Full Length Research Paper

Academic performance and perceived stress among university students

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This study aims to investigate the effect of factor such as perceived stress on the academic performance of the students. A sample of 199 university graduates and undergraduates in Rawalpindi and Islamabad was selected as a statistical frame. Instrumentation used for this study is previously validated construct in order to evaluate the effect of factor under study. To determine the relationships between perceived stress and academic performance, correlation coefficient was calculated. Perceived stress was found to have significant negative correlation with academic performance of students. Moreover, the mean stress score among low academic achiever versus high academic achiever as well as low stress level and high stress level group were found to differ significantly. However, stress level among male and female students do not differ significantly whereas engineering students differ significantly from management sciences students based on the perceived stress score. Course load, sleep problem and social activities were the major source of stress affecting academic performance of the students. In nutshell, perceived stress was found important factor that needs university administration, faculty and parent's focus on effective psychoanalysis services along with stress management programs that could be useful for achieving academic success.

Key words: Academic performance, perceived stress, engineering students, management science students.

INTRODUCTION

Students are the people who are going to grow up and matters to the world. Nations need future professional as well as the people who are good human beings and prove beneficial for the society. University students are at that point of academic career where they are about to enter the professional regions. At this stage they are faced with many problems, as much of the literature reflects which hinders their performance and interpose the achievement of the desired goals. These problems which may be termed as stressors can be categorized as academic, financial, time or health related, and self-imposed (Goodman, 1993; LeRoy, 1988). In addition to its sleep deprivation, social activities, job responsibilities and, having boy/girl friend are also some other factors which turn the heads of the students.

Therefore these days, there has been a lot of wakening in society and academia in particular about the effects of stressors resulting in making the topic interesting and serious enough, as suggested by the much of the research (Rees and Redfern, 2000; Ellison, 2004; Ongori and Agolla, 2008). If not well managed this factor could cause/create positive as well as negative consequences according to the level of stress experienced by the students and society as a whole (Stevenson and Harper, 2006; Tweed et al., 2004; Smith, 2002).

At university level, there may be stressors like course/syllabus load, financial problems, relationships with classmates, over crowded lecture halls, semester system, anxiety, employment requirements are the potential indicators which could affect the academic performance (Spielberger, 1983; Barker, 1987; Ongori, 2007; Fair Brother and Warn, 2003). Moreover, much of the research reveals that some of the factors related to health include nutritional problems, exercising activities and social support also influence the academic performance of the students and add to the reason for

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lower GPA (Hammer et al., 1998; Trockel et al., 2000). The research concluded by Kelly and Clanton (2001) concluded that less sleep or more sleep factor not only create maladjustment psychologically as well as anxiety which is a significant contributor to low academic achievement.

Numerous other studies have found a relationship between stress and poor academic performance (Clark and Rieker, 1986; Linn and Zeppa, 1984, Struthers et al., 2000). In similar studies, a significant negative correlation was found between the stress levels of students and their academic performance (Blumberg and Flaherty, 1985; Felsten and Wilcox, 1992) as well as an inverse relationship between self-reported stress level and academic performance.

Research purpose and objectives

The purpose of the study is to explore the effect of perceived stress on student academic performance and to identify the factors that cause stress among students which further affect their academic performance.

The following research questions are formulated to guide the study.

1) Describe relationship between perceived stress and student's academic performance; Moreover, relationship between academic performance and perceived (High Vs Low) stress levels.
2) To determine whether there is a difference between low academic achievers and high academic achievers based on perceived stress score.
3) To determine whether there is a difference between male and female university graduates on perceived stress scores and
4) To determine whether there is a difference between Engineering students and Business students on perceived stress scores.

METHODOLOGY

Data collection

The research was based on primary data, which was collected by means of survey questionnaire from University students in Rawalpindi, Islamabad.

Population

The population for this study is university students enrolled in universities of Rawalpindi and Islamabad.

Sample

The sample size for the study is 250 university students; and convenience sampling has been used. This method is used to

make research procedure faster by obtaining a large number of accomplished questionnaires rapidly and efficiently.

Instrumentation

A self administered questionnaire used to collect the data consist of three sections.

Section A is the student's profile. This section is developed by the researcher and participants were asked to report data about themselves and some demographic information.

Section B was Perceived Stress Scale (PSS), developed by Cohen et al. (1983). This scale of 14 items is mostly widely used psychological instrument for measuring stress. The PSS questions seek the respondent's feelings and thoughts during a certain time frame. The information obtained will help to determine the level of stress they perceived at that particular time. In each case, a five point likert type scale ranging from 1(Never) to 5(very often) was used. PSS scores were obtained by reversing the score on the six negative items, (e.g., 1=5, 2=4, 3=3, 4=2, 5=1). Items number 4, 5, 6, 7, 9, 10, 12 and 13 are positively stated items.

Section C was the stress factors survey. This section requires the participants to identify the factors of stress that they experience during the given time frame. Several factors of stress were listed in the questionnaire and respondents may indicate more than one factor, which they perceive relevant to them. The stress factors focused in this study are limited to those discussed by Cohen et al. (1983).

Moreover in the questionnaire, the student's academic performance is obtained from their Grade Point Average (GPA), which is a common measure of academic performance used in universities here in Pakistan.

Data reliability and normality

Since normality in the data is considered important for better results and generalizations to wider population. In this paper, normality and distributions of data was crossed checked by means of multiple methods like kurtosis, skewness, Q-Q Plots and Kolmogorove-Smirnov test; overall the data were found normal. Likewise consistency of response was checked by means of Cronbach alpha. On the bases of the Cronbach alpha results, internal consistencies of the response were found satisfactory.

It may be noted that in behavioral research an alpha of 0.60 or higher is acceptable and indicates the reliability of the scale use (Kerlinger and Lee, 2000). The reliability coefficient for Perceived Stress Scale (PSS) developed by Cohen et al. (1983) is (0.69).

Data analysis

All data were analyzed using the statistical package for the social sciences (SPSS). Moreover, descriptive analysis, correlation analysis and t-statistics was used to evaluate the study objectives.

RESULTS AND DISCUSSION

Among the respondents, it was found that 62% (n=123) were male and 38% (n=74) were female. It may be noted that the age range 18 to 25 years represented the largest percentage of respondents (59%). The students who are doing their degrees in Management Sciences (Business

Table 1. Student performance.

GPA	Frequency	Percent
3.50-4.00	55	27.6
3.00-3.49	49	24.6
2.50-2.99	50	25.1
2.00-2.49	38	19.1
0.00-1.99	7	1.5

Table 2. Means and standard deviations.

Stress level	Means	SD
Perceived stress	2.76	0.419

Table 3. Pearson correlations with GPA.

Stress level	R	Sig.
Perceived stress	-0.392**	0.000

**, *Correlation is significant at 0.01 and 0.05.

Table 4. Stress level (Low vs. High) correlation with GPA.

Stress level	r	Sig.
High perceived stress	-0.50*	0.000
Low perceived stress	-0.36*	0.000

*Correlation is significant at 0.05.

Administration) are 101 (51%), students who are doing their degrees in Engineering (Software Engineering/Electrical Engineering/Telecom Engineering) are 87 (44%), while others constitutes 5%.

Table 1 indicates that in general, we can say that student performance is good, where majority (52.2%) of them scored Grade Point Average (GPA) of 3.00 and above. Out of this number (27.6%) of them achieved 3.50 and above which indicates excellent academic performance. It may be noted that only 20% of the students scored GPA less than 2.00. This indicates that the number of low academic achiever is relatively low.

Stress factor survey

In stress factors survey, students were asked to identify the stress factors that might contribute to their academic performance. There were 16 stress factors listed in the questionnaire.

Majority of the students (53%) claimed course load is the source of their stress which affects their GPA.

Moreover, social activities (36.9%), not sleeping too much (25%), sleeping much (32%), problems with boy and girl friend (20%), not exercising enough (17.3%), nutrition (13%) contribute to stress among students. Other factors do not really contribute to stress among students.

Table 2 explains the means and standard deviations of the factors which depicts the dependent variable that is, academic performance. It may be noted that though students tilt towards agreement side, the stress level is not so high.

However, 30.6% of the students were found upset because of something that happened unexpectedly in the previous semester with mean (3.22±1.00), 35% found nervous and stressed, 45.8% were found that they could not cope up with important changes that were occurring in student's life. 53% of the students do not found themselves thinking about the things that they have to accomplish, 70% of the students felt that they are not confident about their abilities to handle their personal problems. 46% of the students were not able to control the way they spend their time in the last semester. However 37% of the students were found angered because of the things that were beyond their control. 26.1% of the student felt that problems are strut up; so soaring that they could not surmount them.

To determine the relationship between academic performance (GPA) and the independent variables perceived stress, Pearson product moment correlation coefficient was calculated. Tables 3 and 4.

Table 2 depicts that there is a significant correlation between perceived stress and academic performance. The value of correlation is (-0.392) which implies that when the level of perceived stress is higher, the academic performance of the students is lower. However, it is important to note that correlation is near to moderate. It reflects that the stress level they experience was not beyond the limit where it could not be handled or as high to the extent that they cannot cope with their academic activities. It is not so surprising that because of this, more than 50% of the students score GPA more than 3 which are considered as good academic performance. To investigate further, we divide the stress the students perceived into two levels that is, high stress level and low stress levels. The students whose total stress score is 35 and above out of 70 (total stress score) are categorized as high stress level and those students whose stress score is below 35 are categorized as low stress level. Moreover, it has also been seen that the relationships also varies according to the stress levels the students perceived, that is, if stress level is high, the academic performance is significantly more lower (r = -0.50) as compared to the lower stress (r = -0.36). An interesting fact is also noted that in both stress levels groups (high and low), there is an inverse correlation between the academic performance and perceived stress; however there is significant difference among male and female

Table 5. Mean perceived stress scores among the two categories of the students relative to their academic performance.

Category	GPA	Mean	SD
Perceived stress	Low GPA	2.9037	0.393
	High GPA	2.6557	0.390

Stress level	Levene's test for equality variances		t-test for equality of means	
Perceived stress	F	Sig.	t	Sig.(2-tailed)
	0.313	0.576	4.534	0.000

Table 6. Mean perceived stress scores among the two categories.

Stress level	Gender	Mean	SD
Perceived stress	Male	2.7340	0.421
	Female	2.8065	0.392

Stress level	Levene's test for equality variances		t-test for equality of means	
Perceived stress	F	Sig.	t	Sig.(2-tailed)
	0.784	0.377	-1.179	0.240

Table 7. Mean stress among the management students and engineering students.

Stress level	Discipline	Mean	SD
Perceived stress	Management students	2.6987	0.368
	Engineering students	2.8253	0.451

Stress level	Levene's test for equality variances		t-test for equality of means	
Perceived stress	F	Sig.	t	Sig.(2-tailed)
	5.040	0.026	-2.067	0.040

students as well as their academic performance. Female students still have performed better than the male students and have better GPA than Male students even in case of some sort of stress.

Table 5 displays the mean perceived stress scores among the two categories of the students relative to their academic performance (that is, low GPA versus high GPA). It has been found that there is significant difference in the perceived stress between two categories of the students. It may be concluded that students with more mean perceived stress have low GPA as compared to those with less mean stress and have relatively high GPA. So perceived stress have significant impact on the student's academic performance.

Table 6 displays the mean perceived stress scores among the two categories, that is, gender wise (male versus female). It has been found that there is no significant difference in the perceived stress scores between male and female university students.

Further, the students are categorized discipline-wise into two (Table 7). The students who are doing their degrees in BBA and MBA are categorized as Management students. On other hand the students who are doing their Engineering degrees (that is, Electrical Engineering, Software Engineering and Telecommunication Engineering) are categorized as Engineering students. In order to see the difference between the mean stress among the Management students and Engineering students, t-test results reveals that there is a significant difference between the mean stress scores among the managers and engineers. It may be noted that the stress score among engineers is more than the mean stress score among managers (Management students). Although the difference in the stress is not so high among Management students and Engineering students, however, we can say that engineering syllabus or study requires more time, concentration and hard work, that is why Engineering

students have more mean stress score than Management students**.**

CONCLUSION AND RECOMMENDATIONS

The educators and behavioral scientists hold it very important to identify the effect of the various factors on student's academic performance these days.

Results of this study reveal that majority of the students (53%) claimed that course load is source of stress which affects their GPA. The reasons could be lack of time management, research based study requirements, semester system and some security conditions prevailing in the country due to which unexpected holidays hinder their studies. Moreover, other causes are social activities (36.9%), not sleeping much (25%), sleeping too much (32%).

Here it is important to mention that most of the universities are offering undergraduate and graduate programs both in morning and evening sessions. Due to this, the problem of sleeping too much and not sleeping much are observed. The students of evening sessions sleep till late hours in the morning because they could not sleep at night due to many reasons either conversation on cell phones or using social networking sites, and so have sleeping too much problem. These student sleep the whole day till their session starts in the evening because the overall set up in the country, that is schools, colleges, job routines of the people around are in the morning sessions and these students found themselves alone at home so they prefer sleeping, ultimately causing many problems and affect their academic performance.

On the other hand, students enrolled in the universities in the morning sessions, they have not sleeping much problems because they are busy the whole day within the university and at night with friends on the cell phones or using social networking sites the whole night, as the telecommunication companies here in the country are offering free night packages and phone calls are free. This is a very serious concern observed in the country and government is now trying to take some sort of action or legislation against the free sms and free phone calls night packages as it is spoiling the young generation as a whole. The study also show that problems with boy and girl friend (20%) contribute to stress among students. Other factors does not really contribute to stress among students.

Further, a significant correlation was found between perceived stress and academic performance with correlation coefficient (-0.392). It means that when the level of stress is higher, the academic performance will be lower.

These findings are inconsistent with Womble (2003) who found that student stress was not significantly correlated with student GPA. However, it was consistent with Blumberg and Flsherty (1985) and Felsten and Wilcox (1992).

Moreover, since the correlation is weak or more generously moderate, it indicates that the stress level of the student is not so high. It is quite surprising that more than 50% of the students have more than 3.00 GPA. To investigate further, moreover, it has also been seen that the relationships also varies according to the stress levels the students perceived that is, if stress level is high, the academic performance is significantly more lower (r=-0.50) as compared to the lower stress (r=-0.36). An interesting fact is also noted that in both stress levels groups (high and low), there is an inverse correlation between the academic performance and perceived stress found; however there is significant difference among male and female students as well as their academic performance is concerned. Female students still have performed better than the male students and have better GPA than male students even in case of some sort of stress.

Moreover, the mean perceived stress scores among low academic achiever and high academic achiever reveals a significant difference. It may be concluded that students with more mean perceived stress have low GPA as compared to those with less mean stress and have relatively high GPA. So perceived stress have significant impact on the student's academic performance.

The gender-wise (male versus female) means perceived stress scores among the two categories reveal that there is no significant difference in the perceived stress scores between male and female university students.

Further, the students are categorized discipline-wise in two. The students who are doing their degrees in BBA and MBA are categorized as Management students. On other hand, the students who are doing their Engineering degrees (that is, Electrical Engineering, Software Engineering and Telecommunication Engineering) are categorized as Engineering students. In order to see the difference between mean stress among the Management students and Engineering students, t-test results reveals that there is a significant difference between the mean stress scores among the managers and engineers. It may be noted that the stress score among engineers is more than the mean stress score among managers (Management students). Although the difference in stress is not so high among Management students and Engineering students, however we can say that Engineering syllabus or study requires more time, concentration and hard work; that is why Engineering students have more mean stress score than Management students.

So it is recommended that the University Administration or Deans of the Department plan suitable activities program for students such as stress management programs, counseling sessions, confidence building programs, problem solving skills in order to overcome the problems of the students whether they are personnel or related to studies. Moreover, it is also suggested that there should be a student counselor or student affairs committee whose

purpose is to not only provide counseling related to the studies but also solve problems that student face. It has also been suggested that the universities should run the programs only in the morning sessions particularly at the undergraduate level because the morning shifts is well suited to the students as almost all the education at schools and college levels in the morning till noon. Similarly the parent's job routines are also in the day time.

Parents should also check on the use of the communication and social networking technologies because they are causing problems of sleep at night.

So the university administration and faculty members should also take serious notice of the observations found in the study and take some remedial measures in order to reduce the stress as it is affecting their academic performance.

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