

ORIGINAL ARTICLE

An assessment and correlation of emotional Intelligence and mental health of medical students

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Abstract	Introduction	Methodology	Results	Conclusion	References	Citation	Tables / Figures
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Abstract

Introduction: Emotions like joy, anger, grief, jealousy, love, fear make our life worthwhile. Whatever we do, incites some emotion in us. If we are able to enjoy our emotions, without them having excessive control over us, then we can make ours as well as others' lives better. Aim of the study was to assess and correlate emotional Intelligence with mental health. **Methods:** Type of study: Descriptive type of cross sectional study. **Sampling:** Simple random sampling. **Study population:** Under graduate students in a private medical college in western Uttar Pradesh. Sample size: 246. **Results:** The average emotional intelligence score was 26.82 with standard deviation of ± 5.80 . Average emotional intelligence among males was 27.04(± 6.72) and was 26.63(± 5.07) among females. Spearman Rank correlation coefficient "r" = 0.789, showed highly positive correlation between ranks from both the score. ($p=0.0000$). **Conclusions:** The medical students showing higher scores of emotional intelligence are less likely to be mentally stressed.

Keywords

Emotional Health; Medical Students; Mental Health

Introduction

Introduction: Emotions like joy, anger, grief, jealousy, love, fear make our life worthwhile. Emotional intelligence is mental ability one is born with, making them emotionally sensitive and giving them potential for emotional management skills, helping them to maximize their long term health, happiness and survival.(1) It is the emotion of joy and happiness which motivate us to work hard. It is the emotion of fear which stops us from trying and it is the emotion of anger which pushes us to involve in violence. Medical profession is full of hard work, success and failures along with exposure to witness life, death, sorrow, hope, trust and many more complex types of emotions. Emotional intelligence abilities are about four times more important than Intelligence Quotient to determine professional success and prestige.(2) Gender based differences have also been reported in emotional

intelligence(3). Researchers have identified the importance of emotional intelligence in general health, happiness and self-efficacy (4-7). Emotional intelligence has found to be associated with spiritual health, perceived stress and quality of life (8-11) If doctors are empowered in taking care of their own emotions they are more likely to empathize with the patients.

Aims & Objectives

To assess and correlate the emotional Intelligence and mental health of medical students.

Material & Methods

Type of study: Descriptive type of cross sectional study

Sampling: Simple random sampling

Study population: consisted of under graduate medical students more than 18 years of age, studying in a private medical college in western Uttar Pradesh.

Sample size: Based on the study of **Madhvi Kaistha et al.**(12) the sample size was calculated by using the formula:

$$N = \frac{Z^2 PQ}{d^2}$$

N= Sample size

P= estimated prevalence

Q = (1-P)

d= Absolute precision

Z statistic (at 5% level of significance): 1.96

P is taken as 43%

Q is (1-P) that is 57% and

d is taken as absolute precision of 7%.

After putting up the values the sample size comes out to be 192. After addition of 10% more for non-respondents the minimal sample size came out to be 211.

In our study we have finally collected data from 246 study participants.

Sampling technique: Simple random sampling technique was used to select the study participants. From the first professional, second professional, third professional part -1 and third professional part-2, students were randomly selected to participate in the study.

Inclusion criteria:

1. An under graduate student, above 18 years of age studying in the medical college, consenting to be a part of the study.
2. Any student already diagnosed and under treatment for psychiatric disorders was excluded from the study.
3. Interns were not included.

Study tool: Consisted of a pre designed, pre tested semi open ended questionnaire having three sections. Section one was having questions regarding the socio demographic information of the study participants, section two was for the self-assessment of emotional intelligence using **Quick Emotional Intelligence Self-Assessment questionnaire**(13). Section three of the questionnaire utilized **General Health Questionnaire-12 (GHQ- 12)**(14) developed by Goldberg which has been adopted by WHO ,was used to assess the mental health status of study participants .

Quick Emotional Intelligence Self-Assessment has 4 domains

1. Emotional awareness
2. Emotional management
3. Social emotional awareness
4. Relationship management

Each domain has a set of statements which are to be ranked by the participant based on the suitability to him or her. The ranks ranged from zero (never), 1 (rarely), 2 (sometimes), 3 (often) and 4 (always) on five point Likert scale.

General Health Questionnaire (GHQ-12) comprised of 12 questions to assess general and psychological health during past one month. Each question had 4 responses which were given a score as 0, 1, 2 and 3. A score up to 15

is typical, Score more than 15 is an evidence of distress Score more than 20 is suggestive of severe problems and psychological distress.

Data collection procedure: Data was collected in a classroom setting from the participants who consented to participate in the study. The participants were made to sit with enough space between them to ensure the privacy and confidentiality.

Quality control was ascertained by maintaining complete anonymity and confidentiality of the participants.

Implications: The study tried to highlight the importance of emotional health and identify areas where more concentrated efforts are needed to make the youth including medical students, more empowered in handling their emotions and use them in the most positive way for betterment of themselves and the society as well. An early assessment of mental distress among medical students would help to redesign the curriculum, ways of teaching and the environment in the medical institutions to produce mentally healthy doctors who can manage their emotions in the most positive way.

Results

Table 1 reveals the socio demographic characteristics of participants. Of 246 study participants 115 (46.75%) were male and 131 (53.25%) were females. The native place for most (93.09%) was a city and 182 (73.98%) out of 246 have been living in a nuclear family.

Table 2 shows the average score in each of the Emotional intelligence domain as well as the average emotional intelligence score 26.82 with standard deviation of ± 5.80 .

Table 3 shows the association between socio-demographic variables and average emotional intelligence score of the study participants. A statistically significant association was found between the native place of study participants and average emotional intelligence score. ($p < 0.05$)

Correlation between the emotional intelligence and the mental health status

Average emotional intelligence among males was 27.04(± 6.72) in comparison to 26.63(± 5.07) among females. (**Figure 1**)

Spearman Rank correlation coefficient "r" was calculated after assignment of rank to each participant on the basis of emotional intelligence score and GHQ score (for mental health) "**r**" =**0.789**, which shows highly positive correlation between ranks from both the score. (**p=0.0000**) (**Figure 2**)

Discussion

In study conducted by Sundararajan S et al(11) average EI score was found to be 25.74 \pm 4.7. Mathew Todres et al (15) have reported higher scores for students in their final year as compared to students in first and second year. Hassan Farahi et al(16) have reported significant relationship between emotional intelligence and general health similar to current study. In our study average EI

score has come out to be 26.85 with a standard deviation of ± 5.76 which is not far from their results. They have also concluded a statistically significant association between gender and average EI score but no statistically significant association between gender and average EI score is found in current study. In study by Qaiser Suleman et al(17) the overall emotional intelligence score is 30.51 ± 3.66 has been reported.

In our study the average GHQ score for assessment of mental health was found to be 12.93 with a standard deviation of ± 6.98 . In study conducted by Hassan Farahi et al(16) the average GHQ score has been reported as 14.12 ± 6.78 . The Mean GHQ score reported by Jamshid Ahmadi et al.(18) is 16.46 ± 5.69 . Khan H et al(19) have reported a mean GHQ score of 15.0 with a standard deviation of ± 6.3 .

In study done by Shirin Bashir Attar et al(10) the authors have concluded a strong correlation between the psychological stress score and emotional intelligence ($p=0.000$) similar to current study which found out a highly positive correlation between ranks from emotional intelligence score and GHQ score. (Spearman Rank correlation coefficient " r " = **0.789**, $p=0.0000$).

Hassan Farahi et al(16) have also reported a significant correlation between emotional intelligence and GHQ score though they have used different tools for the assessment of emotional intelligence and psychological stress.

Joan Guerra-Bustamante et al(7) have reported a significant correlation between emotional intelligence and psychological well-being ($p < 0.001$) though they have used different tools for the assessment of emotional intelligence (Trait Meta Mood Scale-24) and psychological well-being (Oxford Happiness Questionnaire -OHQ).

Ye-Ha Jung et al(20) have reported that high levels stress were significantly related to poor emotional regulation. Nahla Khamis Ibrahim et al(21) have reported a significant association between academic year of medical students and emotional intelligence. They have also reported that emotional intelligence score is negatively correlated to perceived stress which is similar to our findings.

Conclusion

We can conclude that the medical students showing higher scores of emotional intelligence are less likely to be mentally stressed. Medical schools can come up with opportunities for the development of emotional intelligence inside and outside the classes.

Recommendation

Youth should be empowered to be aware of their own emotions. If they become emotionally intelligent they are more likely to empathize with others in family and society too. This can reduce the increasing problem of mental and psychological illnesses and violence in society. Emotional intelligence abilities are important along with academic Intelligence and professional success and prestige

Limitation of the study

The study was carried out only amongst medical students It could not include students from other streams because of limitation of resources.

Relevance of the study

Studies exploring emotional intelligence among medical professional and students are very few, whereas medical professionals are exposed to strong emotions of every type from their patients and attendants. More evidences need to be generated so that emotional intelligence could gain more importance in the medical curriculum and training.

Authors Contribution

HK: conceived the idea. RG & SM helped in the statistical analysis of the collected data.

Acknowledgement

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Tables

TABLE 1 CHARACTERISTICS OF THE STUDY POPULATION (N=246)

S.No.	Characteristics	Category	Frequency	(%)
1	Age (years)	18	5	2.03
		19	23	9.35
		20	54	21.95
		21	74	30.08
		22	56	22.76
		23	28	11.38
		24	6	2.44
2	Gender	Male	115	46.75
		Female	131	53.25
3	Native place	City	229	93.09
		Village	17	6.91
4	Type of Family	nuclear	182	73.98
		joint	64	26.02

TABLE 2 SCORES OBTAINED IN THE FOUR DOMAINS OF EMOTIONAL INTELLIGENCE

S. No.	Emotional intelligence Domain	Mean Score	Standard deviation
1	Emotional awareness Score (0-40)	25.24	±6.45
2	Emotional management score(0-40)	25.89	±7.62
3	Social emotional awareness score(0- 40)	28.57	±7.13
4	Relationship management score(0-40)	27.57	±7.97
5	Average Emotional intelligence score	26.82	±5.80

TABLE 3 SOCIO-DEMOGRAPHIC VARIABLES & AVERAGE EMOTIONAL INTELLIGENCE SCORE

S. No.	Characteristics	Category	Frequency (%)	Emotional Intelligence Score below average	Emotional Intelligence Score above average	χ^2 p value
1	Age (years)	18-21	156	68 (43.59)	88 (56.41)	$\chi^2 = 0.089$ P =0.765; Df=1
		22-24	90	41 (45.56)	49 (54.44)	
2	Gender	Male	115	52 (45.22)	63 (54.78)	$\chi^2 = 0.072$ P =0.788; Df=1
		Female	131	57 (43.51)	74 (56.49)	
3	Native	City	229	97 (42.36)	132 (57.64)	$\chi^2 = 5.111$ P =0.023; Df=1
		Village	17	12 (70.59)	7 (41.18)	
4	Type of Family	nuclear	182	80 (43.96)	102 (56.04)	$\chi^2 = 0.035$ P =0.851; Df=1
		joint	64	29 (45.31)	35 (54.69)	
5	Religion	Hindu	229	104 (45.41)	125 (54.59)	$\chi^2 = 1.964$ P =0.374; Df=2
		Muslim	12	03 (25.00)	09 (75.00)	
		Others	5	02 (40.00)	03 (60.00)	
6	Caste	General	208	94 (45.19)	114 (54.81)	$\chi^2 = 0.426$ P =0.513; Df=1
		OBC	38	15 (39.47)	23 (60.53)	
7	Academic year	First year	61	28 (45.90)	33 (54.10)	$\chi^2 = 4.822$ P =0.185; Df=3
		Second year	68	23 (33.82)	45 (66.18)	
		Third year	49	26 (53.06)	23 (46.94)	
		Fourth year	68	32 (47.06)	36 (52.94)	

Figures

FIGURE 1 CORRELATION BETWEEN EMOTIONAL AWARENESS & RELATIONSHIP MANAGEMENT SCORE

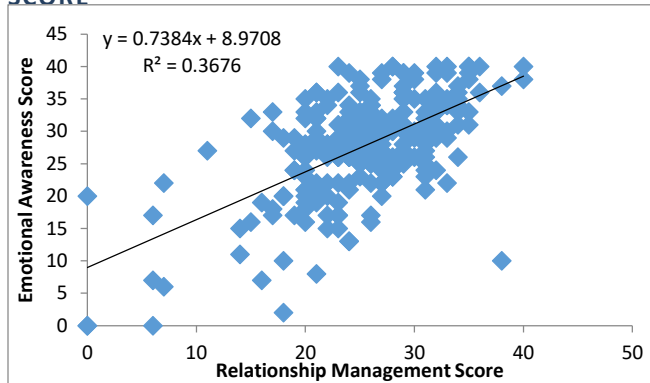
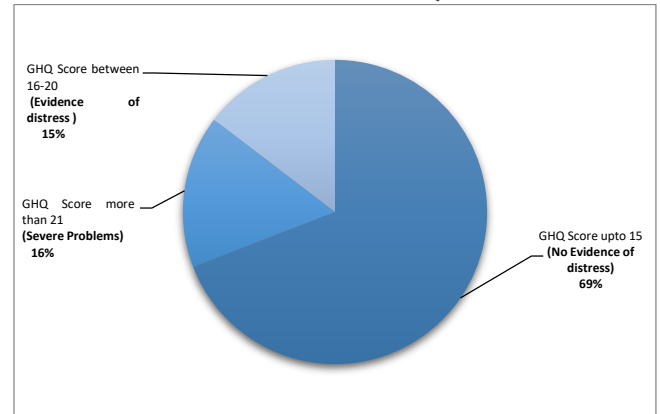


FIGURE 2 PIE CHART SHOWING DISTRIBUTION OF STUDENTS ON THE BASIS OF GHQ SCORE



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