

Academic Stress and General Self-efficacy among Engineering Students

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ABSTRACT

It is a non-experimental quantitative study aimed to study the relationship between academic stress and general self-efficacy among engineering students. The data was collected using the standardized scale namely Academic Stress inventory by Ying Ming Lin and Farn Shing Chen from and standardized General Self Efficacy Scale by Ralf Schwarzer and Matthias Jerusalem a sample of engineering students belonging to the age group of 17-25 years (N=120) in which 83 were male participants and 87 were female participants (Female=87 and Male= 83). The sample was collected mainly among Karnataka, Gujarat, and Maharashtra. The study found that there is no significant relationship between academic stress and general self-efficacy at and the correlation was found to be negative.

Keywords: Spirituality, Gratitude, Demographic Variables, Students

Academic Stress

According to Hans Selye, (1946) it is a nonspecific response of the body to a demand. It is our body's reaction to any change, threat or pressure put upon; it is also how humans survived. To be entirely without stress is to be dead! However, not all stress is unpleasant. Selye distinguished between pleasant stress, which he labelled eustress, and unpleasant stress or distress. Some amount of stress is good for people as it helps individuals to get things done on time, but when that limit of stress exceeds and goes beyond it causes distress and also disturbs individuals in their daily life their performance, work-life balance and academics get hindered.

The pressure to ace in exams and get good grades is way too much from the parents that students get highly stressed thinking of the consequences of what will happen if they do not get the desired grades and this at times also impacts their health. (2020)

There are various fields of education today and still the parents force their kids to either take up engineering or be a doctor because as per them these are the only two professions that will gain respect and name in the society. There have been major gender differences too when selecting a field like engineering; if a female is choosing to be an engineer regardless

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of the classification in the same. Nowadays, children are under a lot of stress and the pressure that is building upon them, and the same has led to depression, anxiety and suicidal tendencies which have been on a go for a long time now.

Adolescents are particularly vulnerable to the problems associated with academic stress as transitions occur at an individual and social level (Reddy K. J, Menon K. R, Thattil A. Academic Stress and its Sources among University Students. *Biomed Pharmacol J* 2018;11) Academic stress is defined as the body's response to academic-related demands that exceed adaptive capabilities of students (Wilks SE,2008). Generalized stress is defined as a state of psychological arousal that results when external demands tax or exceed a person's adaptive abilities (Lazarus, 1966; Lazarus and Folkman, 1984). Environmental demands are labelled stressors, and they can take the form of an acute event or an on-going strain (see Pearlin, 1989 in the context of general stress research), while stress refers to the internal perceived emotions and cognitions. (Zajacova,2005, 6). It is estimated that 10–30% of students experience some degree of academic stress during their academic career (Johnson S, 1979). According to the American College Health Association 2006 survey of college students, the one greatest health obstacle to college students' academic performance was academic stress (Mohammad II, 2018).

According to the reports and surveys conducted by various newspapers, every hour on an average 10 students commit suicide due to academic reasons and the rate has been increasing at an alarming rate. From 2015-2019 there has been an increase of 27% in the suicide rate among children going to colleges or institution (Kumar, 2020, 2)

General Self Efficacy

The ability to master a skill can be examined as self-efficacy. Self-efficacy provides a mechanism to explain individual behaviour and may be defined as a person's perceived capability to perform a behaviour (McCoy, 2010, 8). The General Self Efficacy is correlated to emotion, optimism, work satisfaction, and the negative coefficients were found for depression, stress, health complaints, burnout and anxiety (Schwarzer R & Jerusalem M 1995)

Bandura (1997) defines self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Self-efficacy is commonly understood as being domain-specific. But some researchers have also conceptualized a generalized sense of self-efficacy (Schwarzer, 1994; Zhang, 1995). General self-efficacy (GSE) refers to a global confidence in one's coping ability across a wide range of demanding or novel situations. General self-efficacy aims at a broad and stable sense of personal competence to deal effectively with a variety of stressful situations (Scherer et al., 1982; Schwarzer, 1994). Research reported that GSE was related to physical and mental health (Wang, & Liu, 2000) (Tong Y and Song S, 2004) General self-efficacy (GSE) is the belief in one's competence to tackle novel tasks and to cope with adversity in a broad range of stressful or challenging encounters, as opposed to specific self-efficacy, which is constrained to a particular task at hand. (Iuszczynska et al., 2005, 11)

A study shows that a significant relationship was found between general self-efficacy beliefs, life satisfaction and burnout of students at 0.01 and 0.05 levels (General Self-Efficacy beliefs, Life Satisfaction and Burnout of University Students, 2012, 9). Tests showed that adaptive perfectionists scored significantly higher than both mal-adaptive perfectionists and non-perfectionists on General Self-Efficacy and Social Self-Efficacy

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(locicero, 2008, 10) General self-efficacy (GSE) is the belief in one's competence to attempt difficult or novel tasks, and to cope with adversity arising from specific demanding situations (Cross MJ, March LM, Lapsley HM, Byrne E, Brooks PM, 2006, *Eur J Psych Ass* 2002) It makes a difference to how people feel, think and act (Bandura, 1997). The construct of GSE reflects an optimistic self-belief (*Psychol Health* 1994), and refers to a global confidence in coping abilities across a wide range of demanding situations (*Psychol Health* 1994).

REVIEW OF LITERATURE

General Self-Efficacy

A study was conducted by Aleksandra Luszczynska, Urte Scholz and Ralf Schwarzer the General Self Efficacy Scale: Multicultural Validation Studies. It was conducted on Respondents from 3 countries; Germany, Russia and South Korea to check the relation between general self-efficacy and social cognitive variable behaviour-specific self-efficacy, health behaviours, well-being, and coping strategies. Meta-analysis was used and it showed consistent evidence for association between perceived self-efficacy and the other variables used for confirming the validation of the psychometric scale. It appears that GSE is universal construct. Aleksandra Luszczynska, Urte Scholz & Ralf Schwarzer (2005)

Another study was done to measure the health-related quality of life and General Self Efficacy. Regression analysis was used and the results of this study showed a significant relationship between increasing degrees of general self- efficacy and health related quality of life. The purpose of this study was to examine associations between GSE and HRQOL, and associations between HRQOL and socio-demographic characteristics. Knowledge of these associations in healthy school children is currently lacking (Kvarme, L.G., Haraldstad, K., Helseth, S. 2009)

Academic Stress

In their research, Reddy et al. (2018) concluded that there is a stream-wise difference in stress in students. Dealing with stress at a personal, social and institutional level is very important. Remedies such as feedback, yoga, coaching in life skills, mindfulness, meditation, and psychotherapy have been found to be effective for stress management. The trick to deal with it is to recognise the primary cause for stress (Jain & Singhai, 2017-2018)

In his research, Bataineh (2013) assessed the academic stressors faced at university by students. The outcome of the research revealed that there is an unfair academic overload, not enough time to study due to the immense content of the course being covered; high family expectations and low levels of motivation are some of the reasons for the stress. Fear of failure is also the main concern. Among the students from various specializations, no substantial difference was noticed. (Jain & Singhai, 2017-2018, #)

Nandamuri and Gowthami (2011) examined the stress among students of professional studies and argued that with 86 percent, curriculum and instruction criteria were most responsible for stress, followed by 63 percent for problems related to placement, evaluation and team work problems accounted for 41 per cent and 24 per cent. The study further identified different stress-related micro-issues and described twelve sub-issues related to curriculum and instruction. (Jain & Singhai, 2017-2018)

METHODOLOGY

Aim

The aim of the study is to assess the relationship between academic stress and general self-efficacy among engineering students.

Objective

To assess the relationship between Academic Stress and General Self Efficacy among Engineering Students

Hypothesis

H₀: There is no significant relationship between Academic Stress and General Self Efficacy among Engineering Students.

Sampling Technique

The researcher has used a probability sampling technique which comes under non-probability sampling technique. The research is conducted on Engineering Students between the age group of 17-25 and the sample size is N=120 of which 83 were male and 87 were female participants.

Research Design

A non-experimental quantitative research design was employed in the present study to assess the relationship between academic stress and general self -efficacy.

Tools used for the study

Variables	Tool	Developer	Likert Type	Validity/Reliability
Academic Stress	Academic Stress Inventory (2009,13)	Ying Ming Lin & Farn Shing Chen	5-point scale	Alpha value – 0.85-0.92
General Self Efficacy	General Self Efficacy Scale (1995)	Ralf Schwarzer & Matthais Jerusalem	5-point scale	Internal Reliability=.76-.90

RESULTS AND DISCUSSION

Table 1: Descriptive Statistics

	Mean	Std. Deviation	N
ASS	111.7417	21.62068	120
GSE	30.8500	5.20286	120

Table 1 shows the Mean, SD and N for ASS and GSE as per the descriptive statistics done using SPSS. The Mean, SD and N for ASS are 111.7417, 21.62068 and 120 respectively. For GSE Mean is 30.8500, SD is 5.20286 and N is 120 respectively.

Table 2: Correlations between academic stress and general self-efficacy among engineering students.

	N	M	SD	r	p
AS	120	111.741	21.62	-.042	.649
GSE		30.850	5.202		

Note: AS= Academic Stress, GSE= General Self-Efficacy

p value=0.05 hence there is no significant relationship between academic stress and general self-efficacy

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Table-2 shows the correlation between academic stress and general self-efficacy. For academic stress and general self-efficacy, the Pearson correlation value is 1, 2-tailed significance value is .649 and N is 120. Here the significance value is .649 which is more than that.

The purpose of the research was to investigate whether there is a relationship between academic stress and general self-efficacy among engineering students. Results showed there is no significant relationship between academic stress and general self-efficacy among engineering students, whereas the previous studies show that there is a significant relationship between academic stress and academic self-efficacy. In this study a negative correlation was found between academic stress and general self-efficacy which is not significant, which says that academic stress is not positively associated with general self-efficacy.

Findings regarding gender differences in academic stress among engineering students revealed that there is no significant gender difference. Whereas studies have shown that females are usually more prone to academic stress. Findings of this particular study suggests that there is no significant relationship between academic stress and general self-efficacy.

The aim of the study was to assess the relationship between locus academic stress and general self-efficacy, to see the difference between academic stress and general self-efficacy. Results showed there is no significant relationship between academic stress and general self-efficacy among engineering students. The study was conducted on 120 engineering students in which 37 were females and 83 were males. Scales used for the study were Academic Stress Inventory and General Self-Efficacy. The Academic Stress inventory consisted of 7 factors; teacher's stress, results stress, tests stress, studying in group stress, peer stress, time management stress and self-inflicted stress and is a 34-item inventory. The general self-efficacy is a 10-item scale.

Statistical techniques used in the study were normality test and correlational method. Through statistical analysis it was found that the null hypothesis is been accepted that is, there is no significant relationship between academic stress and general self-efficacy.

CONCLUSION

There is no significant relationship between academic stress and general self-efficacy. Negative correlation was found between academic stress and general self-efficacy, which says that academic stress is not associated with general self-efficacy.

Limitations

This study has the following limitations:

- This study covers only the engineering students in India as a sample and hence the results may not hold good for the other parts or segments of the population.
- In this study the engineering students of age group 17-25 are only considered; thus, the findings may not be applicable to individuals of other age groups.
- The sample is drawn from India; thus, the findings may not be true for the individuals out of India
- Gender was not taken into consideration.
- Middle aged and old population was excluded from the study.
- Specific field of engineering was not taken into consideration.

Implications

The total mean scores of Academic stress is high, the participants must make sure they develop skills in order to maintain their stress level and have a better ability to perform well academically. Improvements in lifestyle could be done. There is also a need for the students to participate discussions in order to develop their ability to deal with stress. Further, the parents, family and teachers and academic environment may also play an essential role. The more students and teachers interact they more students perform well academically and further in life. Peers of the students should also encourage them to indulge in activities outside academics as it helps relieve stress.

Suggestions for future research

Whereas some contribution to the existing literature has been made by this study, these findings are only limited to a particular age group and to the engineering students belonging from India. Further research is needed on other samples from other states and countries as well. Studies should also be conducted among other age groups beyond the age group of 17-25 years to further determine whether there is support for the findings of this research or not. In future studies, other measurements can be used to determine the different aspects of academic stress and general self-efficacy, as well as other socio-demographic variables can be compared to determine the significant difference in the academic stress and general self-efficacy. A mixed approach of qualitative and quantitative methods can be used which will help to explore more possibilities in the study.

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Conflict of Interest

The author(s) declared no conflict of interest.

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