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Prevalence of Stress and its Risk Factors among the Students in University of Malakand, Khyber Pakhtunkhwa, Pakistan

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Abstract

The purpose of the present study is to assess the prevalence of stress and to find out various factors associated with stress among the students of University of Malakand, Khyber Pakhtunkhwa (KPK). To select students from the university, stratified random sampling is used. Education department are considered as strata, and from each stratum simple random sample are selected. The stress was assessed by using 'the workplace stress scale'. Data are analyzed using SPSS version 23 statistical software. Ordinal logistic regression model is used to identify the significant risk factors of stress among ungraduated students. We found that 67% students have suffer from higher stress. The logistic regression shows that significant factors associated with stress are academic workload, time management and self-Injury or Illness. This study investigated high prevalence of stress among undergraduate students in university. There is room for studying further the incidence of stress among these students and the major causes of stress.

Keywords: Stress, Stratified Random Sampling, Workplace Stress Scale, Academic Workload, Time Management.

Introduction

Stress is a link part of life very difficult to define. No one is stress-free in this modern era. It affects negatively mental and physical wellbeing of individual. Stress level is differing from subject to subject. Each person needs a certain amount of stress to perform at the optimum. Stress becomes a problem when it perceived as negligible or as exceeding one's capacity to cope, then distress result. Students being passing from the most critical period of life are the unique group of people. They experience many stressful events like residing in hostels, challenging work assignments, more tough syllabus, and projects. These challenges need to be handled carefully that they get stable mental health and can achieve high level of academic achievement (Asif et al., 2020).

Students themselves often report ongoing stress from their education, which we call academic stress, such as pressure to achieve high grads and concerns about receiving poor grades. In the OECD countries, 66% of students found under stress due to academic pressure, and 59% of them have stress due to exam tension. Moreover, among well-prepared students 55% felt anxiety before test. Further, 37% of students found anxious when they are studying. Concerning the course work, the girl found more anxious than boys (OECD, 2017).

Some studies assessed the risk factors of incidence of stress among students. The academic stress specifically related to time management, anxiety and leisure satisfaction among undergraduate students (Misra et al., 2000). Another risk factors of prevalence of stress are time management (Al-Khatib, 2014). Some other causes of stress in students are; age, vastness of academic curriculum, year of studying, lack of recreation, fear of poor performance in examination, loneliness, domestic problem, and residency in hostel (Anuradha et al., 2017). In another study, academic problems, financial problems, gender, family troubles and transportation problems are major reasons of occurrence of stress (Seedhom et al., 2019). Parents and teacher pressure on students also affects their stress level (Premalatha, 2020). Similarly, stress level found significantly different in male and female

students. The female students felt more stress than male students. Academic achievement also correlated to level of stress among students (Yıldırım et al., 2016).

Literature Review

Rois et al. (2021) investigated that Students' pulse rate, systolic and diastolic blood pressures, sleep status, smoking status, and academic background are significant factors for predicting the incidence of stress. Their study applied an alternative method advanced machine learning (ML) approaches instead of basic logistic regression (LR) model.

Asif et al. (2020) used survey research method, and collected information by applying simple random sampling method. Their study found that 75%, 88.4% and 84.4% students felt depression, anxiety and stress respectively. Alsaleem et al. (2021) concluded that high perceived stress is a substantial problem among university students. Further, their study found that female students and healthcare students are at a greater risk. They found that incidence of stress is associated with perceived insufficient family income, smoking, and low obtained marks. In a study conducted by Lee et al. (2022), stress was compared to a number of socio-demographic, health, and behavioral variables among undergraduate students enrolled in an Australian institution. They discovered that 53% of the students reported feeling some amount of stress, with 37.4% reporting moderate to severe levels. Being in a relationship, pursuing a degree unrelated to health, working fewer than 21 hours per week, adopting a poor dietary pattern, residing in a shared residence, infrequently exercising, having high body mass index.

Satpathy et al. (2022) found 91% of students felt high levels of stress. The risk factors of stress found in their study were loneliness, curriculum vastness, frequency of examination, competition with peer, performance in examinations, worry about future, relation with opposite sex, and quality of food. Reddy et al. (2018) examined stress and its risk factors among university students. They declared that personal inadequacy, fear of failure, interpersonal difficulties with teachers, teacher pupil relationship and inadequate study facilities are the main risk factors of stress. Lee et al. (2021) conducted study among university students on prevalence of stress during COVID-19 pandemic. Their study conforms 88% incidence of moderate to severe stress, 44% incidence of anxiety and 36% prevalence of moderate to severe depress among students. They further reveal the risk factors of these disorders which are, low-income, academically underperforming, gender, and rural students. Their study point out that most of the students who felt moderate or severe disorder never used the mental health services.

Some other studies identified common factors responsible for stress which include ethnicity/race, age, financial pressure, health and lifestyle factors, year of study, academic performance, academic discipline/group, part-time/full-time status (Stallman (2010), Abdulghani et al. (2011), Mikolajczyk et al. (2009), Waghachavare et al. (2013), Yusoff et al. (2013))

Teh et al. (2015) conducted study on the incidence of anxiety, depression and stress, and assess the its range from moderate to extremely severe which was 55.5%, 30.7%, and 16.6% respectively. In their study logistic regression model was used which identified the significant factors for depression, anxiety and stress which includes family income, relationship status, social life, , ethnicity. Hamdan et al. (2021) found 87% of the students who felt stress which is very higher rate. Their study identifies the fact that the higher the stress level, the lower the academic performance. That is GPA and incidence of stress was significantly negative related. Bashir, Amir and Bajwa (2019) work on five distinct learning stressors which are intrapersonal, interpersonal, academic, learning, group social and teaching stressors. Among these factors, the academic stressor is found very influential upon the respondents. Their study strongly recommended that higher educational leaders should take serious measures in order to controlled/managed the server effect of stress among the students. Abro (2022) used the the non-probability convenience sampling method to select the students for taking information regarding incidence of stress. In their study Cohen's scale of measuring stress was used. Further, they used various statistical technique like Pearson Chi Square test and Binary Logistic Regression Analysis for investigating the factors responsible for stress incidence. He found mother job and family member or friend suffering from stress the most influensial risk factor for incidence of stress.

Qamar, Khan and Kiani (2015) conducted study on incidence and risk factors of stress among students. They selected 115 students with average age 19±6.76 years. Among the selected students 35(30.4%) felt mild to moderate physical problems, 20(17.4%) felt physical problems and 60(52.2%)

did not felt any physical problem. They estimated the mean stress score which was 19.6±6.76. The risk factors found in their study were, new college environment, environmental factors, tough study routines, personal factors, and student abuse. Eravianti et al. (2020) used quantities studies on the high school teenager who were selected by multistage random sampling method. Their study investigated the risk factors of stress and found stunting is the main responsible factor for incidence of stress.

Keeping in view the saver negative effect of stress on students' health and achievement, the present study investigated the incidence and risk factors of stress among students in University of Malakand, with the following objectives,

1) To estimate the prevalence of stress among the under graduate students of University of Malakand.
2) To identify the risk factors of stress among the under graduate students of University of Malakand.

Research Hypothesis

This study is conducted under the following research hypothesis,

1. The higher the academic load the higher the incidence of stress among the under graduate students in University of Malakand.
2. The low the time management skill the higher the prevalence of stress among the under graduate students in University of Malakand.
3. Having self-injury or illness are more prevalent to stress among the under graduate students in University of Malakand.

Methodology

Study area

The University of Malakand (UOM) one of the public sector universities founded in 2001. The university situated in an attractive location near the River Swat. A charter signed by the governor of Khyber Pakhtunkhwa created the official status of UOM. The higher education commission (HEC) of Islamabad has approved it. The UOM offers undergraduate degrees and postgraduate program in number of academic disciplines, these include mathematics, physics, IT, tourism and hotel management, botany, economics, education, biotechnology, political science, software engineering, English, Pashto and oriental languages, statistics, geology, Islamic studies, journalism and mass communication, law, zoology, software engineering, management studies, psychology and sociology.

The university has 7,000 students, 284 teaching faculty, 750 employees, 28 departments (University of Malakand). The 2023 QS world rankings placed the University of Malakand among the top 351–400 in Asia. (Press, 2022 and University of Malakand home page)

Data Description

The population of this study is undergraduate students of University of Malakand (UOM), Khyber Pakhtunkhwa, Pakistan. This University have 28 departments (https://uom.edu.pk/departments). The data was collected by using stratified random sampling which is one of the well-known sampling techniques. Academics departments are considered as strata. Thus, students are selected from each department using equal allocation method. For the data collection a questionnaire is developed for data collection. Simple and easy words used in questionnaire so that respondents would easily understand as well as answer them. The workplace Stress Scale questionnaire was used. According to this scale, scoring 0 to 15 indicate no stress or stress is not an issue; 16 to 20 had fairly low stress; 21 to 25 had moderate stress and 26 to 30 had severe stress and 31 to 40 had potentially dangerous stress. Items are rated on a 5- point Likert scale. The responses of questionnaire are coded, tabulated and analyzing using statistical packages for social sciences (SPSS 23).

Stratified Random Sampling

One of the main objectives of estimation is obtain representative sample from the population. A well-known and mostly used method of sampling is simple random sampling which is appropriate for population which is homogeneous with respect to the characteristic under study. For such population the simple random sampling produces representative sample from population. On the other hand, when the population is not homogeneous or heterogeneous with respect to the characteristic under study, then the simple random sampling cannot produce representative samples from the population. In this case we switch to another sampling scheme, stratified random sampling. Stratified random sampling divide the heterogeneous population into sub population. Care must be taken that sampling units are homogeneous within the sub population. While, it must be heterogeneous between/among

the sub population. The smaller groups or subpopulations are known as strata. Each stratum is treated as a separate population and sample are drawn by simple random sampling method from it. For example, estimating the incidence of COVID -19 in an adult population, it would be possible to divide the population into strata on the basis of region i.e district. This would yield district wise incidence of COVID-19. The sample could also be stratified by urban, rural or peri urban which would give us area-wise of COVID-19 with equal representation from each group.

Logistic regression model

Logistic regression sometimes called the logistic model or logit model, used to analyze the relationship between multiple independent variables and a categorical dependent variable, and to estimates the probability of occurrence of an event by fitting data to a logistic curve. The logistic regression is the form of generalized linear regression in which the response variable is categorical and the predictor variables are of any types categorical discrete, or continue. The Logistic regression is widely applicable in health, sciences, social sciences and sports modelling (Singh, 2003).

Ordinal logistic regression model

Standard logistic regression is extended to ordinal logistic regression model. The ordinal logistic regression model is suitable when response variable considered of three or more categories and every category has important sequence. For example, agreement of respondent in some question (0= not agree, 1= somewhat agree, 2=agree and 3= strongly agree). In this situation there may be an underlying continuous variable but the distance between adjacent level is unknown. Three types of ordinal logistic regression model are very common to model such categorical variable, which are the adjacent category (AC), continuation ratio (CR) model and proportional odds (PO) model. Among these models the most applicable model is proportional odds (PO) model. Almost all software packages have by default the PO model.

In the present study we examine effect of various factors on the incidence of stress. The incidence of stress is ordinal variable because from normal to severe level. Therefore, we cannot use the classical linear regression model because the response variable is non-normal. For modelling of ordinal variable versus other variables which either ordinal or continues, the ordinal logistic regression model is suitable model. (Archer & Lemeshow, 2006: Hosmer et-1997: Larson et al., 2000). The response variable (level of stress) is classified into five categories: lower stress, fairly low stress, moderate stress, severe and potentially dangerous.

Results

We investigated 200 students consisting 79 females and 121 males. Table 1 shows stress level of the respondents. The table shows that 2% respondents have no stress or stress with no issue, 31% are having stress with fairly low level, 48% indicated moderate, 17.5% showed severe, similarly 1.5% revealed that they have potentially dangerous level of stress.

Table 1: Stress Levels of the Respondents

	No. of students	Percent	Valid Percent
0	4	2.0	2.0
1	62	31.0	31.0
2	96	48.0	48.0
3	35	17.5	17.5
4	3	1.5	1.5
	200	100.0	100.0

Table 2 Incidence of Self-Illness, Heavy Academic Workload and Time Management among Students

	Yes	No
Self-illness	163 (81.5%)	37 (18.5)
Heavy academic workload	6 (48.0%)	104 (52%)
Time management	125 (62.5%)	75 (37.5%)

Table 2 shows that 163 (81.5%) students are having stress due to self-Injury or. Moreover, 96 (48%) out of 200 are facing too much academic responsibilities. The table further reveals that 125(62.5%) students out of 200 have problem of time management.

Table 3: Parameters Estimates using Logistic Regression Model.

	Co-efficient	**Std. Error**	**P value**
Constant 1	-3.406	.519	.000
Constant 2	-.164	.214	.445

Constant 3	2.109	.267	.000
Constant 4	4.980	.655	.000
Injury or Illness	.615	1.347	.076
Academic workload	.602	1.271	.026
Time management	.364	1.168	.031

Table 3 presents the result of ordinal logistic regression which shows that injury or illness, academic workload, and time management have p value less than 0.05. Thus, these factors are significantly related with incidence of stress. The coefficient value of injury or illness, academic workload, and time management are positive which indicates that these factors increase the risk of stress.

Discussion

The present study is conducted in order to estimate the incidence of stress and its risk factors among under graduate students of University of Malakand. High incidence rate of stress is found in the students. The incidence rate is 65% in our study. While Asif et al. (2020) found 84.4% incidence rate of stress among university students in Sialkot Pakistan. The incidence of stress is 37.4% among undergraduate students in a Malaysian university Jia and Loo (2018). Thus, our study shows comparatively lower incidence of stress among students then national universities and international university students.

Time management play vital role in productivity and mainlining stress in individual. Moreover, the students who can manage their time effectively can get academic success which is their ultimate goal. The present study suggested the significant relationship of time management and stress level. The same relationship is found in other studies like Al Khatib (2014) and Misra et al. (2000).

Better academic workload leads to better academic achievement of students. The academic workload consists of number of credit hours, study hours per week and number of assignments for the last semester (Rahim et al., 2016). But due to heavy academic workload students become very stress full which affects their performance (Gajalakshmi et al., (2012).

Our study found that stress incidence is positively associated with illness or injury. The students having health problem are more prevalent to stress. The same result found by Wang et al. (2020) that Injury or Illness is significantly associated with incidence of stress.

Conclusion

This study shows high percentage stress among students. The predominant factors associated with stress were academic workload, time management and poor health status. The findings of this study may indicate a need for continuous stress management programs, especially for stress problem among undergraduate students. A consideration needs to be given to the needs and difficulties of the university's students. Therefore, to avoid the stress, urgent preventive measure should be adopted. It is recommended that the same study should conducted in all Universities of Khyber Pakhtunkhwa that students can manage their stress after awareness of their risk factors.

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