TÍTULO: Relación del rendimiento académico con el estrés percibido y el índice de masa corporal.

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RESUMEN: El presente estudio examinó la relación del rendimiento académico con el Índice de Masa Corporal y el Estrés Percibido entre los estudiantes de posgrado en Pakistán. El objetivo del estudio fue examinar el rendimiento académico de los estudiantes de posgrado que estudian en universidades públicas de Pakistán. Un total de 362 estudiantes de MPhil Education (282 hombres y 80 mujeres) fueron seleccionados al azar para participar en la encuesta, siguiendo una técnica de muestreo aleatorio simple. La relación entre el Índice de Masa Corporal, el Estrés Percibido y el Rendimiento Académico de los estudiantes se calculó utilizando el software SPSS versión 20. Los resultados mostraron que el Rendimiento Académico de los estudiantes tiene una correlación negativa con el estrés percibido.

PALABRAS CLAVES: rendimiento académico, índice de masa corporal, estrés percibido.

TITLE: Relationship of Academic Performance with Perceived Stress and Body Mass Index.

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ABSTRACT: The present study examined the relationship of academic performance with Body Mass Index (BMI) and Perceived Stress (PS) among postgraduate students' in Pakistan. The objective of the study was to examine the academic performance of postgraduate students studying in public universities of Pakistan. A total of 362 MPhil Education students (282 male and 80 female) were randomly selected to participate in this survey study, following a simple random sampling technique. The relationship among Body Mass Index (BMI), Perceived Stress (PS) and students' Academic Performance (AP) was calculated by using SPSS software version 20, the findings showed students' academic Performance has negative correlation with perceived stress.

KEY WORDS: Academic Performance, Body Mass Index, Perceived Stress.

INTRODUCTION.

Pakistan is among the very important South Asian countries by its geographic importance. The countries in the South Asian Association for Regional Cooperation (SAARC) have dearth of awareness regarding physical fitness, body mass index (BMI), perceived stress (PS) and educational significance. SAARC is the latest organization of the South Asian eight countries which include Pakistan, India, Sri Lanka, Bangladesh, Maldives, Afghanistan, Bhutan and Nepal(Majid, 2014).

The countries in the South Asian region progressed by concentrating on the fields of Education and Health. There have been made efforts continuously since the inception of Pakistan to bring improvements in the areas of Education and Health. So, keeping in view of the mentioned scenario

the study would be of great significance for the policy makers and higher education institutes of Pakistan.

The importance of students' physical and mental health is of great value for their academic performance. Institutions are in constant endeavors' for finding out and resolving the issues regarding academic performance.

The study is unique in itself to explore the association of Academic Performance (AP) with Body Mass Index (BMI) and Perceived Stress (PS) in the postgraduate students in Pakistan. Obesity and academic stress are considered implicative factors which impede academic performance of the students at all levels especially postgraduate students.

This investigative research study plans to distinguish and break down variables that influence the nature of under studies scholastic accomplishment of the students. The under studies' research study is an essential job in delivering the best quality students who will end up extraordinary pioneer manpower for the nation in this way in charge of the nation's monetary and social improvement (Ali et al., 2009).

DEVELOPMENT.

Review of literature.

In this period of globalization during the 21st Century, academic performance is considered as an underlying important element for every human to excel from others. It is believed a basic tool in the progress of humancapital and is associated with a man's flourishing and better living (Battle and Lewis, 2002). From the latest couple of years in Pakistan capability rate of students and guidance has improved and most of the institutions has started in Pakistan to upgrading the educational level and convey proficient, forceful and capable individuals; that is why, the expert experience such factors which affect understudy execution, especially the performance of the students.

As of now generally examination of understudy academic performance driving on such issues like gender differentiation, preparation of students by teachers and specifying style, class condition, budgetary factors and family preparing formation. The findings of this study shifts from area to locale and their results differ in urban networks and natural areas. They used GPA to measure understudy execution particularly semester. As some other experts, they measure understudy execution through the eventual outcome of a particular subject or the prior year result (Hijazi and Naqvi, 2006; Hake, 1991; and Tho.1994).

Discoveries of experimental examinations because of gender orientation on stress stay conflicting. For instance, in a study by Misra and Castillo (2004), it was uncovered that people have disparity in their observations and responses. Thus, Jogaratnam and Buchanan (2004) discovered contrasts among male and female subjects to be huge when it went to the time weight measurement of stress. Sulaiman et al. (2009) additionally found in their examination that female understudies have encountered diverse pressure contrasted with male understudies since they will in general be additional passionate and touchy toward what is going on in their environment.

Youdell et al. (2018) suggested that a biosocial understanding of 'school stress' has the capacity to provide important new insight into which systems, settings, pedagogies, teachers and children are most affected by 'education stress'; in what ways; and through the convergence and intra-action of what biological and social processes. Other outstanding examinations that uncover critical contrast among male and female on stress incorporate (Mazumdar et al., 2012; Sani et al., 2012; Sharma, et al., 2011).

In some situations the levels of weight have moreover been found to differentiate for male and female students; for example, Sulaiman et al. (2009) have shown that the rate and sorts of stress among the female students are more than male due to their energetic and sensitive characters and perspective to their condition. Other well-known researchers with this tremendous concluded the same results

(Mazumdar et al., (2012); Kai-Wen (2009); Richlin-Klonskyand Hoe (2003) and Garrett (2001). There is similarly enough support from the results that countless pupils'' encounter pressure (Alzahem et al., 2013; Dahlin et al., 2005). Past examinations equally appear to recommend a conflicting result with respect to the time of training and level of worry among students. Alzahem et al. (2013) and Saipanish (2003) discovered that third-year understudy encounter more worry than some other year. Although, Bataineh (2013) discovered that there were no critical contrasts in scholars' stress at various level studies and specializations in the investigation of 232 training students at King Saud University College of Education.

Clarke et al. (2013) investigated body mass index (BMI) in the individuals from age 19 to age 30 and found that selected school seniors who forecasted that would proceed onward from schools or universities had 34% decline in their odds of being tirelessly overweight into adulthood. Franz and Feresu (2013) studied 77 school developed individuals and found a negative connection between both GPA and with BMI.As a result, the aim of the research study was to examine the factors affecting academic performance of the students.

Objectives of the study.

The objectives of the study were to:

● Investigate the relationship of Academic Performance with BMI of the students.

● Find out the association of Academic Performance with Perceived Stress in the students.

● Make a comparison between male and female students' response regarding Perceived Stress.

● Find out the correlation of academic performance of postgraduate students with BMI and Perceived Stress.

The outcomes of this research study can be utilized for the advancement of agreeable grounds life and avoidance of expected issues by understanding the reasons for the melancholy. Moreover, by

making conditions for expanded academic accomplishment, understudies would be able to design and plan for what's to come.

Research Problem.

Students' health and academic performance are considered as the very vital for their future and professional life. There is a great need for the understanding towards BMI, Perceived stress, Self Esteem and academic performance of university students in our country.

The current study will be an attempt to unveil the factors associated with the academic performance at the university level. The findings of this study will provide insight into the BMI, Perceived stress, Self Esteem and academic performance of the students. Such information will serve as an evaluative feedback to the Higher Education Commission, Ministry of Education and administration of the universities in finding ways to enhance the academic performance of university students in this country as well as other countries.

The examination will be strong to recognize the elements responsible for scholastic execution of college understudies. The acknowledgment of these elements will help expel imperfections in the college understudies' scholastic execution. The result of the investigation will propose certain methods for arrangement producers and executives to review the criteria of scholarly execution and to create technique as how to enhance skillful understudies' wellbeing towards scholastic execution of college understudies at college level.

This study may also help to identify limitations and barriers of academic performance of university students. It may also help educational managers to understand the importance of factors like BMI, perceived stress, self-esteem for better academic performance of the students.

Methodology of Research.

The study was survey type in nature. A sample of 362 students, (80 female and 282 male) from seven public universities of the province of Punjab belonging to the department of Education participated in this study. They were randomly selected and voluntarily participated in answering the questionnaires. The students were introduced to the researcher with the help of their research supervisors.

Participants.

A total of 362 students, (80 females and 282 males) M.Phil Education research students studying at the public universities of Punjab, in the Department of Education, participated in this research study. Distribution of the participants demographic characteristics are presented in Table 1.

Table 1. Demographic characteristic of the participants of the research.

University		N	%
	University of the Punjab (Lahore)	49	13.5%
	University of Education (Lahore)	55	15.2%
	University of Sargodha	40	11.0%
	GC University (Faisalabad)	55	15.2%
	University of Agriculture (Faisalabad)	69	19.1%
	Bahauddin Zakariya University (Multan)	54	14.9%
	The Islamia University of Bahawalpur (Bahawalpur)	40	11.0%
Gender	Male	282	77.9%
	Female	80	22.1%
Residential Place	Urban	177	48.9%
	Rural	185	51.1%
Age	20-30	291	80.4%
	31-40	71	19.6%
	any other	0	0.0%
Marital status	Married	296	81.8%
	Unmarried	63	17.4%
	Divorced	3	0.8%

Semester	First	0	0.0%
	Second	0	0.0%
	Third	362	100.0%
Academic performance (AP) (% marks in M.Phil)	0-49	0	0.0%
	50-59	0	0.0%
	60-69	0	0.0%
	70-79	255	70.4%
	80-100	107	29.6%
BMI Body Mass Index	Underweight (<18.5)	37	10.2%
	Normal (18.6-25)	248	68.5%
	Overweight (25.1-30)	38	10.5%
	Obese (>30)	39	10.8%

The distribution of the demographical characteristics in Table 1 are examined, it is determined that 77.9% of the students participated in the research are male, 22.1% are female, the percentage of students in this study is as13.5% students from University of the Punjab, Lahore 15.2% students from University of Education, Lahore, 11% students from University of Sargodha Sargodha, 15.2% students from GC University, Faisalabad, 19.1% students from University of Agriculture, Faisalabad, 14.9% students from Bahauddin Zakariya University, Multan and 11.0% students from The Islamia University, Bahawalpur participated. Whereas the age range of the participants in this study was 80.4% were 20-30 years and 19.6% were 31-40 years old. 70.4% got 70-79 marks whereas 29.6% students secured 80-100% marks. As for as BMI is concerned 10.2% students were Under weight (<18.5), 68.5% students were Normal (18.6-25) 10.5% students were Overweight (25.1-30) and 10.8% students were Obese (>30).

Instrument and Procedure.

The instrument of the study was adopted from Cohen's Perceived Stress Scale, which consists of 10 items. The instrument was validated and used extensively in many studies and in various class settings.

The questionnaire was then distributed to the respondents. Furthermore, the students' academic performance was measured via their CGPA. The BMI of the students was calculated with the help of BMI formula. Furthermore, to determine if there was a correlation between students' academic performance, BMI and perceived stress, a correlation analysis was conducted.

Data Analysis.

Table 2. Relationship between Body Mass Index * AP Academic performance (% marks in M.Phil).

			70-79	80-100	Total
BMI Body Mass Index	Underweight (<18.5)	N	27	10	37
		Academic performance	10.6%	9.3%	10.2%
	Normal (18.5-25)	N	152	96	248
		Academic performance	59.6%	89.7%	68.5%
	Overweight (25.1-30)	N	37	1	38
		Academic performance	14.5%	0.9%	10.5%
	Obese (>30)	N	39	0	39
		Academic performance	15.3%	0.0%	10.8%
Total		N	255	107	362
		Academic performance	100.0%	100.0%	100.0%

Chi-square value = 39.69** P-value = 0.000

NS = Non-significant (P>0.05); * = Significant (P<0.05); ** = Highly significant (P<0.01)

According to the analysis done in the table 2, we can see that 10.2% students were Under weight (<18.5), 68.5% students were Normal (18.6-25) 10.5% students were Overweight (25.1-30) and 10.8% students were Obese (>30). It was found that the difference between students' BMI was

statistically significant at 95% significance level (Chi-square value = 39.69**, P-value = 0.000, $p<.05$).

Table 3. Comparison between male and female response regarding different Perceived Stress Scales.

Statement	Gender	N	Mean	SD	SE	t-value	Prob.
Perceived Stress Scale (overall)	Male	282	2.58	0.29	0.017	0.44[NS]	0.658
	Female	80	2.56	0.30	0.034		

NS = Non-significant (P>0.05); * = Significant (P<0.05); ** = Highly significant (P<0.01)

SD = Standard deviation; SE = Standard error.

Results related to students' Comparison between male and female response regarding different Perceived Stress Scales are summarized in Table 3. When gender wise comparison regarding Perceived Stress Scale (overall) is examined, (Mean =2.58±2.56), SD= 0.29±0.30, SE= 0.017±0.034, t-value=0.44[NS]   and the Prob=0.658 was found. The results of the analysis show that there is no significant difference between male and female response regarding different Perceived Stress Scales.

Table 4. Comparison between AP (Academic performance, % marks in M.Phil) regarding different Perceived Stress Scales.

Statement	AP	N	Mean	SD	SE	t-value	Prob.
Perceived Stress Scale (overall)	70-79	255	2.62	0.25	0.016	4.39**	0.000
	80-100	107	2.47	0.35	0.034		

NS = Non-significant (P>0.05); * = Significant (P<0.05); ** = Highly significant (P<0.01)

SD = Standard deviation; SE = Standard error.

Results related to students' Comparison between AP (Academic performance, % marks in M.Phil) regarding different Perceived Stress Scales are summarized in Table 4. When marks wise comparison regarding Perceived Stress Scale (overall) is examined, (Mean =2.62±2.47), SD= 0.25±0.35, SE= 0.016±0.034, t-value=4.39**and the Prob=0.000was found. The results of the analysis show that there is significant difference between AP (Academic performance, % marks in M.Phil.) regarding different Perceived Stress Scales.

Table 5. Correlation (relationship) among different characteristics.

	Academic performance	BodyMass Index	Perceived Stress Scale
Academic performance	1.000		
Body Mass Index	-0.255**	1.000	
	0.000		
Perceived Stress Scale	-0.225**	0.226**	1.000
	0.000	0.000	

Upper values indicated Pearson's correlation coefficient; Lower values indicated level of significance at 5% probability. * = Significant (P<0.05); ** = Highly significant (P<0.01).

The outcomes demonstrate a measurably noteworthy inverse relationship was found between seen stress and academic performance (r = 1.000, P = 0.000). The connection between BMI and academic performance was discovered positive associations with one another. We can see that when students are in stress, their academic performance gets down.

Discussion.

The findings revealed that a majority of the postgraduate students in Pakistan due to the academic performance have stress. Whereas there is no correlation between academic performance and the BMI.

A total of 362 students participated in this study, in which 77.9% of the students participated in the research were male, 22.1% and female, the percentage of students in this study was as 13.5% students from University of the Punjab, Lahore 15.2% students from University of Education, Lahore, 11% students from University of Sargodha Sargodha, 15.2% students from GC University, Faisalabad, 19.1% students from University of Agriculture, Faisalabad, 14.9% students from BahauddinZakariya University, Multan and 11.0% students from The Islamia University, Bahawalpur participated. Whereas the age range of the participants in this study was 80.4% were 20-30 years and 19.6% were 31-40 years old. 70.4% got 70-79 marks whereas 29.6% students secured 80-100% marks. As for as BMI is concerned 10.2% students were Under weight (<18.5), 68.5% students were Normal (18.6-25) 10.5% students were Overweight (25.1-30) and 10.8% students were Obese (>30).

This research study was conducted to explore the Association of Academic Performance with BMI and Perceived Stress among the postgraduate students. In this regard a survey study was conducted. The findings of this study show that there is no correlation between the academic performance of the students and the BMI. Significant correlation between Academic Performance and Perceived Stress was observed. There was no significant difference seen between the genders when observed on the basis of perceived stress.

In another examination High seen pressure results in low scholarly execution and viz. Level of seen pressure varies relying upon the courses which the understudies are learning and furthermore there are sexual orientation related contrasts. Female understudies were found to have more prominent levels of pressure and more medical issues (Reney et al., 2015).

While looking at the scholastic execution of the understudy against the moderate, negative and critical affiliation, various factors were considered, and their affiliation was affirmed by attesting that a solid connection interfaces every one of them. It was additionally featured that a high and noteworthy level

of pressure was available and understudy's poor and awful execution was the aftereffect of these huge levels of pressure present as a part of their identities (Nudart, 2013).

Our information is likewise predictable with different investigations, where rudimentary or secondary school youngsters who indicated enhancements in BMI had a factually noteworthy enhancement in scholastic execution (Hollar et al., 2010a, b; Melnyk et al., 2013).

CONCLUSIONS.

It can be concluded that the Academic Performance with BMI have no significant relationship with each other whereas academic performance and Perceived Stress of the postgraduate students had negative relationship with each other. There was hardly any similar research conducted in a Pakistani context where education is relationship of academic performance with BMI and perceived stress have been studied in such a way.

This research shows that through small modifications, even during the research phase of the postgraduate students, it is possible to stimulate students to overcome the stress by motivating to work on regular basis and also control health and maintain body fitness by healthy lifestyle eating and exercising. Based on the results of the research, it may be suggested to prepare settings where students can perform better should be provided by the institutions. So, that lesser imprints of stress can affect the students' academic performance and their health. At the same time research supervisors should also observe the situations at which the research students become stressful.

Recommendations.

From the results of the present study, it is recommended that there is a great need to minimize the academic stress of the postgraduate students regarding their study and academic performance in the public sector universities in Pakistan.

To uplift the standard of education SAARC countries should focus on students' health and education. The SAARC countries may become economically strong by elevating health and education. Workshops and training sessions should be conducted to bring awareness among the students about their BMI. Self-esteem brings positive results of the university students. So, more and more measures should be taken by the universities to enhance the students' self-esteem.

The CGPA of the students can be improved in the public sector universities by increasing self-esteem among them and minimizing their perceived stress. The leaders of the SAARC countries should have regular meetings for the promotion of health and education especially the exchange of students and faculty.

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