

A CROSS-SECTIONAL STUDY OF STRESS AMONG JUNIOR COLLEGE STUDENTS IN A RURAL AREA OF SANGLI DISTRICT OF MAHARASHTRA.

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ABSTRACT

Objectives: Higher secondary school certificate examination is considered to be one of the most important year in an academic career. Excessive Stress during this year could results in increased prevalence of psychological problems like depression and anxiety. This could ultimately have negative impact on the outcome of the achievements. The objective of the current study is, to assess the stress and its association with various academic factors among students of higher secondary school from a rural area in Sangli district of Maharashtra. **Methods:** It is cross-sectional study, conducted among the students of a randomly selected higher secondary school from the rural area in Sangli district of Maharashtra, India. Sampling technique used in the study was stratified random sampling and calculated sample size. The study was conducted during September 2012 to February 2013. A pretested self administered questionnaire was used for the data collection. Analysis was done using percentage, chi-square test. **Results:** Among the 396 students participated in the study, 118 (30.2%) were positive for stress. Stress was observed in 69 (38.1%) female students and 49 (23.3%) male students; the association with gender was statistically significant. Association between stress and stream of education was not observed. Stress was significantly associated with depression and perceived academic stressors. **Conclusion:** Students from all the three fields are exposed to stress. Academic stress is an important factor in development of stress. Introduction of stress management education in the curriculum can prove useful in dealing with the problem.

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Advances in knowledge:

1. Studies, regarding the stress among higher secondary school students from the rural area are very few. The current research addresses the issue.
2. This study shows that along with academic stresses and the burden of expectations can play an important role in development of stress.

Application to patient care:

1. The research highlights the need of incorporation of stress management education in the curriculum, as well as development of mechanism for decreasing stress among students in higher secondary schools.
2. Similarly, it highlights importance of better teaching practices and realization of limitations before expectations to decrease the stress among students.

INTRODUCTION

Stress can be defined as, any change in the body's equilibrium. Any negative stress is also known as distress. Distress occurs when while performing a task or throughout a day to day activity tension builds up, there is no longer any fun in it and there seems to be no relief. This may lead to poor decision making. The general characteristics of the person in distress are, over-aroused, tense, unable to relax, touchy, easily upset, irritable, easily startled, nervy, jumpy, fidgety and intolerant of interruption or delay. Excessive stress results in increased prevalence of psychological problems like depression, anxiety, substance abuse and suicide ideation.^{1,2}

Higher secondary school education is a very important turning point in the academic life of the individual. It is equivalent of GCE- A level of schooling in the countries like Great Britain. At this stage the academic performance of the adolescents plays a crucial role in deciding about next higher stage of education, and

probably career too.³ The expectations of parents, teachers, peers and one's own related to academic achievement and future career can act as a important motivators for an adolescent to study harder. However when there is a disparity in expectations and actual capabilities, considering all the aspects like environment, facilities, quality of guidance, personal determination and hard work; then this motivation can lead to development of stress.¹ Adolescence which spans from age of 10 – 19 years is an stressful period due to physical, psychological, sexually changes and maturity.⁴ The academic factors can exaggerate the already present stress of growth and maturity in adolescents, this may lead to development of chronic health disorders, which could haunt them for lifetime.

There are very few studies regarding the stress among higher secondary school students in India and fewer are concerned to rural area.⁵ Such studies virtually nonexistent

in this locality. Hence the objective of the current study is to, to assess the stress and its association with various academic factors among students of 12th grade of higher secondary school from a rural area in Sangli district of Maharashtra.

METHODS:

It is a cross-sectional study conducted in a rural area of Sangli district from Maharashtra, India. The institutional ethical committee approved the study. The sample size was calculated which was 325. However taking into the consideration the percentage of incomplete questionnaires, it decided to collect 25% extra samples, hence 410 subjects were included in the study. Sampling technique used was stratified random sampling. A college from the study area, was randomly selected and requisite permissions were taken. The students from 12th grade, from all the three fields of education i.e. arts, commerce and science were included in the study. Out of the total available students, number of the randomly selected for participants from each grade was proportional to the ratio of sample size to the number of total available students from the decided grades in the college. On acquisition of written self consent in case of students above 18 years of age and parents consent in case minors, students were asked to complete the questionnaire. If the selected student rejected to consent then another student was randomly selected for participating in the study. Total four visits were made to collect the data and data collection was done by the principal author. The study was conducted during September 2012 to February 2013.

Pretested, self administered questionnaire was used as the study instrument. It was developed with the help of published literature.⁶ A pilot study was conducted to make necessary changes and finalization of the questionnaire. To ensure anonymity there was no mention of student's or institutes name or address on the questionnaire. It was divided in three sections, first section covered socio-demographic factors like age, gender, educational details, area of upbringing, parents' education and parents' occupation. Similarly, questions regarding felt need by the students for inclusion of mental health education in the curriculum and presence of health cell in the college were included in the questionnaire. Second section comprised of "DASS-21" (depression, anxiety and stress scale - short form), a validated screening tool that can be used to identify depression.⁶ The Stress scale, measures a syndrome that is factorially distinct from depression and anxiety, characterised by nervous tension, difficulty relaxing and irritability. It is quite similar to the DSM-IV diagnosis of Generalized Anxiety Disorder (GAD).The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, anhedonia, inertia and lack of interest.

The third section consisted of academic factors, like whether the students is stress due to the factors like extent of syllabus, own performance of study, method of teaching, thinking about examination, thought of future career, higher education choices, parents' expectation, friends' or others expectations, teachers' expectations and their own expectations. While answering the statements a respondent should indicate how much each statement applies to him or her. Each statement had to be answered of five answers based on a scale of intensity of social phobia ranging from "Not at all" to "Extremely". The answers are awarded a score ranging from zero to four. The total score

of 20 and above indicates the presence of academic as stressors.

Analysis was done using percentage and chi-square test. Softwares used for the analysis were Microsoft Excel 2007 and Epi Info 7. Data from the pilot study was not included in the final analysis.

RESULTS:

Out of the total 410, students included in the study, 391 (95.4%) had completed the questionnaires and thus included in the final analysis. Students belonged to age 15 to 19 years, with the mean age of 16.9 years. While 181 (46.3 %) students were female and 210 (53.7 %) were male. Considering distribution according to field of education, 141 (36.1%) were from arts faculty, 156 (39.9%) were from commerce faculty and 94 (24%) were from science faculty.

Out the 391 students stress was observed in 118 (30.2%) students. Mild stress was present in 49 (12.5%) students, moderate stress in 42 (10.7%) students and severe stress in 27 (6.9%) students.

Table 1: Gender distribution of stress

Stress	Gender		Total
	Female	Male	
Absent	112	161	273
	61.9%	76.7%	69.8%
Present	69	49	118
	38.1%	23.3%	30.2%
Total	181	210	391
	100%	100%	100%

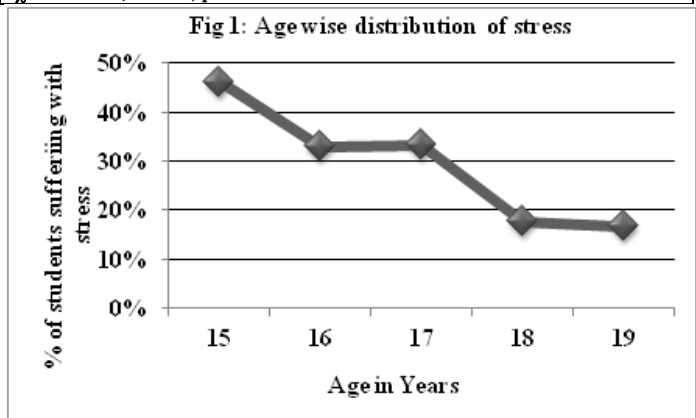
$\chi^2 = 10.0893, d.f. = 1, p = 0.001$

Considering gender distribution of the stress, 69 (38.1%) females students had stress as compared to 49 (23.3%) male students had stress. Gender was statistically associated with stress, with female preponderance. **(Table 1)**

Table 2: Age distribution of stress

Stress	Age (in years)					Total
	15	16	17	18	19	
Absent	7	75	120	56	15	273
	53.8%	67%	66.7%	82.4%	83.3%	69.8%
Present	6	37	60	12	3	118
	46.2%	33%	33.3%	17.6%	16.7%	30.2%
Total	13	112	180	68	18	391
	100%	100%	100%	100%	100%	100%

$\chi^2 = 9.4861, d.f. = 4, p = 0.05$



Considering the distribution of stress according age, there was a statistically significant association between the two variables **(Table 2)**. Higher stress was observed in younger students as compared to the older students. Thus stress had reverse trend with age. **(Fig 1)**

Table 3: Distribution of stress according to the field of education

Stress	Stream			Total
	Arts	Commerce	Science	
Absent	95	115	63	273
	67.4%	73.7%	67%	69.8%
Present	46	41	31	118
	32.6%	26.3%	33%	30.2%
Total	141	156	94	391
	100%	100%	100%	100%

$\chi^2 = 1.874, d.f. = 1, p = 0.392$

Considering the distribution of stress according to the field of education, 31 (33%) science students, 46 (32.6%) commerce student and 41 (26.3%) arts students had stress. However statistically significant association was not present in field of education and stress (Table 3). Stress was not associated with socioeconomic status.

Table 4: Association of stress with depression

Stress	Depression		Total
	Absent	Present	
Absent	219	54	273
	80.2%	19.8%	100%
Present	37	81	118
	31.4%	68.6%	100%
Total	256	135	391
	65%	35%	100%

$\chi^2 = 87.021, d.f. = 1, p = 0.000$

Depression was present in 135 (35%) students. Stress was statistically associated with depression, with comorbidity observed 81 (68.6%) out of 118 students who had stress. (Table 4)

Anxiety was present in 126 (32.2%) students. Out the students who had stress, 71 (60.2%) had anxiety; their association was statistically significant.

On considering the academic factors 152 (38.9%) students had a score of ≥ 20 , i.e. they perceived academic stress. Association of stress with the perceived academic stress was statistically significant. (Table 5)

Table 5: Assocfation of stress with perceived academic stress

Stress	Perceived academic stress		Total
	Absent	Present	
Absent	213	60	273
	78%	22%	100%
Present	26	92	118
	31.4%	68.6%	100%
Total	239	152	391
	61.1%	38.9%	100%

$\chi^2 = 106.3420, d.f. = 1, p = 0.000$

On question of introduction of health cell in the school and inclusion of stress management education in the curriculum, the positive response was given by 278 (71.1%) and 305 (78%) students respectively.

DISCUSSION

In the current study 30.2% students had stress. Moderate to severe stress was present in 17.6% students. Stress was associated with gender with female students showing greater tendency to develop stress. Similarly it was also observed that the students with lower age were more prone to develop stress as compared with students with higher age. Stress was present in the students studying in all the three fields of education. Similarly a strong association of stress with depression and anxiety was observed. The important finding of the current study was that academic stressors like syllabus, teaching process, facilities, and expectation had major role in the development of stress.

Yusoff et. al,(2011) observed that the prevalence of distressed adolescents in Kota Bharu, Malaysia was 32.8%.⁷ Sahoo and Kher (2010) observed that stress was present among 20% college students from Ranchi.⁸ A study by Al-

Gelban (2007) in Saudi Arabia among male adolescents observed the prevalence of stress to be 35.5%.⁹ When considering prevalence of stress among Turkish students, Bayram and Bilgel (2008) observed that 27% of them were having moderate to severe stress ⁴. Observed stress in current study was 30.2% students while moderate to severe stress was observed in 17.6% students. Results obtained in current study are in accordance with study of Yusoff et al, but higher than study of Sahoo et al. But the Sahoo et al., had studied stress among only male students. In the current study 23.3% male students had stress. Hence the results are similar. However, according to Al-Gelban study higher percentage of Saudi male students had stress. Similarly based on the findings of Bayram et al, higher percentage of Turkish students had moderate to severe stress. The difference observed when compared to these two studies and the current study could be attributed to geographical and cultural variations in the study population.

CONCLUSION

Students from all the three streams are exposed to stress. Females and younger students are particularly vulnerable. The academic and expectation pressure is one the major precursor of the stress. Stress can play a vital role in the development of depression and anxiety.

Academic problems play an important role in the development of stress. Hence, measures targeted specifically towards academic factors, can substantially decrease the stress among the students. Teaching technique should be more flexible to the needs of the students. Productive utilization of existing student welfare systems, development of more "Student-Friendly" environment and regular periodic extra-curricular activities with universal participation can prove useful stress busters. Steps should be taken to incorporate Stress Management Education in the curriculum. Health is major concern and deviation from it adds to stress, so incorporation of healthy dietary and lifestyle habits should be encouraged. Teachers, parents and even students should rethink about the undue expectations. The regular studies and adequate preparation helps a lot in avoiding stress.

LIMITATIONS OF THE STUDY

This is a self administered questionnaire based study, hence reporting bias cannot be totally eliminated. There is a lack of geographical coverage since the study is conducted in a single higher secondary school. Many confounders like current emotional state, personality etc. may be present. Similarly, difference in stress during pre-exam, exam and post-exam period is not considered.

CONFLICT OF INTEREST

All the authors declare that there is no conflict of interest. The research was self funded by the authors.

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