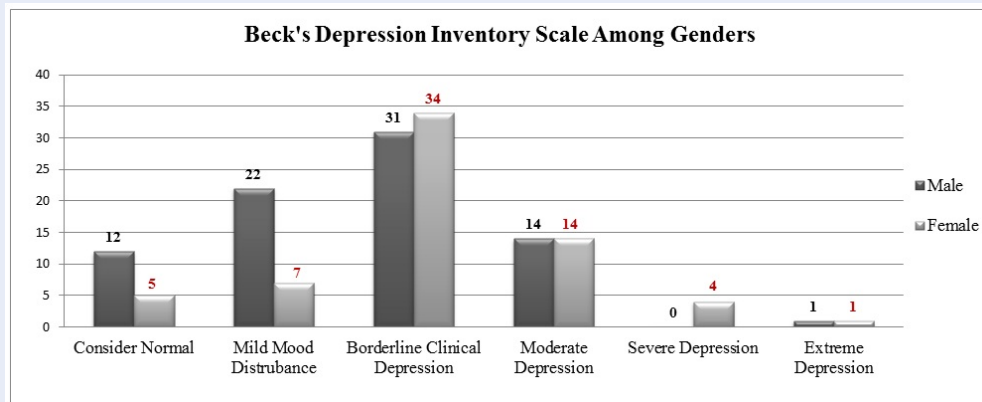


Figure 5: Result of Beck's Depression Inventory Scale with related to Gender of the final year DPT students.

depression, 18.2% had dysphoria, 6.8% were moderately depressed, and 5.7% were severely depressed¹⁶. According to a descriptive cross-sectional study on premedical students at Qasim University, including 288 male and 105 female students, the overall prevalence of anxiety and depression was 44.4% in males and 66.6% in females¹⁷. A study carried out among medical pharmaceutical students at Alexandria University reported that, in the faculty of medicine, the prevalence rates of anxiety and depression were 43.9% and 57.9%, respectively¹⁸. A study was done among Chinese medical students, in which almost half were found to be in the depressed range, and 2% were suffering from severe depression¹⁹. The level of prevalence among Pakistani medical students is poor, given the findings of 60% to 70% prevalence of anxiety and depression^{20,21}. According to studies conducted in western countries, the prevalence of depression was found to be within the range of 14-24%^{22,23}. The prevalence of depression among students of a public sector medical college in Mumbai was 39.9%²⁴. As compared to the study conducted in the western world, the prevalence rate found in our study was high, and approximately half of the students had borderline clinical depression.

CONCLUSIONS AND RECOMMENDATIONS

The study concluded that about half of the students reported borderline clinical depression and the symptoms of depression were higher in females as compared to males. Also, the students of the Institute of Physical Medicine and Rehabilitation Peshawar (IPMR) were found to be more affected, compared to all other institutes. Due to lack of resources and cooperation from participants, we limited our study

to a few institutes in two areas (Swabi and Peshawar city). Moreover, the researchers faced difficulties during data collection due to COVID-19, which was the basic reason for low participation rates. The pandemic conditions might have also caused depression and anxiety among the students, and this requires further evaluation. Almost all earlier studies have reported that, medical students all over the world are highly affected by symptoms of depression, due to multiple reasons like the burden of studies and competition among students for achieving high grades in the examination, and that depression is a significant hidden problem which affects their daily lives negatively. Therefore, positive steps should be taken for the alleviation of this global burden. Further research is needed, in order to find out an effective intervention for those who are in danger of losing their lives, due to a lack of awareness about this disease.

CONFLICT OF INTEREST

Authors declare no conflict of interest

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ETHICAL APPROVAL

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The current study was not funded by any agency.

LIST OF ABBREVIATION

KMU: Khyber medical university
NCS: National College of science
NWIHS: North West institute of health sciences
BDI: Beck's depression inventory scale
DPT: Doctor of Physical therapy
RMI: Rehman medical institute
IPMR: Institute of Physical Medicine and Rehabilitation
WHO: World Health Organization
MRI: Magnetic resonance imaging

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