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Original Research

Study of perceived stress and emotional intelligence among 1st year medical undergraduates in India

Aditya Gupta, G.D. Koolwal, Sanjay Gehlot

Dr. Sampurnanand Medical College (Dr.S.N.M.C) Jodhpur, INDIA

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Corresponding Author:
Aditya Gupta,
Dr.S.N.M.C Jodhpur, INDIA
adisuperster@gmail.com

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ABSTRACT

Recently stress during medical training is increasingly being reported in published literature especially in 1st year students. The potential negative effects of emotional distress on medical students include impairment of functioning in class-room, stress-induced disorders and deteriorating performance. So the present study aims to assess the level of perceived stress and emotional intelligence, and to find a relation between Emotional Intelligence and level of perceived stress in 1st year medical undergraduates. The present study was undertaken at Dr. S.N.M.C Jodhpur, affiliated to Rajasthan University of Health Sciences (RUHS), Jaipur, taking 1st year medical undergraduates as study sample. The tools used for this study were Perceived Stress Scale-10 (PSS-10) and Emotional intelligence scale (E. I. S.) by Hyde and Pethe. Data was obtained from 122 out of 150 students, who voluntarily completed all the questionnaires. No significant differences were found between males and females for the Emotional Intelligence and Perceived Stress measure. A negative correlation was found between emotional intelligence and perceived stress. The present study shows that as the emotional intelligence increases, the level of perceived stress decreases. Future research should explore other factors that predispose students' experiences of stress and enable their management of it.

INTRODUCTION

The concept of stress has been widely discussed in relation to medical students and reports of high levels of perceived stress amongst these groups are common [1,2]. All students experience the demands of course work, a new environment and new people, and for those living away from home for the first time learning to manage financially, emotionally and socially by themselves. Stress in medical students has been associated with increased levels of depression [3,4], use of drugs and alcohol and increased anxiety [5] and attrition [6,7]. The expense involved in training healthcare professionals represents a considerable investment and attrition has a significant financial impact as well as being unfortunate for the student involved. It would therefore seem important to identify those students who may experience their course as more stressful than their peers in order to target them early for help and support.

Several predictors of stress in medical students have been identified in previous literature. One such factor, emotional intelligence (EI), is increasingly made reference to in medicine, nursing and other healthcare disciplines where it is suggested it is important for professional mental health as well as effective practice [8,9,10]. The concept of EI was introduced over a decade ago by Salovey and Mayer[11] and is described as 'a type of social intelligence that involves the ability to monitor one's own and other's emotions, to discriminate among them, and to use this information to guide one's thinking and actions'. It emerged from an array of research looking at how people perceive, communicate, and use emotions.

Popular or public interest in EI arose from a book by Goleman [12] which suggested that life success depended more on emotional intelligence than

cognitive intelligence. As is often the case in an emerging area, the use of a variety of terms makes it difficult to agree on an overarching definition of EI and it has been referred to as emotional literacy, the emotional quotient, personal intelligence, social intelligence, and interpersonal intelligence [13]. One of the most rigorous examinations of EI to date (a meta-analysis of the relationship between EI and performance outcomes) suggests that EI is "the set of abilities (verbal and nonverbal) that enable a person to generate, recognize, express, understand, and evaluate their own, and others, emotions in order to guide thinking and action that successfully cope with environmental demands and pressures" [14].

In popular terms, it is a measure of an individual's ability to perceive emotions in self and others, manage them, and handle relationships [12]. It is therefore expected that students with high EI would cope better with the stressors in the medical training environment and report less perceived stress. In medical education, EI can play an important role in improving patient outcomes [15] as those with low EI would thus have a poor coping and later poor ability to empathize with the patients, and because of poor control of their own emotions, counter-transference could affect their clinical decisions.

EI is thus cited in various literature as ' essential' for nurse managers' [16], nursing and medical recruitment [9,17] and curricula [18] however, little empirical work has examined EI in health professionals or its impact on professional and academic outcomes. The few studies examining this so far have demonstrated that EI was positively associated with lower perceived stress (PS) in dental undergraduates but there is a lack of studies examining this association in India.

First year students were chosen for study because if the results are promising, these measures could be used in the future to identify students early in the course who may be particularly highly stressed or low in EI and might benefit from additional support.

AIMS AND OBJECTIVES

1) To study the level of perceived stress in 1st year medical undergraduates

2) To study the level of Emotional Intelligence in 1st year medical undergraduates

3) To find the relation between Emotional Intelligence and level of perceived stress among 1st year medical undergraduates

METHODS

The present study was undertaken at Dr. S.N.M.C Jodhpur, affiliated to Rajasthan University of Health Sciences (RUHS), Jaipur. Each year Dr. S.N.M.C admits a batch of 150 students for the MBBS course. A cross-sectional survey using self-administered questionnaire was conducted on the students of first year MBBS admitted during 2012. No exclusion criteria were applied but students were self-selecting as participation was entirely voluntary.

All students received two questionnaires for completion, one is a measure of Emotional Intelligence and one measure of Perceived Stress. A researcher explained to the students the purpose of the survey and assured them of confidentiality. The completed questionnaires were later collected from them. Pearsons coefficient of correlation was applied for statistical analysis.

TOOLS

Stress was measured using the Perceived Stress Scale (PSS-10), whose internal consistency, test-retest reliability, concurrent validity, and predictive validity have been tested in a general population. The authors originally developed a 14 item scale having an internal consistency of 0.85 (Cronbach a co-efficient) and test-retest reliability during a short retest interval (several days) of 0.85.[19] PSS-10 was later developed by the same author and validated to conform to the original scale[20,21]. The PSS-10 was designed to measure the "degree to which situations in one's life are appraised as stressful." It comprises ten items, four of which are reverse-scored, measured on a five-point Likert scale from 0 to 4. The total score is calculated by summing responses. The possible range of scores is 0, indicating no perception of stress, to 40, indicating high perception of stress**.** The PSS was designed for use with community samples with at least a junior high school education. The questions are general in nature and relatively free of content specific to any sub population group.

Emotional Intelligence was measured using the Emotional Intelligence Scale (EIS) by Anukool Hyde, Sanjyot Pethe and Upinder Dhar [22] whose internal consistency, test-retest reliability, concurrent validity, and predictive validity have been tested in a general population. The authors did not come across any other scale developed for Indian conditions. The present scale is a suitable self report measure for Indian milieu, eminently suitable for group as well as individual testing. The split-half reliability coefficient for the scale is 0.88 and the scale has high content validity with a reliability index of 0.93. It comprises 34 items, measured on a five point Likert scale from 1 to 5. The total score is calculated by summing responses. The possible range of scores is from 34 to 170, with those

having higher score having higher emotional intelligence. Those scoring 85 and above were considered as having high E.I.

RESULTS AND DISCUSSION

Data was obtained from 122 out of 150 students, who voluntarily completed all the questionnaires. Participants who have left any question unanswered were not included in the study. Thus a response rate of 81.33% was obtained.

Table 1 describes the socio-demographic profile of the subjects. 50.82% of the respondents were male and the majority of them belong to Hindu religion with all but 2 respondents being in the age group of 17-20 years.

Table 1. Socio-demographic profile and PSS & EIS Scores among subjects.

Socio-demographic profile of the subjects		
	Male	Female
Hindu	58	58
Muslim	4	2
Total	62 (50.82%)	60 (49.18%)
Perceived Stress (PSS) and Emotional Intelligence (EIS) Scores among males and females		
	PSS Scores (Mean ± SD)	**EIS Scores (Mean ± SD)**
Males	15.968 ± 5.108	132.226 ± 15.562
Females	17.3 ± 5.951	135.333 ± 11.873
't' value	1.325*	1.242**

*p value=0.1879, **p value=0.2167

Table 1 shows the Perceived Stress score and Emotional Intelligence score among males and female students. Unpaired t-test (Welch's test) was applied to see if any significant difference exists on the basis of gender. All the subjects were found to have high emotional intelligence as per the norms given in scale. In present study no significant difference was found in stress scores as well as emotional intelligence scores between males and females, which are similar to that found in a study by Yvonne Birks et al [23]. There also are some studies which show different findings. A multinational study in dental students demonstrated higher perceived stress in females [24]. Petrides and Furnham (2004) demonstrated higher self estimated Emotional Intelligence in males than females [25]. Conversely, some studies have found females score higher in Emotional Intelligence [26].

The correlation (Pearson's) between EI and PS was r = -0.2765 (Fig.1) which is significant with p value= 0.0310 ($p<0.05$). The significant negative correlation indicates that those with higher Emotional Intelligence have a lower level of Perceived Stress. Thus Emotional Intelligence remained a significant predictor of Perceived Stress independent of the student's gender. This is similar to the results found in a study by Yvonne Birks et al (2009) as well as in a multinational study on dental students by Allan Pau et al (2006) [23,24]. The finding that EI is inversely associated with PS has two implications. First, it suggests that students with higher EI can cope better with the stressful demands of their training, supporting the proposition for training to enhance EI [27] in health professions students as part of their curricula. Second, it reinforces the argument that EI, along with the ability to manage stress, is a necessary attribute of professional competence [28] and lends further support to the proposal for using EI as a selection criterion for entry into health professions training.[29,30]

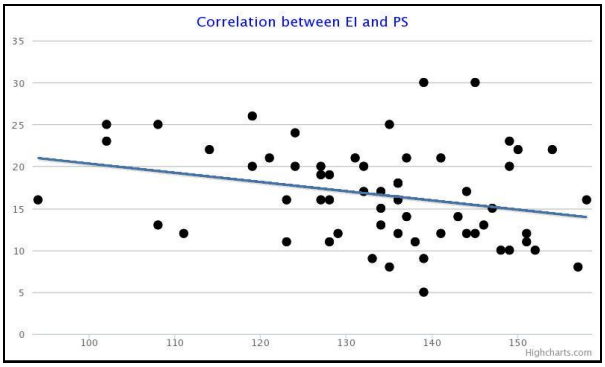

Figure 1. Scatter Diagram showing correlation between Emotional Intelligence (EI) and Perceived Stress (PS)

CONCLUSION

In conclusion, this study has demonstrated that EI is inversely correlated to PS, independent of students' gender. It may be that as people get more stressed, their EI scores decrease, or that as EI scores decrease for whatever reason, stress increases. However, given that EI is more stable than PS, it might make sense to hypothesise that it is EI that is affecting stress rather than the other way around. There may be important individual differences in the behavior and stability of EI that would certainly warrant further investigation.

While this study suggests the link between EI and

stress may be worth pursuing, much work remains to be done to fully explore the relationships between emotional intelligence and stress in students in various health professions and this study raises some interesting questions for further research.

One limitation of the present study is that it is based on correlational rather than experimental evidence, a limitation inherent in many studies of personal attributes. Further work will be required to determine how EI impacts on stress, and also on adaptation or coping and whether interventions may facilitate development of effective strategies. Another limitation is that other factors that may be correlated to PS such as students' personality traits and learning styles were not examined. Future research should explore other factors that predispose students' experiences of stress and enable their management of it. Another limitation of our study is that the sample size is small and from only one institution hence findings can't be generalized and multi-institutional studies with a larger sample size are required in future.

EI research is still in its infancy, and further research is needed before we can fully understand the role that EI might play in moderating stress or other outcomes. Future work may develop the suggestion that higher EI may be associated with lower perceived stress by investigating whether teaching EI might increase feelings of control and competence. Future studies should focus on interventions to enhance EI. Although there is ongoing debate as to whether EI can be improved, some evidence exists to suggest that it can be enhanced [31]. If EI skills can be developed then this should lead, in turn, to more effective coping, and better psychological adaptation.

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