

Year Of Study Effects On Stress And Coping Strategies Among Medical And Engineering Students. A Purposive Study in Godavari Districts.

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Abstract: *Objectives: Various studies across the globe have emphasised that students undertaking professional courses, such as medical and engineering studies, are subjected to higher stress. Excessive stress could lead to psychological problems due to lack of stress coping mechanisms. The objective of the current study was to assess stress among students of various medical and engineering colleges and its association with various coping mechanisms. Methods: Present study planned for purposive random sampling study and was conducted in 2020-2021 among students of medical, and engineering colleges from the rural area of Godavari district, Andhra Pradesh, India, using a convenience sampling technique. The calculated total sample size was 1,000. There applied two tools of SASS, Brief coping questionnaire Analysis was done using SPSS of Anova and bivariate analysis based on the objectives and hypothesis. Results: Students' academic stress scale. 223 (22.3%) of the students are having low academic stress, 443 (44.3%) of the students were having below-average academic stress, 306 (30.6%) of the students have average academic stress, and 28 (2.8%) of them have high academic stress. The table shows that the highest numbers of students (44%) have below-average academic stress. Only a few of the students, 3% of them have high academic stress. Conclusion: Students from all the three fields studied were exposed to stress. Academic factors were one of the most important stressors. The introduction of stress management education into the curriculum could prove useful in combatting this problem.*

Keywords: Psychological Stress, Students, Medical, Students, Engineering, Coping mechanisms

Introduction

Stress can be defined as 'any challenge to homeostasis', or to the body's internal sense of balance. It can manifest itself either as eustress or as distress. Eustress, literally translated as 'good stress', is a positive form of stress that motivates an individual to continue working. It is when this stress is no longer tolerable and/or manageable that distress manifests. Distress, or 'bad stress', is the point at which the good stress becomes too much to bear or cope with. Some signals that this change has occurred are when tension begins to build, and there is no longer any fun in the challenge or there seems to be no relief or end in sight. This kind of stress is well-known, and may lead to poor decision-making. The general characteristics of a person in distress are: being over-aroused; tense or unable to relax; touchy, easily upset or irritable; easily startled or fidgety, and demonstrating intolerance of any interruption or delay. Excessive stress results in an increased prevalence of psychological problems like depression, anxiety, substance abuse and suicide ideation. Various studies around the globe have emphasised that students studying in medical courses experience higher stress. However there are few studies on this topic in India, especially on populations in smaller cities. Engineering students take half-yearly examinations, as compared to the annual examinations taken by medical and dental students. Theoretically, the higher frequency of examinations should lead to a higher prevalence of stress among engineering students. However, there are very few studies on the prevalence of stress among engineering students, especially in India. The present study was undertaken in order to assess the prevalence of stress among students of medical, dental and engineering colleges, and the association of stress with various academic, social and health-related factors, in a rural area from the Godavari district of Andhra Pradesh, India. According to Bernstein et al. (2008), any events and circumstances that threaten people's day-to-day functionality and force them to make changes are sources of stress. Stressors are what these causes of stress are termed.

Stressors are those internal or external pressures that disrupt equilibrium and need action to restore balance (Lazarus & Cohen, 1977). Nevertheless, their overall impact varies from person to person in terms of their intensity and length.

For instance, students new to university are more likely to feel stressed if they miss several classes, while an older student may not experience this kind of stress based on their degree of expectation. Sitting in rush hour traffic or taking one's final test is not equal to being attacked by a mad Lion, in which the resultant high arousal may help fight or become fearful. Significant types of stresses such as catastrophic catastrophes, significant life upheavals, and everyday inconveniences are seen as stressors that individuals must adapt to. According to Auerbach and Gramling (1998), a catastrophe is a sudden, frightening, and potentially deadly event that overwhelms an individual's ability to cope. The stress of various individuals, such as those in the professional and vocational fields, has long been regarded as a common issue. For a few decades now, concern has already been raised by the spread of books, papers, articles, and workshops that try to educate people on managing this situation (Keinan & Perlberg 1986). Keinan and Perlberg (1986) suggest that frustration, anxiety, and despair are possible effects of a high degree of stress. McKean et al. (2000) insist that only stressors are incapable of triggering anxiety, sadness, or high-stress levels. However, the stresses people feel do not stem from the

interplay between stressors and the person's perception, but rather the response they have to these stressors. Environmental stress results from environmental pressures that a person cannot cope with (Shirom, 1986).

Researchers have found many academic stresses, including the pressure of too many tasks, academic rivalry with peers, failure, and weak connections with teachers and classmates (Fairbrother & Warn, 2003). An academic stressor is a student's belief that they cannot understand the vast information base in a short time frame (Carveth et al., 1996). Students experience academic stress at regular intervals throughout each semester, with the leading causes of academic stress being exam, grade, and time pressure (Abouserie, 1994). When stress is seen as a bad thing or is in excess, pupils' physical and mental health suffers. To minimize stress among students, it is frequently advisable to adopt better time management, having a good attitude, receiving social support, and becoming involved in leisure activities (Murphy & Archer, 1996). The pressure to do well on exams and tests and the limited time frame puts the academic atmosphere under extreme stress (Erkutlu & Chafra, 2006). This is sure to impact both the internal and external social connections, which harms individual people's lives in terms of dedication to the organization's objectives (Fairbrother & Warn, 2003). Coping in psychology is the act of dealing with a stressor. Although a helpful tactic, in theory, avoidant coping is classified as maladaptive, with people seeking to avoid dealing with stressors. Coping behaviors are those that seek to safeguard the mind from mental harm. According to Kurt Lewin's approach-avoidance conflict theory, avoidant coping is a facet of the conflict. Avoidance coping options, including altering or removing circumstances that caused the issue and altering the way an event is seen to neutralize the problem, are also available.

Review of literature

A N Supe (1998) Majority of medical students perceived stress. Stress was found to be significantly more in Second and Third MBBS students rather than First MBBS. Academic factors were greater perceived cause of stress in medical students. There was no significant difference in the students at different levels of MBBS regarding academic factors and social factors as a stress inducing factors. Physical factors were found to be significantly more in Second and Third MBBS students as compared to First MBBS students. Emotional factors were found to be significantly more in First MBBS students as compared to Second & Third MBBS students. Stress was more common in medical students who have dominant strategy of coping as positive reappraisal, accepting responsibility and painful problem solving. Stress was less common in medical students at Seth G S Medical College who have dominant strategy of coping as escaping and distancing from difficult situation. Family and Friend as perceived social supports were more in Second MBBS than First MBBS medical students. Stress was not found to be significantly more in students having their personality factor contributing to stress as compared to others. This indicates that the stress was not trait oriented but was process oriented. Stress in medical students is common and is process oriented. It is more in second and third year. Academic factors are greater perceived cause of stress in medical students at Seth G S medical college. Emotional factors are found to be significantly more in First MBBS. It is dependent on person's ways of coping and social support.

Vivek B. Waghachavare et al., (2013) Students from all three fields of education are exposed to stress; however, it seems that engineering students are less prone to the development of stress compared to medical and dental students. Further research needs to be done to study the differences in the academic environments of these fields, the role of a half-yearly examination pattern and the impact of these factors on the development of stress. Academic, environmental, social and health problems all play an important role in the development of stress. Academic factors are the most important stressors; hence the need for specific and targeted measures to decrease substantially the burden of stress on the students. Teaching techniques and college environments should be adapted to the needs of the students. The productive utilisation of existing student welfare systems, development of more 'student-friendly' environments and regular periodic extracurricular activities with universal participation can prove to be useful stress-busters. Similarly, students living in hostels were observed to be prone to develop stress; thus, a periodic review of hostels, with feedback from the students, should be conducted and the complaints of students should be promptly addressed. The majority of students were in favour of stress management education being included in the curriculum, and hence steps should be taken for its incorporation. Health is a major concern of students, and therefore the promotion of healthy dietary and lifestyle habits should be encouraged. Additionally, teachers, parents and even students themselves should be aware that undue expectations about academic achievement can lead to stress. Finally, regular study habits and adequate preparation can help students to avoid stress.

Gholamreza Sharifirad et al., (2012) study on Stress among Isfahan medical sciences students concluded that high level of stress necessitates interventions like social and psychological support to improve the student's well-being. A prospective study is needed to study the association of psychological morbidity with sources of stress and coping strategies.

Chandrashekhar.T, et al., (2007) Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal study concluded that The higher level of psychological morbidity warrants need for interventions like social and psychological support to improve the quality of life for these medical students. Student advisors and counselors may train students about stress management. There is also need to bring about academic changes in quality of teaching and evaluation system. A prospective study is necessary to study the association of psychological morbidity with demographic variables, sources of stress and coping strategies.

Nazish Imran et al., (2016) Medical Students' Stress, Psychological Morbidity, and Coping Strategies: a Cross-Sectional Study from Pakistan study found that Out of 1500 students shown The prevalence of psychological morbidity was 23.3%; 52.3% respondents showed evidence of distress was the most common stressors were related to academic concerns. Coping strategies showed variations. The significant psychological morbidity and distress warrants establishing support systems to support students and bringing about

evidence-based changes to teaching and evaluation systems. Adequate counseling facilities should be made available and students encouraged to seek help.

Methodology

The research aims to see the relationship between academic stress and coping technique among engineering and medical students in the Godavari District of Andhra Pradesh.

This study mainly intended to find out student academic stress of Government and Private Medical and Engineering students. These Academic stresses play a vulnerable significance in the life of students. The coping technique received by students differs among Medical and Engineering colleges, which may change students' behaviour. The Researchers must look at the nature of academic stress and the coping methods used to cope with it—undergraduate students studying engineering and medicine. For decades past much research has been completed realm of academic stress to investigate the causes and precipitating factors leading to academic stress.

Main objective of present study was to find out the differences in the students' year of investigation of the levels of academic stress and coping strategies of medical and engineering students.

To examine the differences in the level of academic stress and the methods for managing stress among Engineering and Medical students.

SAMPLE:

The sampling procedure adopted is a purposive sample. Out of the total 1000 students, 440 are male, and 560 are female students. All the 549 students were covered from the medical colleges, 229 students from Government medical colleges, and 320 students from Private Medica colleges. All the 451 students were concealed from the Engineering colleges. 175 students from Government Engineering colleges and 276 students from Private Engineering colleges, East Godavari and West Godavari districts, Andhra Pradesh

There was two Instruments administered in order to data coollection.

Various instruments were used to gather data about students' academic stress and coping mechanisms in this study. Student's Academic Stress Scale (SASS). Brief – COPE was employed for investigation. Kim (1970) has developed a 40 item rating scale to determine where student academic stress comes from. R. Rajendran and K.V.Kaliappan modified the scale to fit better Indian circumstances Student's Academic Stress Scale (1991) consists of 40 items divided into five components. They are personal shortcomings, fear of failure, poor relations with parents and teachers, teacher-student relationships, and inadequate study resources.

Brief – COPE

This 28-item self-report questionnaire was created by Carver (1997) and is used to assess coping strategies in response to a stressful life event. Carver et al. (1989) created the original 60-item COPE scale, of which the Brief-COPE was an abbreviated version. According to Carver (1997), the original Brief-Cope was shown effective using a 168-person community sample, many of whom had been affected by a storm. A study of heart failure patients (Eisenberg et al., 2012) discovered two primary components: The first method is to avoidant coping. To address the issue of copying, approach it this way: Both factors mentioned above include these two subscales, which did not primarily load on either.

The researcher administered the Student Academic Stress Scale and Brief COPE questionnaires. The participants were asked to complete the columns of Gender and place of study etc., related to individual information printed on the questionnaire. The researcher read the instructions loudly, appearing at the beginning of each inventory. Then Participants were asked to put checkmarks next to the items options provided on the right side of each item. There was no time limit for marking the three parts, but usually, 30 minutes were required to finish the questionnaire.

Data Analysis Technique

The data were analysed to examine the significant differences in coping techniques and Academic student stress in Government and private colleges from Engineering and Medical colleges. This study used quantitative data analysis approaches as a powerful technique. To discover whether there was a meaningful mean difference, an independent sample t-test was used concerning year of study. One-way ANOVA (ANOVA) was conducted to see a variance difference in the three or more groups of the continuous variables. One-Way ANOVA are used to examine the differences between Government and private colleges in the field of Engineering and Medical on coping techniques and student academic stress with references of all demographical variables, i.e., Pearson – product-moment correlation is used to study how student academic stress affects relationships. With types of coping techniques finally, the quantitative data was entered, cleared, checked, and analysed using SPSS version V-20.0.

Results and discussion

Table-1: Analysis Of Variance among Year of Study and Domains of Sass

Domains of Sass	Year of Study	N	Mean	Std. Dev.	F
Personal Inadequacy	1 st Year	263	2.0114	.71239	5.007**
	2 nd Year	449	1.8129	.71384	
	3 rd Year	200	1.9600	.67131	

Fear of Failure	4 th Year	88	1.9205	.68181	5.351**
	1 st Year	263	2.0266	.74345	
	2 nd Year	449	1.8486	.75253	
	3 rd Year	200	2.0550	.65123	
	4 th Year	88	2.0000	.75810	
Interpersonal Difficulty	1 st Year	263	1.5437	.57707	7.755**
	2 nd Year	449	1.4900	.61638	
	3 rd Year	200	1.7200	.65861	
	4 th Year	88	1.6932	.64963	
	1 st Year	263	1.7414	.66659	
2 nd Year	449	1.6526	.68433		
3 rd Year	200	1.9050	.71310		
4 th Year	88	1.8636	.74559		
1 st Year	263	1.8175	.63977	1.435	
2 nd Year	449	1.7639	.71803		
3 rd Year	200	1.8800	.68406		
4 th Year	88	1.8409	.65892		
1 st Year	263	2.1559	.74293		7.827**
2 nd Year	449	2.0223	.79307		
3 rd Year	200	2.3200	.80050		
4 th Year	88	2.2727	.78385		

The above table indicates the analysis of variance among years of study and academic stress of students. In personal inadequacy, first-year students showed a higher mean value of 2.01 with an F value of 5.00, highly significant at $p < 0.01$ level. In fear of failure, poor teacher-student rapport, and instructors' interpersonal apprehensions, third-year students had shown higher mean values of 2.05, 1.72, and 1.90 with F scores of 5.35, 7.75, and 7.11, respectively, which are highly significant at $P < 0.0$ level.

Year of study and domains of Brief coping technique

Year of study on various Domains of Brief coping technique i.e. approaching and Avoidant coping technique.

Table-2: Analysis Of Variance among Year of Study and Domains of Brief

	Year of Study	N	Mean	Std. Dev.	F
Approach Coping	1 st Year	263	2.8221	.55721	4.046**
	2 nd Year	449	2.8085	.57773	
	3 rd Year	200	2.9500	.47871	
	4 th Year	88	2.7614	.58711	
Avoidant Coping	1 st Year	263	2.5133	.57194	2.275**
	2 nd Year	449	2.4677	.54236	
	3 rd Year	200	2.5900	.54163	
	4 th Year	88	2.5114	.56719	
Total Brief	1 st Year	263	2.8289	.45104	7.904**
	2 nd Year	449	2.7327	.51740	
	3 rd Year	200	2.9250	.37427	
	4 th Year	88	2.7727	.56176	

** $P < 0.01$, * $P < 0.05$

The above table 27 indicates the analysis of variance among Years of study and coping techniques. Approach coping strategies are using effectively by third-year students. The result showed a higher mean value of 2.95 than other groups, i.e., 1st, 2nd and 4th-year students ($F=4.04^{**}$; $p, 0.01$). Avoiding coping techniques are using effectively by third-year students. The result showed a higher mean value of 2.59 than other groups, i.e., 1st, 2nd and 4th-year students ($F=2.27^{**}$; $p, 0.01$). Which indicates that 3rd-year students use approach and avoidant coping techniques more effectively than other groups like 1st, 2nd, and 4th-year students. Section III

Pearson correlation between domains of coping technique, i.e., Approach coping style and Avoidant coping style and Domains of Student academic stress, or more specifically, a lack of self-confidence, fear of failure, and inability to meet expectations

Distrust between students and teachers, as well as with classmates connection between teachers and students, and lack of classroom resources.

Table 4.28: Indicates Correlation between Sass and Brief

Coping Technique	Approach Coping	Avoidant Coping
Student Academic Stress		
Personal Inadequacy	.203	.399**
Fear of Failure	.148	.421**
Interpersonal Difficulties with parents and teachers	.104	.337**
Teacher pupil relationship	.178	.336**
Inadequate Study Facilities	.166	.339**

**P<0.01, * P<0.05

Above table shows the correlation between the Student Academic stress scale domains and BRIEF coping technique. Student academic stress factors are correlated with an avoidant coping strategy. Factors of Student academic stress scale not associated with approaching coping strategy. The result shows that those with academic stress use avoidant coping techniques like anger, aggression, venting, substance use, and self-blame, etc.

Year of study effect on various Domains of Personal student inadequacy, fear of failure, interpersonal difficulties with instructor and peers, teacher-student interaction, and inadequate study facilities are all factors that may contribute to academic stress.

Findings and conclusions

Private medical college teachers make too many rigorous academic demands, lack communication with teachers, and students have some difficulties with peer groups. Moreover, Government medical students are also facing personal Inadequacy than engineering colleges.

Private Medical College students fear internal exams, practical's, are worried about the high syllabus and parental pressure, etc. These factors make them fear failure. Medical college teachers are highly strict with students. Students are hesitant to inquire of the instructor for a thorough clarification, point of view, examination valuation is rigorous, teachers are not listening to students' ideas, and lack of communication between the teacher and student. Compared with government and private medical colleges, private medical college students have fewer interpersonal relationships with teachers. Private medical college teachers are giving more assignments, tiresome teaching techniques. If the student is depressing, they will not provide any counseling to the students. Medical college teachers have to maintain good relations with students. Private medical college students are not following the proper technique of studying the subject, and they need special classes when they do not understand the topic properly. Present study found that Year of study effects on domains of Academic student stress in personal inadequacy, first-year students showed a higher mean value. In the anxiety of failure, interpersonal problems with instructors. According to this study, most students do not have academic stress because they are good in academics, regularly went to college, followed proper study habits, have good facilities in the college, i.e., lab and library, etc., and good relationships with teachers and teachers parents.

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