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The Comparative Investigation of Emotional State, Depression, Anxiety and Stress of Fresh and Repeater Students of ETEA/MDCAT at District Peshawar

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Abstract

Depression is related with some negative past experiences in life. If a person has sadness, low mood and lack of interest in life for two weeks, it is indication for depression. Anxiety is the feeling of fear and worry about anything before its occurrence while stress is the tension associated with complicated unachievable multiple goals. Students suffer from depression and anxiety before and during examination. The objective of the study was to assess depression, anxiety and stress level between the fresh and the repeater students of ETEA /MD-CAT in Peshawar. To determine the prevalence of depression, anxiety & stress level of fresh and repeater students of ETEA/MD CAT of F. Sc pre-medical students of Peshawar. To correlate these three variables in both fresh and repeater students. The descriptive cross-sectional study was conducted in Peshawar from 500 F. Sc pre-medical students. Purposive sampling technique was used. DAAS-21 research tool was used to evaluate stress depression and anxiety among premedical students in Peshawar region with descriptive. The data was analyzed on SPSS-21. Out of 500 fresh and repeater students appeared for medical test 329 (65.8%) were male & 161(32.2%) were female with mean ($M=1.48$, $SD=1.17$) having depression ($M=7.3$, $SD=6.2$), anxiety ($M=8.9$, $SD=5.4$) and stress ($M=7.5$, $SD=4.8$). The depression, anxiety & stress was found to be positively correlated. Fresh and repeater students have strong correlation with depression anxiety and negative correlated with stress ($r=.56$, $p < 0.05$). Anxiety was high in fresh students while depression was very high in repeater students. Severe stress was comparatively high in repeaters while moderate in fresh students.

Keywords: Depression; Anxiety; Stress; ETEA; MD.CAT

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1. Introduction

Medical students suffer more because of competition and study burden as compare to others everywhere in the world. The fresh students cannot decide their career properly because of poor planning and great expectation from the young generation. The imbalance between the capacity of the students and the energy required for the victory and success in the ETEA/ MD-CAT is the cause of anxiety, stress and depression. The sudden change in the pattern and syllabus of the F.Sc course is one of the leading cause of depression and stress by the education system in a country (Raja, S., Balasubramanian, G., & Jamuna Rani, R. 2022).

It's a basic human right to give everyone mental satisfaction and comfort. The increase in the psychological problem is the cause of all social issues. The existence and widespread presence of the depression, anxiety & stress is increasing day by day which are the indicator for mental health and if left untreated it can have life threatening consequences. According to the American Psychological Association, depression and anxiety are the main cause of the sleeplessness, fatigue, muscle weakness and tension. Depression is also one of major effect on sleep disturbance, laziness, weight gain and loss and suicidal attempts and death. (Ramón, Caballero et al. 2020) Basudan et al in 2020 demonstrated that Various kind of studies have checked and analyzed that the prevalence of depression, anxiety and stress is very high as compared to the other students. (Basudan, Binanzan & Alhassan, A. 2017)

All medical students are badly affected by various psychiatric problems including fear, sadness and stress. Depression & anxiety are the commonly existing disorder in pre-medical students (Moutinho., Maddalena, Roland, Lucchetti, Tibiriçá., Ezequiel, & Lucchetti 2017). Various studies in different countries on the basis of their socioeconomic condition have proved that psychiatric issues like depression & stress are wide-spread in students preparing themselves for medical field as compare to other fields. Fawzy, M., & Hamed, S. A. (2017). According to WHO report an estimated 3.8% of the population having depression, as well as 5% of adults in which 4% are men and 6% women, and 5.7% experiencing depression were adults of 60 years. Approximately 280 million people in the world have depression. Research conducted on 422 medical students showed that among these students. Most of the students

were suffering from moderate to severe stress because it was highly associated with medical studies and they were counted as 97.5%. The students suffered by teaching and studying-related stressors (93.9%) and collectively working and as team-related stressors (88.3%). Al-Shahrani, M. M., Alasmri, B. S., Al-Shahrani, R. M., Al-Moalwi, N. M., Al Qahtani, A. A., & Siddiqui, A. F. (2023).

Anxiety, depression and stress are mental and emotional health condition related to the abnormal function of different anatomical organ like brainstem, cerebrum, cerebellum and alteration in the autonomic and endocrine function Mohan, S.M.; Ruhi, J.M.; Kumar, K.A.; Jeppu, A.K.; Hanafy, N.A. (2021). High expectation and acquiring high scores for admission in medical field in young students is major leading cause of stress and depression. Poor counselling and poor career planning is also causing anxiety and stress Raj, R. R., Rajamohanam, R. R., V, V., Amin, A. A., M, D., & M, L. (2021). Medical student's life is full of competitions, problems and difficulties. The success for the students is to work hard and defeat the opponents meanwhile neglecting the problem will further lead to severe stress complications. These conditions effect s students' mental health and cause stress, anxiety and depression as they are very serious issues in medical student's life. Those issues must be dealt with some intervention-based solution for the safety of the critical life duration and mental health condition of the students (Baldassin, Ferraz, Castaldelli, Bhugra et al. 2013).

Depression, anxiety and stress effected the overall population in which 38.2% students were affected by depression, 46.9% students by anxiety and 24.1% students were affected by stress. The cause behind the depression, anxiety and stress but it was noted that the main factors were parental education, family history of mental illness and study related issues. The pre-clinical students suffer more because of the social, family and economic issues (Paudel, Gautam, Adhikari, & Yadav. 2020).

The objectives of this study are to examine the prevalence of depression, anxiety, and stress levels among fresh and repeater students of ETEA/MD-CAT in Peshawar, and to compare these levels between the two groups. The study also aims to investigate the relative incidence and levels of depression, anxiety, and stress among these students. The hypotheses of the study

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propose that the frequency of depression, anxiety, and stress will be higher among fresh students compared to repeaters. Additionally, it is hypothesized that depression, anxiety, and stress will be generally elevated among students appearing for the ETEA/MD-CAT in Peshawar, with anxiety affecting fresh students more significantly than repeaters

2. Method.

2.1 Research Design

Descriptive cross-sectional study was used

2.2 Sample

500 population of F.Sc students of Peshawar preparing for upcoming MDCAT test in various hostels and academies in Board, Town and Arbab road. The duration of study was from 7th September 2022 to 7th November.2022. Data was collected through dass-21 (questionnaire) during a week before the test. Purposive Sampling technique was used to collect the data. The sample size of 500 was calculated through online google sample size calculator with confidence level of 98%, margin of error 5% Population proportion 64%.

2.2.1 Inclusion Criteria

In this research study, fresh and repeater F. Sc medical students of ETEA and MDCAT has been selected between the ages of 18 to 24.

2.2.2 Exclusion Criteria

Those students of F. Sc pre-engineering and F.Sc computer science and those who were having depression history or have any previous mental health issues and getting any psychotherapy for depression, anxiety and stress were excluded from this study.

2.3 Instruments

2.3.1 Demographic data sheet. The basic information regarding students name, gender, age, email, Premedical education level, Institute and year of test, past medical history were taken on demographic sheet.

2.3.2 Depression, Anxiety and stress scale: DASS-21

The DASS-21 scales consist of seven items, divided into sub scales with measuring some psychological problems related with same domain. The depression is measured with DASS-21 by the following symptom like, self-disparaging, convinced that life has no meaning or value. The anxiety scale was to measure and know the following symptoms like Apprehensive, panicky, tremble, shaky, aware of dryness of the mouth. Stress was measured by having the following symptoms like over aroused, tense unable to relax, touchy, easily upset, and Intolerant of

interruption or delay. Dass-21 is internationally accepted as a best tool for measuring the negative emotional state of the target following all population; normal adolescents and adults, Children as young as 14-year-old. It is comprised of 21 questions, seven question for depression, seven for anxiety and seven for stress, each question need to be scored using 4 point Likert scales from 0 to 3 which indicate how much the statement applied to you. There is no right or wrong answer. The Cronbach's alpha calculated for DASS-21 scale was 0.959, it shows high internal consistency. And as for as Cronbach's alpha for sub scale is concern it calculated as 0.87 (95% CI 0.86 to 0.89), 0.92 (95% CI 0.91 to 0.93) and 0.89 (95% CI 0.88 to 0.90), separately. Alpha for these data would persist reliable if items were removed, remaining within the 95% confidence interval range of 0.95 to 0.97.

Inter-item correlation was calculated 0.739, and further inter-item correlations for sub-scales showed satisfactory discrimination (0.69–0.80, depression; 0.44–0.78, anxiety; 0.61–0.80, stress). Item showed the slightest discriminating item with value 0.49 the Item on the stress scale had displayed the uppermost item discrimination with value 0.82.

2.4 Procedure

The cross-sectional study had been employed with survey method for data collection, student participants were approached in the ETEA TEST preparation Academies and were first inform about the main objectives of the study in detail. Study was conducted on ETEA and MD-CAT students who are fresh and repeater appearing for upcoming test. The study samples consist of 500, male and female Students who were preparing for the test in Arbab road, Town, Board academies and academic hostels in Peshawar. The Demographic information sheet and DASS were provide to the students on several different academics in Peshawar. The verbal permission was taken from all students. Students were instructed to fill the survey with duration (10–15 minutes). Participants were ensured for the confidentiality of their shared information.

2.5 Statistical analysis

Data was collected after approval from the ERC of Peshawar medical college undergraduate medical research department. The spearman correlation test is used to determine the correlation and significance level were calculated to determine the positive and negative correlation in depression anxiety and stress between

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fresh and repeater students. Socio-demographic details including social background and academic information also demographic information which were including name, sex, age, class and e-mail of the participants. The students with mental health issues or medical history of depression were not selected for this study.

Dass-21 scale was the tool used for to assess the negative emotional state like depression, anxiety and stress. It is constructed by Syd Lovibond and Peter Lovibond in 1995. The purpose of the use of this scale was to measure depression, anxiety and stress.

2.6 Ethical Approval

Study was carried out after getting approval from ethical review committee of Peshawar medical college. Purpose of the study was explained to participants and verbal informed consent was taken from the fresh and repeater students. Information was kept confidential. The demographic information was including name, sex, age, class and, e-mail of the participants along with medical history of any mental health sickness.

3. Results

The descriptive statistics shows that the total number of students are 500 with mean value of 1.61 and with standard deviation of 1.50. The final sample for depression, anxiety and stress are 499, 499, 498 respectively. The minimum values for the depression, anxiety and stress are .0, .0, .0 and maximum value 245.1 and 126 respectively.

Table: 1

Descriptive Statistics about Depression, Anxiety and stress level among Fresh and repeater students of ETEA/MDCAT. N= 500

| Variables | N | Min | Max | M | SD |
|------------------------|-----|------|--------|-------|-------|
| Male/Female | 500 | 1.00 | 9.00 | 1.61 | 1.50 |
| 18-24 | 500 | .00 | 9.00 | 3.23 | 2.64 |
| Fresh and Repeater | 500 | 1.00 | 9.00 | 1.94 | 1.93 |
| Final Depression Score | 498 | .00 | 254.00 | 17.93 | 17.83 |
| Final Anxiety Score | 499 | .00 | 112.00 | 17.79 | 13.36 |
| Final Stress Score | 499 | .00 | 126.00 | 21.02 | 14.69 |

The descriptive statistics table no 1 show that the sample size is 500 and population is students of intermediate including only those who are appearing in the MD-CAT test for its time as fresh students and those who are repeating as repeater students. The mean vale of fresh and repeater is 1.9 and that of male to female is 1.6.

In table 2 the descriptive statistics also show that the sample size is 500 and population is students of

intermediate including only those who are appearing in the MD-CAT test for first time as fresh students and those who are repeating as repeater students. The mean value of fresh and repeater is 1.9 and that of male to female is 1.6. Out of 500, the total number of fresh students were 259(52%) and repeater students were 208(41.6%), the remaining students were not ready to show their class so we represent them separately. The total number of the male students was 321(64.2) and female students were 160(32%). The percentage of performance between fresh and repeater student is shown on the bar graph of intermediate ETEA/MD-CAT students Figure 1.

Table 2

The table shows the prevalence of Anxiety, Depression and, Stress among fresh and repeater students. N=50

| Variables | F | % | Anxiety | Depression | Stress |
|------------------|-----|-------|---------|------------|--------|
| normal | 159 | 31.9 | 20.0 | 31.9 | 38.6 |
| mild | 53 | 10.6 | 8.2 | 10.6 | 15.0 |
| moderate | 125 | 25.1 | 20.4 | 25.1 | 16.4 |
| severe | 62 | 12.4 | 12.2 | 12.4 | 17.4 |
| Extremely severe | 99 | 19.9 | 39.0 | 19.9 | 12.4 |
| Total | 498 | 100.0 | 99.8 | 100.0 | 99.8 |

Figure.1: The bar graph shows the performance percentage of fresh and repeater students of ETEA/MD-CAT.

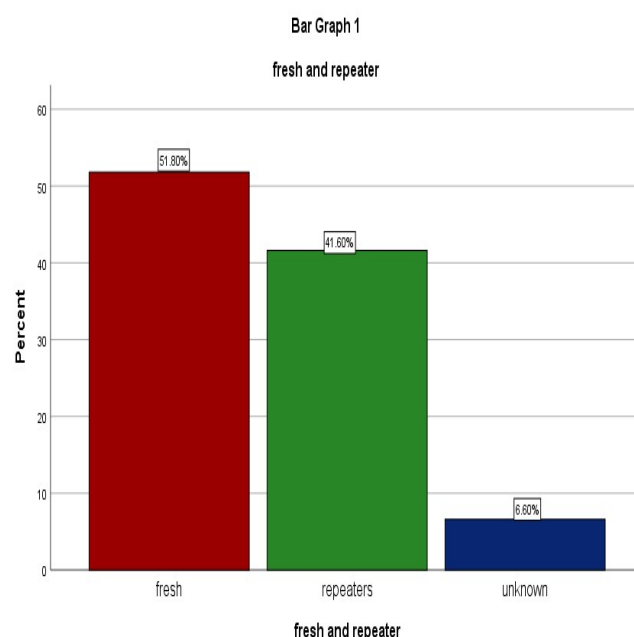
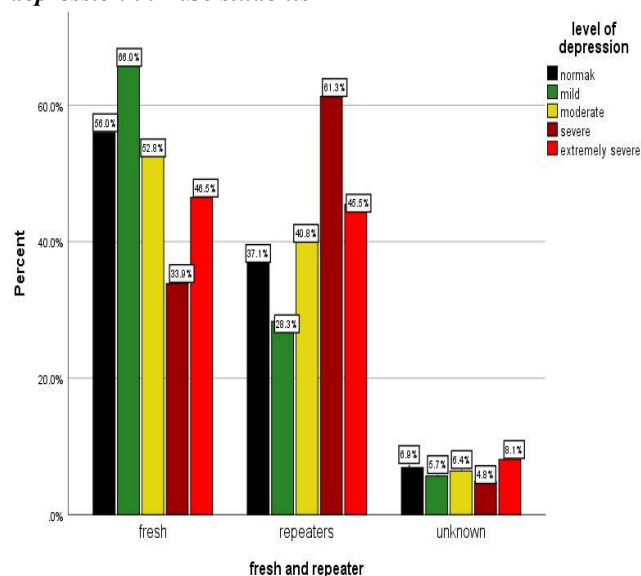
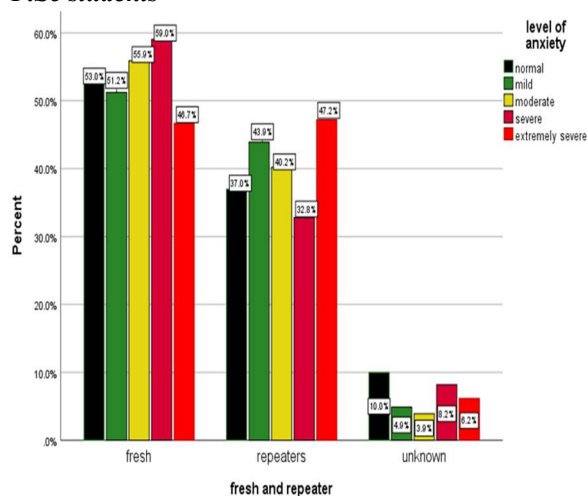


Figure 2: The bar Graph showing the level of depression in F.Sc students



The level of depression Bar graph shows the comparative study of depression between fresh and repeater students of ETEA/MD-CAT. The comparison shows that severe level of depression in fresh students is 33.9% where it is 61.3% in the repeaters. The bar graph shows that the extreme level of depression in fresh and repeater is positively correlating mean there is a very less difference between these two as 46.5% and 45.55 in fresh and repeater students respectively.

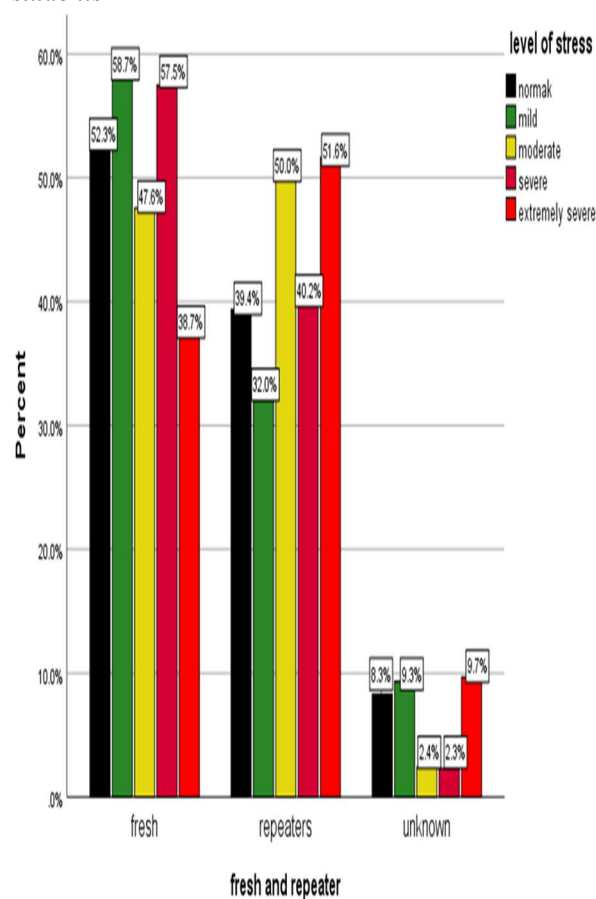
Figure 3: The bar Graph showing the level of Anxiety in F.Sc students



The above Bar Graph shows that the severe level of anxiety is quite high in the fresh with 59.9%

population of fresh students being affected where as its quite low in repeater students with 32% of the affected population. The extremely severe level of anxiety are almost equal with 46.7% and 47.2% in the fresh and repeater students respectively.

Figure 4: The bar Graph showing the level of stress in F.Sc students



The Bar graph of the level of stress shows that the severe level of stress is quite high with percentage of 57.5% competitive to the level of severe stress in repeater which is 40.2%. The extremely severe level of stress in fresh students is 38.7% where as it is 51.6% in the repeaters. The Chi-square test revealed Pearson chi-square $\chi^2 = 60.7$ and a significant difference in fresh and repeater students appear in ETEA test for Medical college the significant difference was observed for fresh students ($P < 0.00$) between male and female students, also significance difference is observed in repeater students ($P = 0.00$) was observed.

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Table 3

The Correlation between stress, Anxiety and depression among fresh and repeater students of MD-Cat/ETA N=500

| variables | Male/Female | Fresh and Repeater | Depression | Anxiety | Stress |
|-------------|-------------|--------------------|------------|---------|--------|
| Male/Female | 1 | .300** | .042 | .021 | .051 |
| Fresh and | - | 1 | .010 | .009 | .035 |
| Repeater | - | - | 1 | .644** | .557** |
| Depression | - | - | - | 1 | .630** |
| Anxiety | - | - | - | - | 1 |
| Stress | | | | | |

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4

Chi-square χ^2 result for Male/female, fresh and repeater students appear in ETEA/MD-CAT test (n=500).

| Variables | Fresh and Repeater | | | Total |
|-----------|--------------------|-----------|------------------|-------|
| | Fresh | Repeaters | Unknown students | |
| | 160 | 152 | 9 | 321 |
| Male | 93 | 51 | 16 | 160 |
| female | 259 | 208 | 33 | 500 |
| Total | 259.0 | 208.0 | 33.0 | 500.0 |

4. Discussion

Present research analyzed the role of negative emotional state and comparison of depression, anxiety and stress level among the fresh and repeater students of ETEA/MD-CAT at district Peshawar 2023. The findings suggest that the stress, depression and anxiety are significantly high in students' performance during ETEA and MD-CAT test, hence, our hypothesis has been supported (Table 2). Previous research conducted in different countries and in Peshawar displays the same trend. For example, McCurdy Correlation among these variables (Table 4) thus, play significant role in student's performance during entry test in medical field. McCurdy, B. H., Scozzafava, M. D., Bradley, T., Matlow, R., Weems, C. F., & Carrion, V. G. (2022). The study demonstrated that the Medial College students having capability to manage their own emotions also have an ability to positively adjust their behaviour resulting in better adjustment, self-efficacy, psychological safety, and learning engagement in university. McCurdy, B. H., Scozzafava, M. D., Bradley, T., Matlow, R., Weems, C. F., & Carrion, V. G. (2022). Further, present findings suggest repeater students were having low stress anxiety and depression as compare to fresh students (figure 3, 4, 5). Further, the repeater have 61.3% severe depression and fresh have 33.9 % severe depression , The

& B. H., Scozzafava ET AL, suggested significant role of depression, anxiety and stress in predicting student academic adjustment leading to low performance.¹¹ Similarly, Satu Viertio ET AL, suggest distressing emotion state is related with mental condition and poor performance as the mental performance effects students to show good performance in stressful situations. The depression, anxiety and stress level is highly correlated with the poor performance of fresh and repeater students at ETEA and MD-CAT test as the result shows high

stress level was 57.5 % in fresh and 40.2 % were reported in repeater students of MD-CAT (Table 2), according to the results the fresh students had high level of anxiety of 50% and 32.9 % anxiety were reported in repeaters students, it could be because that initially students are motivated to start test , they put in efforts to socialize with their fellow students, distress due to study pressure and new experience socially and academically. Proper healthy management during medical studies can be effective for these situations to enhance students' positive emotions and sense of efficacy. Higher efficacy serves as main ingredient for motivation leading to better academic adjustment. Viertio, S., Kiviruusu, O., Piirtola, M. *et al.* (2021).

Conclusion

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The fresh and repeater medical students had depression, anxiety, and stress level before MD-CAT test. Medical study burden and pressure were the major reasons for their high DASS-21 scores. The depression and stress are higher in repeater than fresh students. Lei X. (2022).

Anxiety was very high in fresh students than repeater students for their MDCAT Examination. Anxiety was the most prevalent variable among all the students effecting badly 50% of all the population.

Limitations

The investigation's main focus was on the mental health of the students so only depression, anxiety, and stress were examined. Yadak S. (2017).

The remaining common mental health issues among medical college students were not taken into account so further studies can be conducted to explore the hidden cause for stress depression and anxiety associated with study burden and limited timeline for admission. Second, the reasons of these extremely common problems were not evaluated; instead, the current research merely looked at the prevalence of these psychological morbidities.

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