

## **Assessment of Association between Emotional Intelligence and Academic Achievement among Indian Nursing Students**

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### **ABSTRACT**

**Objectives:** To assess the association between emotional intelligence and academic achievement among nursing students and identify the areas that need consideration.

**Methods:** One Hundred and fifty nursing students were recruited from a nursing college in Pune city, India. A self-administered questionnaire was used to collect the data on demographic as well as life style factors. The Emotional intelligence was assessed using a self-assessment checklist developed by Sterrett. Academic achievement was assessed using the scores obtained in the final year undergraduate nursing examination.

**Results:** Out of 150 subjects, only 35% students had scores >20 in each domains of EI. Nearly half of the participating students scored between 16 to 19. The variables like sleep, recreation, choice of profession, relationship with teachers and colleagues were significantly associated with EI. Emotional Intelligence as an independent variable was found to be highly significantly associated with the academic achievement of the nursing students.

**Conclusions:** The nursing students had a positive relationship among various lifestyle, professional factors and the emotional intelligence. The EI was also positively associated with the academic achievement. But majority of the students faired low in domains of EI score. Hence in the ever challenging patient centric work scenario of the nursing professionals, the teaching of EI should be pulsed at every stages of learning.

**Keywords:** *emotional intelligence, academic, achievement, nursing, students, India*

### **INTRODUCTION**

Emotional intelligence is a type of social intelligence that involves the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions (Salovey & Mayer, 1990). The scope of emotional intelligence includes the verbal and nonverbal appraisal and expression of emotion, the regulation of emotion in the self and others, and the utilization of emotional content in problem solving. <sup>[1]</sup>

Emotional intelligence (EI) is a concept recognized in the social psychology literature. <sup>[2]</sup> EI has been widely cited as an attribute which can improve the quality of work and increase productivity as well as personal and organizational success. <sup>[3]</sup> Emerging researches in the field of education suggests that EI has been positively associated with academic achievement. <sup>[4,5]</sup> Studies have also linked low EI with deviant behavior, drug taking, alcohol abuse and poor relationships with friends. <sup>[6,7]</sup>

Emotional intelligence (EI) is increasingly discussed as having a potential role in other healthcare disciplines, both for personal mental health and professional practice. EI has been linked to academic performance and studied in other professions. <sup>[8-16]</sup>

EI has also been linked to health outcomes. For instance, Salovey et al in their study 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. [17]

In nursing, EI is appreciated as one of the critical component of competency of care, which both influences institutional work and the building of effective nurse-patient relationships. These ultimately lead to more patient-centered care. [18]

Hence, it is considered important for nursing leaders to understand patients' perspectives and to engage in relationships that will facilitate successful management. According to Bulmer-Smith et al, EI became popular within nursing literature but it is sometimes inadequately defined, overestimated and has not been actually measured. [19] Also the nursing education is one of the challenging and stressful fields of study as nurses are expected to acquire academics, clinical as well as interpersonal skills.

The literature review reveals paucity of studies on relationship between EI and academic achievement that specifically focused on nursing students in India. Therefore in an attempt to better understand the nursing students, this study aimed to assess students' EI and its associated factors and also to find existence of any association between EI and their academic achievement.

## MATERIALS AND METHODS

A cross-sectional questionnaire survey was conducted over a period of two months, May and June 2017, among the nursing students in Pune city, India. Study participants were all the students (first to final year) enrolled in the four-year Bachelor of Science, nursing course at a nursing college in Pune city, India. Necessary permission was obtained from the head of the institution of the college. Informed consent was obtained from the study participants.

The study tool consisted of a questionnaire with two parts. The first part addressed demographic, lifestyle, and professional factors. Demographic variables were age and marital status. For assessing lifestyle factors, questions encompassed

sleeping habits, exercise, and recreational activities. Professional factors were career choice, relationship with colleagues as well as teachers, and academic achievement. The second part included a structured questionnaire on EI adapted from Sterrett's EI questionnaire. [20] It consisted 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 ranged between virtually never to virtually always using the rating scale 1-5.

Prior to the commencement of the main study, a pilot study was conducted to assess the feasibility, validity and reliability of the questionnaire and was revised accordingly. Reliability and consistency of the questionnaire on EI were estimated (Intraclass Correlation Coefficient 0.84 and Cronbach's alpha 0.83).

The investigator described the study to the students in person during a class session and assured that their responses would be kept confidential. Participation was voluntary. Individuals with cognitive impairment were excluded. The questionnaires were assessed for completeness on the day of the study.

For EI analysis, the score for each domain was obtained by adding the scores for that specific domain. The total score was the sum of all six domain scores. The minimum and maximum scores for each domain were 5 and 25, respectively, with an overall score ranging from 30 to 150. Scores of less than 120 were considered low and  $\geq 120$  high. Based on previous studies, a score of  $\geq 20$  in each domain was considered good EI; 16-19 average EI; and  $\leq 15$  poor EI. Academic achievement was based on final-year Bachelor of Science, nursing examination (percentages). High and low academic achievement was defined by examination percentages  $\geq 60\%$  and  $< 60\%$ , respectively.

The data was analyzed using SPSS Version 20.0 (SPSS, Inc., Chicago, IL,

USA). A P-value of <0.05 was considered to indicate statistical significance (with confidence interval of 95%). Mean and standard deviation (SD) were calculated for continuous variables. Test of significance like chi square was used. Logistic regression analysis was also performed in our study.

## RESULTS

A total of 150 nursing students participated in the study. All the participants duly filled and completed the questionnaire. The age of the students ranged between 18 and 23 years. The mean age of the participating students was 20.6 years. In our study all the participating nursing students were females.

Table 1 illustrates the mean, standard deviation and minimum and maximum scores for each component of EI, as well as the overall score of EI. In this study, of all the components of EI, the empathy component was found to be more than the others with the mean score as  $18.95 \pm 2.47$ . The students also possessed higher similar mean scores in the domains of motivation, self-awareness and self-confidence parameters of the Emotional Intelligence. However, Social competency

was found to be the lowest of all, with mean  $17.41 \pm 2.70$ . When the overall EI was estimated, the highest score was found to be 137 and lowest was 72 with the mean and SD as  $108.49 \pm 12.47$  (Table 1)

Out of 150 subjects, 35% students had scores >20 in each domains of EI. Nearly half of the participating students scored between 16 to 19. Around 65% students had scores <20 as cut off. Nearly 20 % had score < 15. (Table 2)

**Table 1. Mean Scores of domains of Emotional Intelligence (N=150)**

SI No	Domains	Range	Mean $\pm$ SD
1.	Self-Awareness	11-25	18.21 $\pm$ 2.80
2.	Self-confidence	10-25	18.15 $\pm$ 2.45
3.	Self-control	9-25	17.46 $\pm$ 3.15
4.	Empathy	12-24	18.95 $\pm$ 2.47
5.	Motivation	11-24	18.30 $\pm$ 2.64
6.	Social competency	10-24	17.41 $\pm$ 2.70
7.	Total	72-137	108.49 $\pm$ 12.47

**Table 2. Emotional Intelligence score distribution by domains (N=150)**

SI No	Domains	Score $\leq$ 15	Score 16-19	Score $\geq$ 20
1.	Self-Awareness	29 (19.3)	69 (46)	52 (34.6)
2.	Self-confidence	19 (12.6)	86 (57.3)	45 (30)
3.	Self-control	35 (23.3)	76 (50.6)	39 (26)
4.	Empathy	13 (8.6)	70 (46.6)	67 (44.6)
5.	Motivation	21 (14)	77 (51.3)	52 (34.6)
6.	Social competency	33 (22)	81 (54)	36 (24)
7.	Total	29 (19.3)	69 (46)	52 (34.6)

Figures in parenthesis indicates percentages

**Table 3. Association and logistic regression analysis between the lifestyle variables, professional factors as (Independent variable) and Emotional Intelligence (Dependent variable) (N=150)**

SI no	Variable	EI Low	EI High	Chi square	Odds ratio
<b>1</b>	<b>Sleep*</b>				
	>6 hours	22	83	Chi square value=52.91 , p $\leq$ 0.001	20.48(8.05-52.07)
	<6 hours	38	07		
<b>2</b>	<b>Recreation*</b>				
	Everyday	12	81	Chi square value=74.87 , p $\leq$ 0.001	36(14.13-91.71)
	Not everyday	48	09		
<b>3</b>	<b>Meeting friends</b>				
	Everyday	41	54	Chi square value=1.08, p=0.298	0.69(0.34-1.38)
	Not everyday	19	36		
<b>4</b>	<b>Physical exercises</b>				
	Everyday	38	50	Chi square value=2.56, p=0.109	1.70(0.88-3.28)
	Not everyday	35	27		
<b>5</b>	<b>Joined profession by choice*</b>				
	Yes	33	80	Chi square value=22.25 , p $\leq$ 0.01	6.54(2.85-15.02)
	No	27	10		
<b>6</b>	<b>Relationship with teachers *</b>				
	Good	23	55	Chi square value=7.48, p=0.006	2.52(1.29-4.94)
	Not good	37	35		
<b>7</b>	<b>Relationship with colleagues*</b>				
	Good	31	67	Chi square value=8.25 , p=0.004	2.725(1.36-5.45)
	Not good	29	23		

\*p<0.05

**Table 4.** Association and logistic regression analysis between the Emotional Intelligence (Independent variable) and Academic achievement- marks (Dependent variable) (N=150)

Variable	Academic achievement		Chi square	Odds ratio
	Marks Low	Marks High*		
Emotional Intelligence				
High*	24	66	Chi square value=15.13 , p<0.001	3.85(1.92-7.70)
Low	35	25		

\*p<0.05

In our study it was found that the variables like sleep, recreation, choice of profession, relationship with teachers and colleagues were significantly associated with EI except meeting with friends and physical exercises. Further statistical analysis showed significant odds with variables like choice of profession (OR=6.54), Sleep (OR= 20.48), Recreation (OR= 36), relationship with teacher (OR= 2.52) and with colleagues (OR= 2.72) (Table 3) ( $P<0.05$ )

Emotional Intelligence as an independent variable was found to be highly significantly associated with the marks per se i.e. academic achievement of the nursing students which formed the dependent variable. (Table 4)( $P<0.05$ )

## DISCUSSION

Emotional Intelligence is a powerful skill that enables one to recognize, direct, and positively express emotions. Emotion can override thoughts, transform relationships, and profoundly influence behavior. Emotional intelligence (EI) allows us to harness that power to understand ourselves, overcome challenges, and build strong relationships. [21]

It is also believed that emotional intelligence plays a very important role in leadership, work life and career development. Low EI may hinder the academic success and adjustment throughout the patient centric professional training. [22]

EI is increasingly made reference to in medicine and other healthcare disciplines where it is suggested that it is an important component for professional mental health as well as effective practice. [22,23]

Studies performed in past, in various populations have tried to explore

relationships between EI, lifestyle factors and clinical performance of the students but relationship of EI and academic performance needs further explorations. Therefore the present study on nursing students was undertaken to determine whether lifestyle factors and professional factors like choice of profession, relationship of students with teachers and colleagues (independent variable) affected EI (dependent variable). The study further assessed whether EI (independent variable) in turn affected academic achievement (dependent variable). Previous studies have considered different study population and assessment tools; hence comparison is done wherever possible.

In our study all the participating students were females in the age range of 18 and 23. This was in line with the previous studies where the maximum proportions of participants were females dental undergraduate students, in the age range of 19 and 25 years. [24] and also in a study in medical students of Mangalore, India. [22]

Present study findings was in agreement with that of previous studies with respect to the scores in the domains of empathy, motivation, self-awareness and self-confidence parameters of the Emotional Intelligence. [16,24]

The Social competency score was found to be the lowest of all the EI scores in our study, this was similar to the findings of the study by Ravichandra KS et al. [24] But our findings were in contrast to the findings of a study in Mangalore, India where female undergraduate students had better mean social competency score. [22]

The overall highest and lowest EI scores obtained in our study also fell in line with the overall score findings in a previous study. [24] The overall highest mean score in

our study was 108.49 which were also similarly found in a previous study. [22]

All the participants in our study were females and it is learned that women are innately more receptive than men to emotional signals, a quality that can contribute to a better understanding and hence, to a better empathetic relationship. [25]

In order to have high EI, an individual should have scores greater than 20 in EI domains. But in our study only three out of ten nursing students scored more than 20 when each of the domains of EI was analyzed. This is a crucial finding from our study which highlights amount of importance given to acquisition of soft skills by nursing students. Around half of the students scored between 16-19. This pattern of scoring was similarly observed in an earlier study where 54% of the students proved to have an average EI score. [24] Also around 65% students had scores <20 as cut off, this was similar to the finding of a previous study by Faye et al. [25] But our study finding is in contrast to an earlier study in Mangalore, India wherein around 33.6% students were poor in all domains of EI (score <20). [22]

Nearly 17 % had score < 15 which was a similar finding in an earlier study in Mangalore city, India. [22] but a slightly better score than that of a previous study in medical postgraduates, where in 30% students had scores less than 15. [25] Hence our study findings give indications that most of the students required assistance to improve their EI and warrants immediate intervention. This was in agreement with other studies. [24]

Our study also studied various lifestyle factors of students like sleep, recreation, meeting friends, physical exercises, choice of profession, relationship with teachers and colleagues and its interaction with the Emotional intelligence.

### **Sleep**

In our study it was found that those who slept for more than six hours were twenty times more likely to have a higher EI

score than their counterpart. This finding was in line with the findings of previous studies. [16,22,25]

### **Recreation**

The present study revealed that those students who spent time in recreation activities everyday were thirty six times more likely to have a higher EI score than other students who spent less time. This finding was in agreement with the study findings of earlier studies. [16,22,25] The study findings suggest that the time given to oneself for recreation and sleep has a positive effect on EI.

### **Joined profession by choice**

Our data revealed that those students who joined nursing profession by choice were six and a half times more likely to have a higher EI score than other students who made their career choice by compulsion. This was in congruence with the findings of previous studies. [16,22,25]

This might be because of the fact that emotional intelligence is one of the determining factors of people's adjustment and therefore, those who have more adjustment abilities have higher emotional intelligence. [26] In due course of the training the dissatisfaction of choosing the course would definitely be a deterrent in student's academic performance. Therefore joining a profession by choice is a major intrinsic satisfaction factor that is important for the patient centric job profile of the nursing students.

### **Relationship with teachers**

Our study also came out with the finding that those students who had good relationship with teachers were two and a half times more likely to have higher EI scores as compared to those students whose relationships were not congenial. This was consistent with the findings of previous studies. [16,25]

### **Relationship with colleagues**

Furthermore it was found in our study that those students who had good relationship with colleagues were two and a half times more likely to have higher EI scores. This was in agreement with earlier

studies. [16,22,25] This is reasoned by the fact that when we are aware and in control of our emotions, we can think clearly and creatively, manage stress and challenges, communicate well with others, and display trust, empathy, and confidence in all our relationships, and this is seen as a positive attribute by our superiors. [21] It has also been affirmed that women are more perceptive, have greater empathy, tend to understand emotions better and that they have a greater ability as regards to certain interpersonal skills. [27]

### **EI and academic achievement**

Academic achievement of a student is assessed by means of scores obtained in one's theory and practical examinations. Our study assessed interactions between EI as an independent variable and its influence on academic performance. It was subsequently found that those students who had high EI had 3.85 greater odds for higher scores in academics as compared to those with low EI. Our study findings were in line with previous studies wherein there was a significant relationship between the emotional intelligence and the academic achievement. [8,16,28,29] But our findings were in contrast to an earlier study among nursing students in New England, where in emotional intelligence was not correlated to academic success in undergraduate nursing students. [30]

It is learned that EI facilitates prioritizing of thoughts, behavior regulation and appropriately adapted lifestyle choices which benefits academic performance. [31] and our study findings also concludes in that direction.

The concept of emotional intelligence in the nursing education program can help the students deal with the education pressures and also to communicate with the people in a better way. [32]

The nursing faculty in nursing schools apart from educating the students in professional basics should communicate with the students and be aware about the different levels of emotional maturity in

students. The instructors should help grow the students' emotional intelligence, using methods like reflecting experiences, mentorship, modeling, growing self-consciousness, empathizing, communicating, and role playing, writing daily events and brief reports of tasks, and practicing the speaking skill. [33]

### **Limitations of the study**

Our study was a self-reported assessment prone to response bias and reflected the EI of students in an institution of a single university. All the participants in our study comprised of females. Although the study was conducted among the professional nursing students, representing a part of the budding nursing professionals, their views may not correspond to that of all the nursing students enrolled in various universities spread across the nation and should be extrapolated with caution. Hence for increased generalizability, the future studies should be longitudinal in nature and should encompass larger samples of all the genders covering different universities across the country. The studies should also evaluate the socio economic factors that might influence EI.

### **Recommendations**

- The response bias which creeps into the self-reported assessment scale of EI as used in our study can be overcome by assessment of students by their peers and the teaching staff.
- This study opens vistas for designing more robust tools to measure various components of EI in Indian scenario.
- In view of the challenging nature of job and patient centered services it is necessary to assess the EI of the candidates during the admission process for nursing course, so that professional standards of nursing education are maintained.
- The students and the faculty staff of nursing institutions should be exposed to structured soft skills training regularly by means of seminars and workshops.

## CONCLUSION

A positive relationship existed between various lifestyle factors, the emotional intelligence and the academic achievement in our study among nursing students. It is learned from nursing literature that nurses' ability to manage their own emotions and to understand those of their patients is an asset in providing patient centric care.<sup>[34]</sup> Therefore the teaching of EI should be stressed more in the nursing education. The learning of EI is not a cook book approach but it is a quality that can be learned and taught throughout life. In turn EI can help them deal with their emotions and reduce the incidence of stress which in turn shall benefit them in patient care. Clearly this is an arena which warrants further research. Hence in an ever challenging, decision making work scenario in which nurses live, the amalgamation of emotions and intellect shall go a long way in improving nursing care and patient outcomes.

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