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ROLE OF STRESS AND SELF-ESTEEM IN ACADEMIC PERFORMANCE OF MEDICAL STUDENTS

Physiology

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ABSTRACT

Background: Deterioration in performance of students in medical college is raising concern. One of the reasons is compromise in mental state which is due to stress and it is one of the concerns in present world which needs urgent attention. Many studies have reflected that emotional problems are one of the major concerns in higher education which leads to psychological abnormalities like anxiety and depression. Thus early identification and intervention for students having psychological distress would prevent the long term failure in the educational task desired from them at the end of course.

Objectives: To assess psychological state among undergraduate medical students measured by general health questionnaire and Rosenberg scale of self-esteem and to correlate their academic performance with the present psychological status.

Methods: A descriptive cross-sectional study was conducted among MBBS students across different phases studying in medical college in central Kerala. The questionnaire included general information and specific information like regarding stay in hostel, hours of study per day, recreational activity, family matters and financial situation. Psychological wellbeing was assessed using General Health Questionnaire–12. A score of ≥15 was considered as an indicator of psychological stressful situation. Self-esteem wellbeing was assessed by Rosenberg Self-esteem Scale according to which any score <20 was considered as low self-esteem. The summative assessment (University examination) marks pattern in theory, viva and practical's were considered as measure for academic performance.

Results: 338 students from different phases belonging to different year of admission from 2012 to 2015 participated in the study. The mean age group of sample was 20.96±1.49 years among them 73% were female students. In 118 students General Health Questionnaire score was less than 15 but the difference in sample across the group was not statistically significant, similarly 207 students had score less than 20 in Rosenberg self-esteem scale where the difference in the score among the group was not statistically significant. Only in 2012 batch students, a statistically significant negative correlation was observed between the mean scores of general health questionnaire with academic performance (Mean GHQ score 16.42, r value -0.2, p value 0.018) and a statistically significant positive correlation was observed between low self-esteem with academic performance (Mean RSE score 18.41, r value 0.23, p value 0.03). In all other batch although GHQ score did not correlate with academic performance but self-esteem score was statistically significant in batch of 2014.

Conclusion: Our study supports that as stress increases, the academic performance decreases hence GHQ and RSE should be used among students with poor academic performance to rule out psychological distress and low self-confidence. Every college should be provided a cell to monitor the psychological status of students periodically and intervene if required.

KEYWORDS

Psychological stress, General Health Questionnaire, Rosenberg Self-esteem scale

INTRODUCTION:

Deterioration in performance of students in medical college is raising concern. One of the reason is due to compromise in mental state mainly due to stress is one of the concerns in present world which needs urgent attention. Majority of students entering the medical profession are with high marks in premedical entrance and 12th standard. But the high grades are not reflected during the course in pre-clinical or para clinical phase of the course which may be due to various reasons. One of the factors which play an important role during the course of study is psychological well being, and compromise in mental state due to stress which may be a confounding factor in deterioration of performance.

The adolescence period is associated with several specific physical and social changes which have an impact on psychological development. This period has been described as stressful phase of development[1]. Various studies demonstrate the important roles of some psychological factors particularly stress anxiety and depressive mood on adolescents' health risk behaviour[2].

Developing countries are in great demand of professional education hence higher education is one of the modes to achieve successful future and support the needs of developing nation. This will leads to high expectations among students. This has created atmosphere of stress among the young learners which is very often reflected in young students prone to experience physical, emotional or psychological issues. Many studies have reflected that emotional problems are one of the major concerns in higher education which leads to psychological abnormalities like anxiety and depression. As a result learners in long term fail to achieve their educational task desired to be achieved at the end of course[3].

Psychological wellbeing with self-esteem measured in the present study is mainly to find the mental stability of learner. A sound mental health promotes active learning and acquiring new skills. The adolescence period is crucial juncture where transition takes place both physically and mentally to a state of adulthood. Learners at this age may be vulnerable with the high task prescribed for them in coming days. Thus if we are able to identify their psychological state and plan early intervention if found with psychological distress will help in decreasing increasing incidence of psychological problems during adolescence.

The present study is a small step in the direction of providing quality health care to society at large by having quality health delivered to students in medical college. This study is planned to determine psychological state measured in term by general health questionnaire and self-esteem by Rosenberg scale of self-esteem and correlate their academic performance with the present psychological status. Though the study is not planned for any intervention if required on identification and outcome of study will be planned.

Research Question: Do stress and self-esteem affect the academic performance of medical students?

Objectives:

- To assess psychological stress and self-esteem in medical students
- To correlate psychological stress to academic performance in students

Review of Literature:

Nor Sheereen Zulkefly et al[3]. assessed the psychological health of students at a local university using General Health Questionnaire

(GHQ-12). 386 students (female=177, male=209) were selected using multistage cluster sampling. A self-administered questionnaire was used to collect the data required. Results showed that slightly more than half (52.9%) of the respondents scored low on the GHQ-12, and a substantial proportion (47.1%) of them scored high, indicating an unhealthy psychological state. The authors were of opine that using GHQ-12 they could reveal unhealthy population of students i.e psychological distress and concluded that GHQ-12 is reliable and after factor analysis they supported the concept of three structures namely psychological distress, cognitive disorder, social and emotional dysfunction.

Maria Cristina Pereira Lima et al[4] estimated the prevalence of common mental disorders among medical students and their risk factors in a cross-sectional study with 551 students of a medical school in Botucatu, SP, Brazil. The prevalence of common mental disorders was high among medical students, associating the variables related to network of support. The emotionally tense experience as contact with severely ill patients, formation of groups, among others, lived in the last years of the course are potentially strong stressors, especially for subjects with a support network considered deficient. It is suggested that educational institutions should be aware of that and make interventions aimed at treating and caring about the plight of students.

Ananya Mandal et al[5]. Studied one hundred and fifty students in the descriptive observational pattern. Fifty five (36.66%) students performed poorly. Male gender were inability to clear the previous professional examination at the first attempt, difficulty in understanding medium of instruction, self- assessed depression, sleep disorders and perceived parental and peer pressure and dissatisfaction with career choice were significantly linked with poor performance. Socioeconomic status and regularity in class were not linked to academic performance. The important as well as correctable factors contributing to poor performance in the study population was psychological. Therefore, more focus on the emotional and psychological needs of medical students is warranted to ensure better academic performance and, thereafter, better clinical performance was their final conclusion.

Supe A N et al[6]. Majority of medical students (175/238, 73%) perceived stress. Stress was found to be significantly more in second and third MBBS students rather than first MBBS levels ($p < 0.05$). Stress was not found to differ significantly on the basis of sex, stay at hostel, mode of travel, time spent in travel every day, medium of study in school, place of school education. Stress was found to be significantly more in students having more than 95% of marks at 12th Standard as compared to others. Academic factors were greater perceived cause of stress in medical students. 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 planned problem solving.

MATERIALS AND METHODS:

The study planned as descriptive cross-sectional was carried out in Pushpagiri Institute of Medical Sciences and Research Centre, Thiruvalla after obtaining human ethical committee clearance. MBBS students from first year to final year were recruited by simple random sampling during the period of June-2016 to July-2016. 338 students from various phases gave their consent for participation in the study, and provided their response for questionnaire given to them.

The questionnaire includes general information regarding name, age, sex, place, medium of school up to tenth standard and 12th standard marks, mode of entry into the course (merit, management or others) and specific information like regarding stay in hostel, hours of study per day, recreational activity, family matters and financial situation.

General Health Questionnaire (GHQ): This questionnaire has been widely used as a screening instrument for the detection of the possible presence for psychiatric morbidity. Goldberg developed the 60 item original version of the GHQ in 1972. Now the 30, 28 and 12 item version is in vogue. The 12 item version which is a very popular screening measure in primary care and community settings is used in the current study. Test- retest reliability comes out to be 0.86 and split-half reliability of the GHQ-12 is 0.83[7,8]. A score of ≥15 will be considered as an indicator of psychological stressful situation

Rosenberg's Self-Esteem Scale (SES): This scale developed by Rosenberg [42] consists of 10 self-report items dealing with a person's general belief about himself. Each item is answered on a four-point Likert scale – from strongly agree (3) to strongly disagree (0). Five items are reverse scored – from strongly disagree (3) to strongly agree (0). This scale was originally validated on a large sample of high school students. Test–retest correlations are typically in the range of 0.82 to 0.88 and Cronbach's alpha for various samples are in the range of 0.77 to 0.88. The scale measuring positive wellbeing will be considered when score is ≥20 and any score <20 will be considered as low self esteem[9].

The standard questionnaire of psychological and self-esteem which is in English was distributed among students; prior to answering the questionnaire they were briefed about the questionnaire and explained about the each response. The students were given sufficient time to answer the questionnaire without any intervention. The academic performance of the student was obtained from students section of Principal office where only the summative assessment (University examination) marks pattern in theory, viva and practical's were obtained and tabulated.

Data Analysis:

Standard tests for descriptive statistics were applied, which will be the use of percentage and ratios. Association between poor performance and other parameters were made using correlation coefficient. *P* value of less than 0.05 was considered statistically significant.

RESULTS:

338 students from different phases belonging to different year of admission from 2012 to 2015 participated in the study. The mean age group of sample was 20.96±1.49 years among them 73% were female and 27% were male in the sample.

Table No.1 Distribution Of Sample According To Different Professional Level And General Health Questionnaire Score (GHQ)

Batch	(GHQ Score ≥ 15)	(GHQ Score < 15)	Total
2012	53	27	80
2013	56	25	81
2014	54	24	78
2015	57	42	99
Total	220	118	338
	Chi Square=3.68	df=3	P=0.2982

General Health Questionnaire score as observed in Table No.1 depicted 118 students with score less than 15 but the difference in sample across the group was not statistically significant, similarly 207 students had score less than 20 in Rosenberg self-esteem scale where the difference in the score among the group was not statistically significant as observed in Table No.2.

Table No.2 Distribution Of Sample According To Different Professional Level And Rosenberg Self-esteem Score (RSE)

Batch	(RSE Score ≥ 20)	(RSE Score < 20)	Total
2012	30	50	80
2013	26	55	81
2014	28	50	78
2015	47	52	99
Total	131	207	338
	Chi Square=5	df=3	P=0.1718

Table No.3 Distribution Of Sample According To Gender And Scores Of GHQ And RSE

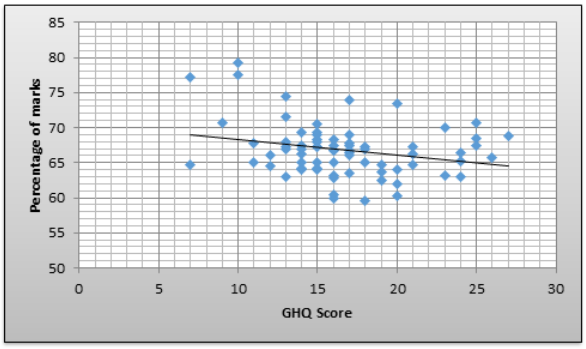
	(GHQ Score ≥ 15)	(GHQ Score < 15)	(RSE Score ≥ 20)	(RSE Score < 20)
Female	162	85	95	152
Male	58	33	36	55
Total	220	118	131	207
	Chi Square=0.121: df=1: P=0.75		Chi Square=0.034: df=1: P=0.85	

Correlation of mean scores of general health questionnaire with academic performance was statistically significant in 2012 batch with negative correlation and self-esteem was positively correlated statistically significant as shown in Table No.4 and the same depicted in Graph 1 & 2. In other batch GHQ score did not correlate with academic performance but self-esteem score was statistically

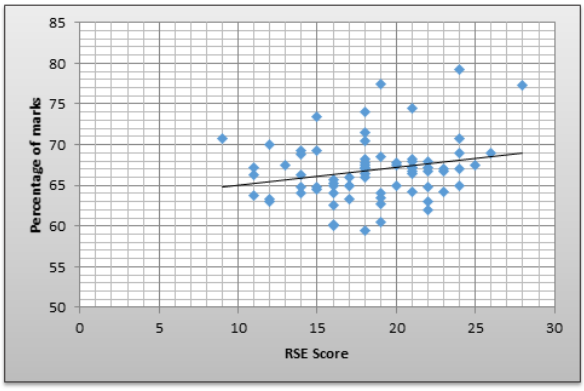
significant in batch of 2014 and in 2013 and 2015 batch no correlation was observed.

Table No.4 Correlation Of Mean Scores Of GHQ And RSE To Academic Performance Of Students

Batch	Mean GHQ score	"r" value	"p" value	Mean RSE Score	"r" value	"p" value
2012	16.42	-0.2	0.018*	18.41	0.23	0.03*
2013	16.87	-0.12	0.26	18.37	0.01	0.9
2014	16.9	0.14	0.21	18.28	0.23	0.04*
2015	15.86	-0.16	0.09	18.82	0.05	0.6
*-Statistically significant (P<0.05)						



Graph No.1 Correlation Of GHQ Score To Academic Performance In Batch 2012



Graph No.2 Correlation Of RSE Score To Academic Performance In Batch 2012

DISCUSSION:

Psychological stress and lack of motivation has been reported commonly among medical students. Studies have demonstrated at least one fourth of the students admitted in medical college suffer from depression in their first two years of study, among them females are reported to be on higher side. Even though depression among students of medical college is similar to that among other people of similar age group, but the prevalence among medical colleges are increasing [10,11,12]. Till date there is no evidence provided by literature survey correlating psychological distress in the early phase of medical education which may reflect later in the course which involves patient care may be affected [12]. Many studies have suggested that students tend to go for psychiatric evaluation only when their academic parameters are compromised to a greater extent.

Hence the present study is a small step in the direction to determine the general health related to psychological state and self-esteem of students in medical college. 338 students participated in the questionnaire survey along with their academic performance was recorded.

Our study showed 118 students less than score of 15 indicating 35% of students participated in study were prone for psychological distress and scores in Rosenberg self-esteem were also similar showing 39% of students had score less than 20 suggesting low self-confidence.

Our results are similar to prevalence reported by Alem A et al[13] as 32% in medical students. But higher when compared to prevalence reported by Sreeramareddy et al[14] as 20.9%, Pitt's et al[15] and Eller T et al[16] as 21% in their study group. But in contrast to our observation SM Ko et al[17] reported a prevalence of 57% in their study. This difference in prevalence may be multi-factorial with their social environment; study style and mode of delivery vary from different geographical locations. In our study male students had prevalence of prone to psychological distress about 36% compared to females which was 34% and decreased self-confidence was also greater in males 39% compared to females 38%, our results are similar to results expressed by Shaik et al[18] and Bramnes et al[19] as males are prone for nervous breakdown, however many studies have reported increased prevalence of psychological distress among female students.

The correlation of psychological wellbeing score along with self-esteem score with academic performance is an attempt to identify the level of stress in each phase of medical curriculum. In our study we found significant correlation among the final year students stress levels with academic performance. We observed negative correlation among stress to academic performance, showing decreased academic performance with increased stress levels. Similarly the students were also positively correlated with low self-esteem as their academic performance was found to be detoriating. Though we did not find statistical significant correlation among other phase students between academic parameters and stress the trends were inverse relations and self-esteem positive relation to academic performance.

The present study needs to be carried out in various colleges to generalize the results and also requires further analysis to find a definite cause for the decrease in performance of students early in the phase and intervene to prevent further progression of psychological distress.

CONCLUSION:

General Health Questtionnaire-12 and Rosenberg self-esteem scale were able to determine psychological wellbeing and self confidence among medical college students. Hence these tools can be used more commonly to identify and screen the students to identify psychological distress early during the onset. Our study also supports that as stress increases their academic performance decreases hence these tools of GHQ and RSE can be used for poor academic performed students to rule out psychological distress and low self confidence.

Limitations:

Larger sample involving a greater number of students from various colleges would provide better understanding. We did not consider intelligence of students which is an important parameter which affects academic performance. If qualitative analysis was planned in present methodology the result obtained would specify the causative agent for stress among students.

Implications:

Every college should be provided a cell to monitor the psychological status of students periodically and intervene if required. Students if found on verge of psychological stress, have to be submitted for counseling which will help in decreasing the psychological problems in adolescence.

REFERENCES:

1. Benjet, C. & Hernandez-Guzman, L. Gender differences in psychological well-being of Mexican early adolescents. *Adolescence*, 2001; 36:47-65.
2. Callas, P.W., Flynn, B.S. & Worden, J.K. Potentially modifiable psychosocial factors associated with alcoholuse during early adolescence. *Addictive behaviors*, 2004; 29: 1503 – 1515
3. Nor Sheereen Zulkefly. Using the 12-item General Health Questionnaire (GHQ-12) to assess the Psychological Health of Malaysian College Students. *Global Journal of Health Science*. 2010;2(1): 73-80
4. Maria Cristina Pereira Lima; Mariana Souza Domingues; Ana Teresa de Abreu Ramos Cerqueira. Prevalence and risk factors for common mental disorders among medical students. *Revista de Saúde Pública*. 2006, vol.40, n.6, pp.1035-1041
5. Ananya Mandal, Arijit Ghosh, Gairik Sengupta, Tapas Bera, Nina Das, and Subir Mukherjee. Factors Affecting the Performance of Undergraduate Medical Students: A Perspective. *Indian J Community Med*. 201 2 37(2): 1 26–1 29
6. Supe A N. A study of stress in medical students at Seth G.S. Medical College. *J Postgrad Med* 1998;44:1-6.
7. Goldberg, D. The General Health Questionnaire. 1972. In: McDowell, I. and Newell, C. Measuring Health. New York: Oxford University Press. 1996.
8. Goldberg, P. & Williams, P. A User's Guide to the General Health Questionnaire. Windsor: NFERNELSON. 1988.
9. Rosenberg, M. Society and the adolescent self-image. New Jersey: Princeton University Press. 1965
10. Givens JL, Tjia J. Depressed medical students' use of mental health services and barriers to use. *Acad Med*. 2002;77:918–21
11. Rosal MC, Ockene IS, Ockene JK, Barrett SV, Ma Y, Hebert JR. A longitudinal study of students' depression at one medical school. *Acad Med*. 1997;72:542–6

12. Hirata FC, Lima MC, de Bruin VM, Nóbrega PR, Wenceslau GP, de Bruin PF. Depression in medical school: The influence of morningness - eveningness. *Chronobiol Int*. 2007;24:939–46
13. Alem A, Araya M, Melaku Z et al. Mental distress in medical students of Addis Ababa University. *Ethiop Med J* 2005:43(3):159-66
14. Sreeramareddy CT, Shankar PR, Binu VS et al. Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. *BMC Med Educ*. 2007 Aug 2:7:26
15. Pitts Fn Jr, Winoker G, Stewart MA. Psychiatric syndromes, anxiety symptoms and response to stress in medical students. *Am J Psychiatry* 1961:118:333-340
16. Eller T, Aluoja A, Vasar V et al. Symptoms of anxiety and depression in Estonian medical students with sleep problems. *Depression Anxiety* 2006;23(4):250-6
17. SM Ko, EH Kua, CSL Fones. Stress and the Undergraduates: *Singapore Med J* 1999;40 (10).
18. Shaikh BT, Kahloon A, Kazmi m et al. Educ Health (Abingdon). 2004;17(3):346-53
19. Bramness JG, Fixdal TC, Vaglum P. Effect of medical school stress on the mental health of medical students in early and late clinical curriculum. *Acta Psychiatr Scand* 1991: 84(4): 340-5