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Emotional intelligence among undergraduate medical students: A cross-sectional study

[1]Adhikari B, [1]Maharjan N, [2]Chaudhary S

[1]Bijaya Adhikari, [1]Niroj Maharjan, Department of Physiology, KIST Medical College, Imadol, Lalitpur; [2]Sonam Chaudhary Department of Physiology, Institute of Medicine, Maharajgunj, Kathmandu, Nepal.

ABSTRACT

Introduction: Emotional intelligence (EI) is understanding one's own emotions and manage those emotions without disturbing themselves. Numerous investigations have revealed that there is a positive relationship between higher level of emotional intelligence and excellent academic success among students.

Objectives: To assess the level of emotional intelligence among medical students and find out the stream and gender variation in emotional intelligence.

Methodology: A cross- sectional study was conducted among 151 bachelor of medicine bachelor of surgery (MBBS)and bachelor of dental surgery (BDS) students studying in first and second year at KIST medical college from June 2023 to August 2023. EI questionnaire by Emily Sterrett was administered. Frequency, percentage, mean and standard deviation were used as descriptive statistics and t-test was used to see the difference in the mean EI score with significance level <0.05.

Results: Out of 151 students, 102(67.54%) were MBBS students whereas 49 (32.45%) were BDS. The mean Emotional intelligence score (EI) was 108.66±11.77. The mean EI score was found to be higher in BDS students (113.28± 8.84) than MBBS (106.45 ± 12.38) and the difference in the mean score was highly significant. Similarly, females were found to have higher EI score than males and the difference was statistically significant.

Conclusion: The study demonstrates that dental students have higher emotional intelligence than MBBS students and females have higher emotional intelligence than males.

Keywords: Emotions; Emotional Intelligence; Students.

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Address for correspondence

Dr. Bijaya Adhikari
Associate Professor
Department of Physiology
KIST Medical College and Teaching Hospital
E-mail: bijayakusam@gmail.com

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INTRODUCTION

Emotional intelligence describes the ability to monitor one's own and other's feelings to discriminate among them and use the information to guide own thinking and actions.[1] Emerging researches in the field of education suggests that EI has been positively associated with academic achievement and health outcomes.[2]Salovey et al found that the college students who scored higher on a test of emotional intelligence were better able to recover from stress and less likely to become ill when under stress.[2]

Emotions are essential determinants of how well medical students function.[3] Studies have shown physicians who demonstrate empathy are more effective in eliciting a good history, arriving at an accurate diagnosis and eliciting good compliance to their prescribed treatment.[4]

Numerous investigations have revealed that there is a positive relationship between higher level of emotional

intelligence and excellent academic success among students.[5]Students with high emotional intelligence are confident enough to cope with demanding and complex college experience efficiently and perform better academically.[6] This study aims to find the level of emotional intelligence among medical students and find the difference among MBBS and BDS students. It also aims to find the gender variation in emotional intelligence.

METHODOLOGY

A cross sectional study was conducted among 151 MBBS and BDS students of first year and second year in KIST Medical College from June 2023 to August 2023. The study was done after getting approval from the institutional Ethical Review Committee of KIST Medical College (IRC Ref number:2079/80/90). The sample size was calculated by using a formula for known population 95% confidence interval and 5% margin of error.

$$\frac{Z^2 \times P(1-P)/e^2}{1 + [z^2 \times P(1-P)/e^2 N]}$$

Where Z= 1.96, Margin of Error (e) = 0.05, Sample proportion (P) = 0.5

N= 249 Known population or finite population (Here first year and second year MBBS and

BDS students) The calculated sample size was 151. The study enrolled 151 students out of which 102 were MBBS students and 41 were BDS students. The students were selected by simple random sampling i.e. each student from MBBS and BDS were given a unique number according to their class roll number and batch and selected by lottery method. Informed consent was taken from students before administering questionnaire. A standardised self-evaluating questionnaire adapted from Sterrett's EI questionnaire (Emily.A. Sterrett, 2001) was used to assess the EI scores of first year and second year medical and dental students. All the students were provided instructions before the test. Separate proforma was given to fill all the demographic information along with clinical history and history of medication if any. Participants were given 15 to 20 minutes to complete the questionnaire. The test was conducted in their respective lecture halls. All the questions were well explained and were asked to respond genuinely to reduce the respondent bias. They were assured of confidentiality and anonymity as well. Students taking psychiatric medications were excluded. EI questionnaire by Emily Sterrett consist of 30 questions, five each to assess self-awareness, empathy, self-confidence, motivation, self-control, and social competence. All the participants were requested to answer each question. Response options to each question ranges between virtually never to virtually always using the rating scale 1-5.The domain score was obtained by adding the scores of that specific domain. The minimum and maximum scores for a specific domain is 5 and 25 respectively with overall score ranging from 30 to 150. Scores <120 were considered low and ≥120 were considered high. The collected data was entered and analysed using statistical package for social sciences, IBM SPSS Statistics for Windows version 25 (IBM Corp., Armonk, N.Y., USA). Descriptive statistics such as mean EI score, mean score for specific domain and frequency was determined. Independent sample t test was used to assess the difference in the mean EI score among males and females and also among MBBS and BDS students.

RESULTS

Out of 151 students participated in our study,102 (67.54%) were from MBBS stream and 49 (32.45%) were from BDS stream. Among them 71(47.1%) were male and 80 (52.9%) were female (Table 1).

The mean EI score among the students was 108.66±11.77. Minimum score was 71 and maximum score was 139. The mean EI score was found to be higher in BDS students than MBBS students and the difference in the mean score was highly significant. Similarly, females had higher EI score than males and the difference was found to be significant ($p<0.01$, Table 2).

The majority of students 124 (82.11%) had low EI score. Only 27 (17.88%) students were having high EI score. Among 80 females, 65 (81.25%) had low EI score. Out of 71 males, 59 (83.09%) were found to have low EI score. Percentage of BDS students with low EI score was lower than percentage of MBBS students (Table 3).

The mean scores of all the specific domains of Emotional intelligence were found to be higher in dental students than MBBS students. The difference in mean scores for self-awareness, empathy and motivation were found to be significant among BDS and MBBS students (Table 4).

Table 1: Distribution of students according to stream and gender

Stream	Frequency (n)	Percentage (%)
MBBS	102	67.54
BDS	49	32.45
Gender		
Male	71	47.1
Female	80	52.9

Table 2: Mean Emotional Intelligence score and its difference in gender and stream.

Category	MeanEI score	Minimum Score	Maximum Score	p - value
Stream		71	139	<0.001*
MBBS	106.45 ± 12.38	95	127	
BDS	113.28± 8.84			
Gender				
Male	106.05 ± 13.15	71	127	0.01*
Female	110.98 ± 9.91	80	139	
Total	**108.66 ± 11.77**	**71**	**139**	

p-value significant at ≤0.05,*=independent "t" test

Table 3: Distribution of students with low and high intelligence score

Category	Low intelligence score EI score < 120		High Intelligence score EI score ≥ 120	
	N	%	N	%
Stream				
MBBS	90	88.23	12	11.76
BDS	34	69.38	15	30.61
Gender				
Male	59	83.09	12	16.9
Female	65	81.25	15	18.75
Total	**12482.11**		**2717.88**	

Table 4: Difference on specific domains score among MBBS and BDS students

Domains	Mean	MBBS	BDS	p value
Self-Awareness	18.57± 2.87	18.14± 2.68	19.3± 3.06	<0.05*
Empathy	17.87± 3.38	17.41± 3.08	18.65 ± 3.73	<0.05*
Self confidence	18.10± 22.72	18.00± 2.83	18.28± 2. 53	>0.05
Motivation	17.72± 3.19	17.25 ± 3.41	18.55± 2.59	<0.05*
Self Control	16.93± 2.82	16.87± 2.91	17.04± 2.68	>0.05
Social Competency	16.37± 3.09	16.13± 3.27	16.79 ± 2.73	<0.05*

p-value significant at ≤0.05,*=independent "t" test

DISCUSSSION

Emotional intelligence is important in creating sensitive and empathetic doctors for future. It is a key element in handling stressful situation.[7] In our study, the mean EI score among the students was low (<120).The study done in Ghana among post graduate students also showed low emotional intelligence (mean score 105.49± 14.84) .[8] It may be due to poor coping mechanisms to deal with enduring stress. Our study was also consistent with study done by Imran et al where undergraduate medical

students had low EI score.[9] But our study result was not in consistent with the study done by Sundarranjan S and Gopichandran V, where the medical students were found to have good level of emotional intelligence.[4] Similarly in the study done by George et al. majority of students had average EI.[10] It might be due to difference in study tool applied in this study in which 60% to 80% of maximum score was considered average EI.

In our study, mean Emotional intelligence score was found to be more in dental students than MBBS students and the difference was statistically significant. This was in contrast to the study done in Peshawar Pakistan where no significant difference was observed in emotional intelligence between BDS and MBBS students.[11] The mean scores in all domains were average (16-20) among MBBS as well as dental students. The difference in mean scores was significant in only three domains; self-control, self-confidence and social competency. Dental students were found to have higher scores in these three domains than MBBS students. Dental education is one of the most demanding and challenging field of study as dental students are expected to acquire diverse competencies such as academic and clinical along with skills. High EI can help them to cope up with the stress and perform better in academics. Patient dissatisfaction in dental practice is often caused by dentist's poor communication skills. So high EI will help to lessen the patient fear and increase patient and dentistsatisfaction.[12]

According to some studies, females have higher emotional intelligence than males.[13] Scholars are actively exploring gender differences in emotional intelligence, a noteworthy research area. Their focus includes whether males and females exhibit distinct patterns of emotional intelligence and how these variations may impact their educational experience.[14] According to analysis of many studies, women are more interpersonally adept, showing more empathy and greater awareness of their emotions where as men are more self-confident, optimistic and adaptable. Since females tend to be more emotional and intimate in relationships as compared to males, their emotional intelligence ought to be higher than that of males.[15]

In our study also the mean EI score of females was found to be higher than males and the difference was significant. High EI score(>120) was also found to be in greater percentage of females than males. Our result was consistent with the study done by Patel SK where females showed higher level of emotional intelligence than men. In his studies art college female students was higher than commerce college female students.[16] It has been affirmed that women tend to be more emotionally expressive than men and they understand emotions better. In addition some evidence exists that certain areas in brain dedicated to processing emotions could be larger in women than in men and there is a difference in cerebral activity based on sex.[17] The study done by Venkatappa et al also showed higher emotional intelligence among females which was similar to our study.[17] Study done by Rao SA and Komala M showed higher emotional intelligence among males, which is in contrast with the results of our study but the difference was not statistically significant.[18] The study was limited to first year and second year students only in a single medical college. So, the sample size and setting may not be sufficient to reflect the medical students population in Nepal. Further studies in larger samples are required.

CONCLUSION

The present study concluded that medical students have low Emotional intelligence which can be due to burnout and focus on cognitive learning over emotional awareness. BDS students have high EI score than MBBS students and females exhibit high emotional intelligence than males. Understanding of this aspect may provide better insight in to individual's emotional development. Psychological and educational intervention on individual's emotional balance might indirectly influence success on their career and family life.

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