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Does Academic Stress Effect Students' Performance?

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Abstract

It has been affirmed by several studies that stress being a common cause to meager academic performance among students. Therefore, for the determination of the affiliation between academic performance of students and stress we have used the data of 110 students of 11 and 12 grade enrolled in the private and public sector colleges in Karachi, Pakistan. This study is descriptive in nature conducted on the relationship of stress and academic performance.

The selection criteria were intermediate as it is a transition stage for students and this level determines their available career choices and it is associated with a lot of academic demands on the students which is most likely to create tension and stress as the student strives to keep pace with the rigorous academic demands. The questionnaire for this study consisted of two sections. Section A was designed to collect data on personal characteristics such as age and gender and we have chosen last obtained GPA/ Grade / percentage as a proxy for academic performance. The other Section B focused on the study objective, the effect of Academic Stress on academic performance of 11 and 12 grade students. Reliability has been ensured by carrying out a preliminary test (pilot study). The data obtained from the study has been analyzed using the Statistical Package for Social Science (SPSS) version 22. This involved data entry into frequency tables, mean and chi-square analysis for inferential statistics.

Results of this study designate that generally students experience stress during examination which is seen as physiological, psychological and behavioral changes and abnormality. This study analyzed that how much academic stress contributes towards this declining trend of results and such a huge difference between the passing percentages of matriculation and intermediate**.**

Keywords: academic performance, examination, stress.

1. Introduction

Our society considers tests and examinations as the most important and prominent tool to evaluate the attainment, skills and capabilities of the students, especially at the higher levels of education. Academic performance is considered as one of the most vital achievements being illustrated through Grade Point Average (GPA). Despite of the modernization and scientific achievement in all fields of life and the efforts drawn for the provision of equal access to education around the world, there is still a huge gap among the observed capabilities and performance in academics across different educational systems prevail around the globe. Several students have been the victim of internal and external factors which affect their academic performance. There can be many factors to diminish students' performance but stress has been gauged as one of the measure factors effecting students' academic performance.

Many students cannot reach at the optimum level of their potential to attain good grades due to stress. It has constantly been observed that examination and tests increase the magnitude of

anxiety and stress which may lead to a situation in which students are unable to exhibit their true naturally given talent. High level of stress confines a student to drop their potential percentile in examination. Stress weakens the functioning human brain, which may put negative impact to learning and remembrance discrepancies. Academic examination stress among students can fluctuate from mild to severe leading to affect learning performance differently at different levels.

Different Socio-economic variables such as gender financial instability, health issues, law and order situation or loss of close family member or friend can be one of the stressors for students to lose concentration. Determination of stress may well be measured to evaluate a person's ability to face challenges of daily life. Academic stress can have positive or negative effect. Stress can stop learning or slow it down, which is called unfavourable stress and it is connected directly to reticence of students' academic performance.

The researchers suggest that good environment of examination hall, behaviour of examiner and paper setting according to the level of students can minimize the stress and anxiety of examination. Moreover, proper organization of questions in a test, sufficient description of the context, clarity in instruction for students may be handy for students to improve academic performance. These internal and external stressors are responsible as to upset students during examination and increase stress and anxiety. Different researches have proved that test and examination stress and anxiety are the major causes for under achievement and low – performance at different levels of education.

Why the identification of stressors is important?

Stress can put negative impact physically and mentally on the people of all ages; particularly it is harmful for the post – secondary students. A national study in Canada ascertained that students experience significant intensities of stress (Adlaf, Demers & Gliksman, 2005; Adlaf, Gilksman, Demers, & Newton-Taylor, 2001).

Students go through striking change learning the concepts of various subjects in details, adjustment with new and mature peers, vagueness to disturbed schedule, security, peer pressure, and little bit less disciplined than the school. Academic pressure, a different living environment, sense of personal security (e.g., self-esteem and comfort), creating new social gathering, financial affairs, balancing life from secondary to post – secondary level can be complex and these changes may become one of the stressors in this transactional phase. Many studies have proved that post – secondary students feel strong interrelation of academics, personal, living style, and financial matters which result in a reduction in academic performance and increase level of stress and anxiety. In several studies post-secondary students themselves have suggested that there is a strong interrelation of academic, personal, lifestyle, and financial issues that can result in increased stress and a reduction in academic performance.

Researchers originate that anxious and stressful student find it stiffer to escape distractions and take more time to turn their attention from one task to the next than their less anxious peers. It often makes learning, reading, remembering and writing difficult affecting academic performance intensely.

High levels of anxiety and stress relate to poor academic performance, and on the other hand lower level of anxiety relates to optimum academic performance. The students should be given space to handle the stress in adequate manner so that they may learn management skills, resilience and dealing with poor social background. Therefore, students must be supported during post – secondary phase to identify stressors and the ways to deal with them appropriately. With the given background the research aimed:

To determine the effect of Academic Stress on academic performance of 11 and 12 grade students

To explore the other factors of fall down of students results.

1.1. OPERATIONAL DEFINITION

1.1.1 Hypotheses

The specification of hypotheses is formulated on the basis of effects of stress on the academic performance of students. It was also the purpose of study to uncover the fact of level of stress of the 11 and 12 grade students.

H1: There is no significant relationship between academic stress and academic performance among 11th and 12th-grade students in Karachi, regardless of gender or type of institution.

H2: There is a significant relationship between academic stress and academic performance among 11^{th} and 12^{th} grade students in Karachi, which may vary by gender and type of institution.

2. Literature Review

It had been observed in several studies that the impact of academic stress also varies across the regions which might suggest that some geographical and socio-economic factors also affect the impact of stress on students' performance. (Misra & Castillo, 2004) compared the academic stressors and their reaction between American and international students. They came up with the conclusion that difference in reaction across the region, status and gender existed further they found a significant negative impact of stress on overall performance of students.

(Vijaya Mani, 2010) assessed the course load, capability of time management, and examination stress. Non – probabilistic convenient sampling was used on seventy respondents of MBA programme. The self – administered sample survey measured stress and significant ratio of stress observed as conclusion which showed positive correlation with students' perception of course load and negative relation to their ability for managing time.

(Sharma , et. al. 2011)assessed effects on vital parameters during examination in final year medical students. The study held at Sri Aurobindo Institute of Medical Sciences, Indore among the MBBS students of academic year 2010 - 11.Change in level of Stress and other vital parameters were observed which may affect academic performance of students. Boys felt less stressed as compared to girls.

(Cornell, Iris G,2011) analyzed that how and to what degree test anxiety and expectancy has the influence on success of student. Purposive nonprobability sample consisted of first semester nursing students (N = 66) enrolled in their first nursing course by a quasi-experimental design, two groups were allocated, an experimental group (n = 31) and a control group (n = 35). The findings suggested that test anxiety and expectancy for success may have affect on academic performance and that test-taking strategies may become the potential benefit to reduce stressors.

(Rana & Mehmood, 2010) explored the association between test anxiety and academic achievement of students at the post graduate level. A sample of 414 students was randomly selected. Pearson correlation, multivariate statistics and regression analyses were made to run for data analysis. Results showed that a cognitive factor (worry) contributes more in test anxiety than affective factors (emotional). It concluded that test anxiety is one of the most vibrant factors which are responsible for students' underachievement and low performance but appropriate training of students in dealing with factors causing test anxiety may be reduced through proper training, counselling and guidelines.

Several studies have shown that dealing with exams is one of the greatest challenges faced by students to attain their desired goals. (C. Ward Struthers, 2000)analyzed the relationship among educational stress, coping, motivation and performance in college students. He evaluated 203 college students, and found out that greater academic stress leads to lower course grades but it can be reduced if teachers remain successful in motivating students and inculcating the proper time management and study plans from the beginning of sessions.

(Asrul Faqih, 2011) studied impact of examination stress on students' academic performance. Factors such as; time management, physical factor, emotional factor, cognitive factor, school factor, peer factor and family factor several factors were examined to judge the level of stress. He used a questionnaire, using five point likert scales as an instrument for collection of data. Significant negative relation between the stress and students' success had been observed in his study.

(Afolayan , 2013) premeditated the relationship between anxiety and academic performance of students in the faculty of Nursing, Niger Delta University, Wilberforce Island, Bayelsa State. A descriptive survey was used for obtaining data from willing respondents. The study revealed that anxiety is a common difficultly challenged by students during examination, and it negatively affects students' performance and outcomes in examination. The study showed that students must have ideal state of health and sharp mind during examination to achieve better academic goals.

(Qurrat et. all, 2011) monitored the relationship of self - reported superficial levels of examination stress on serum intensities of Cortisol and leptin in female students getting ready to appear in university examination. They had analyzed 56 female undergraduate students by assessing hunger levels by using a questionnaire and through collecting blood samples (collected one hour before appearing in the examination). After effects were scrutinized on the base of marks obtained in particular examination. They found an inverted U-shaped relationship between self-reported diverse levels of apparent examination stress and academic performance.

A lot of studies have been done to analyze the effect of test on academic performance (Juan Xiao, 2013) analyzed relationships among academic stress, test anxiety, and test performance and tried to work out on strategies and perceived social support . Data was collected from 450 Chinese schools by conducting four surveys: i) Test Anxiety Inventory ii) Academic Stress Scale iii) Simplified Coping Styles Questionnaire, and iv) A revised Chinese version of the Multi-dimensional Scale of Perceived Social Support. Test anxiety showed a negative relationship to test performance. The study showed that stress and anxiety can reduced if students are properly guided.

(Rnady Denis, 2010) found that examination stress can increase Cortisol levels in comparison to a baseline period. He used academic examination on the memory of both male and female students as regular stressor to explore the influence of severe psychological stress. He tested 56 participants (46 with complete data, 16 males and 30 females) in two sessions; the first test held three weeks earlier to the examination and the second one conducted 15 minutes before examination. He assessed short-term and long-term performance for both genders and observed a decrease in STM and LTM performance for females with a rise in cortisol between at examination compared to baseline testing session. These results show that for females increased in cortisol and they are related with decreased memory performance on the other hand there was almost no effect on the male respondents.

(L. Nicole, 2014) identified stress as the most common disorder to academic performance and results showed that 57.6% learners felt more than average stress. The relationship of examination stress and health behaviour (e.g., physical activity, sleep, and nutrition), were assessed through structural equation modeling.

(Habibah E, et al, 2011) examined the relation of stress and academic achievement of undergraduate students. He obtained data of academic achievement of the 376 undergraduate students Grade Point Average (CGPA) and compared it with stress level for the identification of stress the College Undergraduate Stress Scale (CUSS) was used. After analyzing several factors like age differential, gender, they found that most sources of stress were the results of students' academic stress. The study showed that the level of stress has variation according to faculty and fields of study. The highest stress level was found in the medical students. Whereas; final year students had high level of stress comparatively to first year students.

(Harlina H Siraj et. al, 2012) explored the stress and the stressors(determinants of stress) and determined the association between stress levels and the academic performances in terms of cumulative grade point average (CGPA) of undergraduate medical students. A cross-sectional study conducted on 234 students of 4th year medical students of University Kebangsaan Malaysia (UKM) session 2011-2012. They concluded that several personal and professional development activities in medical schools should have to be organized in order to cope up with the academic stress.

(Khan & Kausar, 2013) explored the effect of academic stress on students' performance. They analyzed through a sample of 150 students from different universities located in Islamabad, Pakistan. A significant relation between academic stresses on student's performance was found. A significant difference between junior and senior students stress level was found using Perceived Stress Scale (PSS).

(Talib & Rehman, 2012) examined the consequence of factor such as perceived stress on the academic performance of the students on a sample of 199 university graduates and undergraduates in Rawalpindi and Islamabad, Pakistan. Correlation coefficient was calculated to define the relationships between perceived stress and academic performance. Perceived stress was found to have significant negative correlation with academic performance of learners. Course load, sleeping problem and social activities were found to be the major source of stress which is affecting academic performance of the students.

3. Conceptual Framework

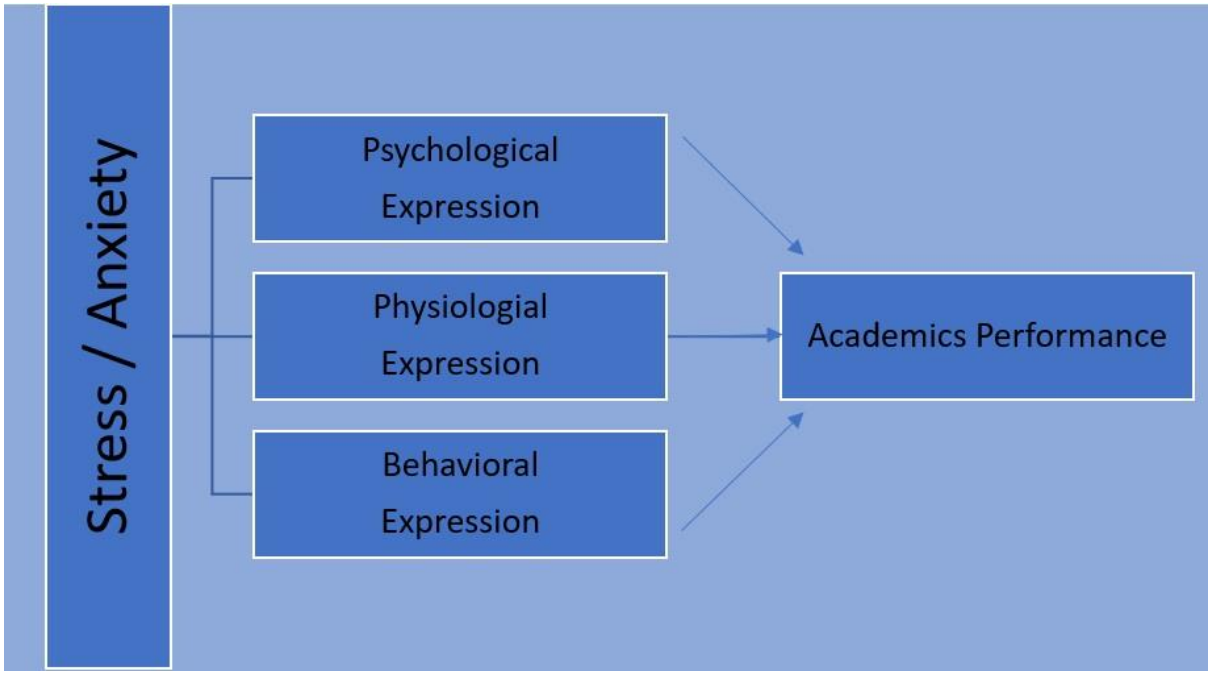

Figure 1: Conceptual framework
Source: Authors' Assertion Model

3. Methodology

Qualities research methodology has been used in the research as it helps to explore and interprets experiences, behaviour, emotions and social context along with measuring them. Phenomenon like; "why" and "how" are focused in detail with this method.

Qualitative method enabled students to express psychological expression of Anxiety, Physiological expression of Anxiety and Behavioral Expression of Anxiety among Students during Examination. The methodology helped the researcher to underpin the context of stress between

private and public schools, societal and parental pressure and lack of support from the stakeholders.

Furthermore, adaptation of quantitative method seems more appropriate in the context of this research to uncover the complex, subjective and emotional characteristics of academic stress and its impact on performance.

3.1 Participants

Participant from different colleges of public and private sector of Karachi, Pakistan studying in 11 and 12 grade took part in the current research. The total number of participants was 200 which later remained to 110 as 90 forms returned unfilled or incomplete. The participants had been from around 25 colleges of Karachi as 50% to 60% forms had been filled in a coaching center (academy in evening) where variety of students come for extra tutoring. It consisted of 34.55% male candidates and 65.45% female candidates.

3.2 Tools

Questionnaire adopted from Afolayan 2013 was used. It had three items: 1) Psychological expression of Anxiety among Students during Examination, 2) Physiological expression of Anxiety among Students during Examination, 3) Behavioral Expression of Anxiety among Students during Examination. Each item had two close ended question categorizing with numerical data 1. Not at all typical of me, 2. Not very typical of me, 3. Somewhat typical of me, 4. Fairly typical of me, and 5. Very much typical of me. The overall reliability of Cronbach's alpha scale was 0.656.

3.3 Socio Demographic Profile

Age, gender and percentage in the last examination of the respondents was used in data sheet to stimulate information on the questionnaires.

3.4 Procedure

All research ethics followed in the currents research as prior permission from the educational institutions concerned was obtained. Participants were given proper liberty and space to fill the questionnaire individually. The respondents of the study were taken in confidence and consent was taken before handing over questionnaires so that the accurate responses of each item and question may frankly be filled.

This study is descriptive in nature conducted on the relationship of stress and academic performance of 110 of 11 and 12 grade students from both public and private sector. The criteria for selection were that intermediate is a transition stage for students and this level determines their available career choices. This level is thus associated with a lot of academic demands on the students which is most likely to create tension and stress as the student strives to keep pace with the rigorous academic demands.

The questionnaire consisted of two sections. Section A was designed to collect data on personal variables of age, gender and last obtained GPA/ Grade / percentage.

The other Section B focused on the study objective. The questionnaire had items on indicators of variables to require the opinion of respondents. The statements formed questionnaire designed responses was tabulated on a five-scale basis of not at all typical of me (1), not very typical of me (2), somewhat typical of me (3), fairly typical of me (4), and very typical of me (5).

Reliability has been ensured by carrying out a preliminary test (pilot study). The data obtained from the study has been analyzed using the Statistical Package for Social Science (SPSS) version 22. This involved data entry into frequency tables, mean and chi-square analysis for inferential statistics.

Econometric model

$$\mathbf{SP} = \boldsymbol{\alpha} + \boldsymbol{\beta_1}\,\mathbf{PSY} + \boldsymbol{\beta_2}\,\mathbf{PHY} + \boldsymbol{\beta_3}\,\mathbf{BEH} + \boldsymbol{\varepsilon}$$

SP = Students performance

Psy = Psychological Expression of stress

Phy = Physiological expression of stress

Beh = Behavioral expression of stress

Here, we have taken Student performance as dependent variable for which we had used CGPA as a proxy (Talib&Rehamn, 2012). Whereas, the independent variables include Psychological, Physiological and Behavioral expression of anxiety (Afolayan, 2013).

Variables	Definition
PHY	Physical changes due to anxiety which includes, getting nervous, sweat profusely fast breathing and stomach problem.
PSY	Psychological changes such as thought of failure, depression, panic and getting anxious.
BEH	Behavioral changes include, avoidance, feeling anxiety, getting sick before exams, time organization and difficulty in examination preparation.

Source: Adapted from (Afolayan, 2013).

The data collected from the study has been analyzed through SPSS 22 and several data analyzing techniques have been used. Reliability analysis, factor analysis, factor loading and regression analysis.

4. Data Analysis

4.1Reliability

Data reliability has been verified by applying statistical tests of reliability. The questionnaire for this study was established on 06 questions including independent variables. Reliability test has been applied in SPSS software version 22 and according to the limitation; the value of Cronbach's Alpha should be more than 0.5 means 50%. The Cronbach alpha value of this study is 0.942 means 94.2%, and shows that the reliability of data has to be accepted on statistical grounds.

Table 4.1

Reliability Statistics

Variable	No. Of Items	Cronbach's Alpha
PHY	2	0.474
PSY	2	0.953
BEH	2	0.624
Overall	6	.656

The first variable "Psychological expression of Anxiety among Students during Examination" has 2 items and the value of alpha of these items resulted as 0.474. In variable number two "Physiological expression of Anxiety among Students during Examination" have 2 items and the alpha's value is measured as 0.953. In third variable "Behavioral Expression of Anxiety among Students during Examination" has also 2 items and their value of alpha is 0.624. The overall reliability of scale is 0.656.

4.2 Factor Analysis:

Table 4.2.1
KMO and Bartlett's Test

Kaiser-Meyer- Olkin Measure of Sampling Adequacy.	0.568
Bartlett's Test of Sphericity Approx. Chi-Square	253.170
Df15	
Sig.	0.000

Source: Author's estimation

As per the requirement for the value of alpha should be more than 0.50, so in the above-mentioned table the reliability of the data can be checked by the value of Cronbach's alpha and these results also show the value of alpha which is greater than 0.50. While for the value of KMO, the result defines that the value of KMO of independent variable is 0.568which shows 56.8% of variance.

Table 4.2.2
Rotated Component Matrix[a]

Variable Description	Notation of variable	Component		
		1	2	3
Thought of doing poorly interferes with my performance	PSY1			.750
Thinking of things unrelated to the actual study material	PSY2			.853
Sweat profusely	PHY2	.973		
Fast breathing	PHY4	.956		
I wish examination did not bother me so much	BEH1		.851	
Feel anxious even when prepared	BEH2		.815	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Independent variables of the data are shown in this table as factor results. Table 4.2.2 rotated component matrix defines the correlation in the variables to the dependent variable. The value "Sweat profusely" and "Fast breathing" have the highest value of correlation shows the highest level of relationship to the dependent variable. It makes group of each variable.

4.3 Regression Analysis
Table 4.3.1: Regression Coefficient (Customer Loyalty)

Variables	Coefficient	t-stats	Sig	V.I.F
(Constant)	**B**	18.851	.000	
PHY	.602	-2.890	.005	1.074
PSY	.467	-.494	.622	1.081
BEH	-2.890	.366	.715	1.145
Adjusted R^2 Square			0.78	
F Stat (prob)			3.001	

a. Dependent Variable: SP

Table 4.3.1 the statistics of all variable both dependent and independent variables with their beta value, co-linearity value, significant value are defined. The value of β shows us the nature of relationship between dependent and independent variables. If the β value is positive means that

there is positive relationship between independent and dependent variable and the negative value of β means there is negative relationship between independent and dependent variable. In above table Psychological expression of Anxiety among Students during Examination, Physiological expression of Anxiety among Students during Examination and Behavioral Expression of Anxiety among Students during Examination B value is used to form regression equation which is:

SP = (**β_1 PSY**) + 0. .602 (**β_2 PHY**) -0.467 (**β_3 BEH**)-2.890.

The t value shown in table 4.3.1 describe the relative importance of each variable in above model. P value shows significance of all variable. In above table values of **SP** = (**β_1 PSY**) + 0. .602 (**β_2 PHY**) -0.467 (**β_3 BEH**)-2.890. Variable**β_1 PSY** is less than 0.05 which means it has significant effect and variables **β_2 PHY** and **β_3 BEH** are greater than 0.05 which means they have insignificant effect on student performance. VIF value shows the coefficient of multiple co-linearity which means that the variables are very much connected with each other. When two variables are highly correlated it means both variable are showing same occurrence and both are showing same information.

If the value of VIF is greater than 10, it means there is multi co-linearity. In above table the VIF values for all variables are less than 10 it means change in value of any variable does not effect on values of other variables. Value of adjusted R square in above table shows competence of model with is 0.078 that shows independent variable (**β_1 PSY + β_2 PHY + β_3 BEH**) can predict 07.80% of variance in dependent variable.

4.4 T – Test

Variables	**Gender**	**Sample Size**	**Levene's Test for Equality of Variances**		t-test for Equality of Means	
			F	**Sig**	t	Df
PSY	Male	38	.004	.947	2.807	108
	Female	72			2.840	77.883
PHY	Male	38	.091	.764	-1.438	108
	Female	72			-1.442	75.966
BEH	Male	38	1.013	.317	-.061	108
	Female	72			-.062	80.461

Source: Author's estimation

INDEPENDENT SAMPLES T TEST

The Independent Samples t Test distinguished the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different. The Independent Samples t Test is a parametric test.

Hypothesis Testing Results

The hypothesis testing likely led to rejecting all null hypotheses, indicating that:

- Academic stress significantly affects academic performance.
- Stress levels vary by institution type and gender.
- Examination-related stress is a key contributor to lower academic outcomes.

5. Conclusion

The existing literature and the results of this study indicate the academic stress significantly affects mental, physical and behavioral well-being of the students and in a long run impacting academic performance of the students.

Stress is a worldwide recognized phenomenon discussed and documented as one of the main causes of psychological uncertainties including depression, low self-confidence and anxiety which may lead to physiological problems like headache, fatigue and insomnia (Misra & McKean, 2000). This study shows that stress is expressed as psychological instabilities, physiological imbalanced and behavioral abnormalities. Stress is a common problem faced by students during examination, and deleteriously affects students' performance and outcome in examination and making a hinder in their ways to attain their desired grades and percentages. Despite of the fact that many respondents did not experience anxiety and stress during examinations, more than 50% of them agreed that they performed better when they are not anxious.

Kaplan et al. (20025) indicated that these issues can affect preparation and performance of students as slowly and gradually they impair the concentration, cognitive development and memory of students.

The need for students to uphold chief state of health and mind during examination was emphasized as this is important for better academic attainments. This study has brought the researchers to suggest some measures for reducing stress among students and improve their overall academic performance. The role of teachers, management, student, family and society is very crucial to achieve the best results Eccles & Roeser's (2009).

5.1 Recommendation

An addition of regular stress management sessions and workshops like; mindfulness, time management skills, coping with the academic pressure should be included which would be helpful to reduce stress and improving academic performance.

Educational institutions should introduce regular stress management workshops, including

Teachers' support and students' engagement should become a part of educational institutions' culture and practices so that trained teachers may identify any signs of stress among students and support them in their academics. Students feel more comfortable in a safe and supportive environment to discuss their personal and academic issues Eccles & Roeser (2009).

Unrealistic expectations from the students of grade 11 and 12 from the parents should not be encouraged instead of that parents need to be educated and understand needs of their children and support them emotionally to reduce academic pressure and enhance academic performance.

On-campus establishment of counselling services and peer-supporting systems throughout the year and during the examination days arbitrate psychological and behavioral stress among students and improving their results.

The administration should design curriculum which sets balanced academics workload and proper gap among different assessment schedules enabling students with ample time for preparation and execution.

Healthy lifestyle habits such as; physical activities, good diet, proper and timely sleep helps students to manage their studies and improve academic performance.

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