# **Influence of Learning Style and Emotional Intelligence in the Academic Performance of Undergraduate Nursing Students**

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### Abstract

Background: Learning style and emotional intelligence are identified to have impact on the academic performance of the students. Teachers can identify the learning style of the students in the beginning of the program which will broaden their perspective of the diversity in learning style within the same classroom and thereby plan efficacious teaching strategies in alignment with the student preferences. Nursing is a field dealing with patients and require a systematic approach to manage the emotional demands. An emotionally intelligent nurse is bestowed with the ability to effectively blend thoughts and feelings in order to create and sustain more mutually respectful relationships with her patients and also makes optimal decisions. Learning style and emotional intelligence poses as vital concepts to prepare nursing students as professional nurses. The favourable feature of Learning style and emotional intelligence is that both concepts can be measured using appropriate tools and be learned and adapted.

Materials and Methods: The present study employed a descriptive cross sectional study design. The data were collected from the undergraduate nursing students in the age group of 17 to 25 years and completed a minimum of six months nursing training and chosen by consecutive sampling technique. A total of 310 undergraduate nursing students were selected from two Colleges of Nursing in South India. The tools used for data collection were the demographic characteristic proforma, Kolb's Learning Style Inventory version 3.1 (KLSI 3.1), EQ-i 2.0 and Academic profile. After obtaining written consent, the tools were self administered.

**Results**: The dominant learning style among the undergraduate nursing students was observed to be diverging. The mean emotional intelligence of the study participants was 406.33 (max score:518). No statistical significant relationwas seen between learning style of undergraduate nursing students and their academic performance. Also, it was observed that there exists no significant association between learning style of undergraduate nursing students and their emotional intelligence. However there was a positive correlation between emotional intelligence of undergraduate nursing students and their academic performance (r=0.390; p<.001).

Conclusion: The present study highlights the different learning styles of nursing students. Different teaching strategies would foster development of learning in different ways. Hence there is a strong recommendation to incorporate evaluation of the learning styles of the students so that various methods of teaching can be incorporated accordingly. Further, the study pinpoints the significance of emotional intelligence in the academic success of the undergraduate nursing students. As nursing profession deals with the caring relation, there is a requirement to display appropriate emotions to convey the caring attribute. Different teaching strategies would foster development of learning in different ways and integrating emotional intelligence in a systematic manner would uplift the profession and also the quality of the care rendered.

**Key Word**: academic performance, emotional intelligence, learning style, demographic characteristics, undergraduate nursing students.

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# I. Introduction

Nursing involves diverse group of students.Students learn in different ways. Dunn and Dunn identified 21 characteristics that influence the learning of individual<sup>1</sup>. These preferred approach is the learning styles. Learning style is "the unique way in which a person perceives, interacts with, and responds to a learning situation". These diversities throw an insight into the challenges in the process of instruction and teaching. When mismatches exist between learning styles and teaching styles, students tend to be inattentive and perform poorly<sup>4,5</sup>. An appropriate learning environment raises successful students. The nursing educators have to integrate variety of teaching strategies in imparting knowledge to achieve the learning outcomes. Hence, recognizing the learning styles, generates an insight necessary for teachers to build a range of learner centered

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innovative teaching strategies to offer opportunities to the learner to augment their reflective trends in learning and make a profound contribution.

Nursing visualises a holistic approach to patient care involving physical, mental, psychological, intellectual, social, and spiritual requirements. In order to provide the all-inclusive care, nursing education should prepare nurses' and mould them in a way to express their emotions meaningfully and to display appropriate empathy towards others' with whom they deal<sup>3</sup>. Emotional intelligence is thought to be significant in achieving good interpersonal relationships. An emotionally intelligent person can critically analyze situations and apply critical thinking ability, incorporate knowledge into action at life's crucial instances and act instantly and intelligentlywhich is a vital ingredient be a successful nurse. Developing an insight into the concept of emotional intelligence, by and large has a greater influence on the students' learning than just the intelligence quotient.

From time immemorial, the outcome of training is measured in terms of academic excellence. Goleman, the author of "Emotional intelligence" has described in his book on the personal and professional life of ninety five Harvard students from classes in the 1940s who were observed through their middle age<sup>6</sup>. Not all the men who scored high test scores were successful in terms of salary, productivity or status in their field. Alarmingly, many of them did not enjoy life satisfaction, happiness with friendship, family and romantic relationships. Goleman brought to limelight that academic scores do not prepare a person to face fluctuations in life

Studies on emotional intelligence and learning style have shown improvement in the students' learning outcome<sup>7</sup>. Further, there is evidence that these components are vital for nursing students to be successful in their professional career. However there is limited empirical evidence in the Indian context, hence the current study was taken with the purpose to examine the influence of learning style and emotional intelligence in the academic performance of undergraduate nursing students.

#### II. Material And Methods

### Design and sampling

Adescriptive cross sectional study design was used to explore the influence of learning styles and emotional intelligence on the academic performance of the undergraduate nursing students. The sample was selected using consecutive sampling from two Colleges of Nursing in South India. The sample size was estimated to be 306 based on previous study<sup>7</sup>.

### Data Collection Instrument

The demographic characteristic proformawas used to assess the sample characteristics. Kolb's Learning StyleInventory version 3.1 (KLSI 3.1)was used to identify the learning style of the undergraduate nursing students. No modification was performed to the tool. In the present study reliability of the KLSI 3.1 was established by test retest method and was observed to be 0.76 and 0.82 respectively for AC-CE and AE-RO. This finding was in conformity with the values found in literatures. EQ-i 2.0was used to identify the emotional intelligence of the undergraduate nursing students. In the present study, reliability of the EQ-i 2.0 tool was examined on the scores obtained on emotional intelligence and composite scale using Cronbach's Alpha. The obtained alpha coefficient for the emotional intelligence and composite scale was 0.86 which is very high and indicates strong internal consistency of the tool. Further the literatures showed that EQ-i 2.0 is a well validated and normed instrument. Academic Profilecollected information on the academic performance of the students

### Data Collection Technique

The investigator obtained permission to conduct the study from the Research Committee of the two colleges where the study was conducted. After obtaining the permission, the Undergraduate nursing studentswho completed more than six months in the Bachelor of Science in nursing program and in the age group of 17-25 yearswere gathered in a classroom. After explaining the purpose of the study, written consent was obtained from the students who were willing to be a part of the investigation. Further the investigator assured the participants of the confidentiality of the data collected affirming that the information would be used solely for the research purpose and no personal identity would be obtained. A hard copy of the self-administered "demographic characteristic proforma" and "Kolb's Learning Style Inventory" were provided to the study participants for data collection. EQ-i 2.0 was an online tool and the participants were invited by the researcher to collect data on emotional intelligence by sending the link provided by Multi Health System (MHS) to the e-mail ID's provided by the participants. According to the guidelines set by the author, the completed data were analysed by MHS and the investigator was able to access the scored data by logging into the MHS website. Further the investigator obtained the academic performance of the participants from the academic records of the individual students.

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To find out the extent of difficulty and ambiguity in conducting the main study and to estimate the time taken to complete the tools, pilot study was conducted on 40 undergraduate nursing students from a different group who were not included in the main study. The tools and study design were found to be feasible

### III. Results

In the present study, data were collected from 326 undergraduate nursing students, sixteen tools were found to be incomplete, hence only data from 310 participants were included for analysis. Among the 310 undergraduate nursing students, majority (60.6%) were less than or equal to 20 years of age. Gender wise distribution showed that majority (96.5%) were females. Majority (55.2%) of students had their high school education in private institution. The medium of instruction at high school of majority (62.3%) of the undergraduate nursing students was English. The undergraduate nursing students were from different years in the Bachelor of Science in nursing program among them maximum (30.3%) students belonged to IV year. Further the data also showed that majority (88.7%) of the undergraduate nursing students joined the Bachelor of Science in nursing program by their own choice.

# Learning style of undergraduate nursing students

The data obtained following the administration of Kolb's learning style inventory (KLSI 3.1) identifies four distinct learning styles which include, accommodating, diverging, converging and assimilating.

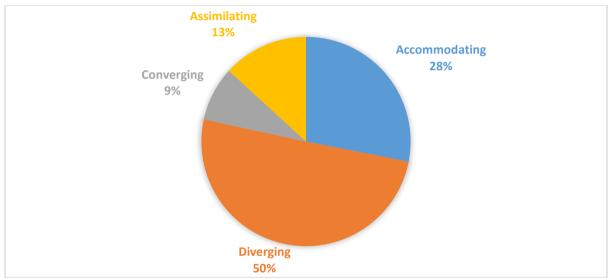


Fig. 1: Learning styles of the Undergraduate Nursing students

Above figure depicts that majority (50%) of the study participants were of diverging learning style, which was revealed as the dominant learning style among the undergraduate nursing students.

### Emotional Intelligence of undergraduate nursing students

The total emotional intelligence score gives a general indication of the emotional intelligence of the study participants. To closely analyze emotional intelligence, and to pin point specific strengths and weaknesses in areas of emotional intelligence, the composite scales of emotional intelligence were also analysed and is presented in Table 1.

<b>Table 1:</b> Emotional Intelligence and	Composite Scales Scores of	Undergraduate Nursin	ngStudents (N=310)

Emotional Intelligence and composite scales	Mean	Median	Minimum	Maximum
Emotional intelligence	406.33	402	306	518
Composite scales				
Self-perception	89.91	90	55	119
Self-expression	74.17	74	51	100
Interpersonal	84.46	84	45	114
Decision making	79.91	80	57	103
Stress management	77.87	77	56	106

In table 1, the scores on the composite scales of emotional intelligence demonstrates that the undergraduate nursing students scored highest in self-perception (mean - 89.91; median- 90).

### Academic performance of undergraduate nursing students

The obtained academic scores of the participants was taken for analysis after computing the percentage of the aggregate scores obtained in all the subjects in the respective year of study in the summative evaluation and the distribution of students based on their academic performance is presented in Table 2.

**Table2:** Academic Performance of the undergraduate Nursing Students (N=310)

Academic Performance	Frequency	Percent	Mean	Standard Deviation
<50	21	6.8		
50-60	96	31.0	62.31	7 72
60-70	145	46.8	02.31	1.12
70+	48	15.5		

Table 2 demonstrates that the mean academic scores of the undergraduate nursing students is 62.3 and majority (93.3%) of the undergraduate nursing students scored above 60% aggregate marks.

# Relationshipbetween learning Styleof undergraduate nursing students and their academic performance

Academic performance under each learning style was compared to observe the relation and the statistical significance was tested using ANOVA and the findings are presented in table.3.

**Table 3:** Relation between Learning Style of Undergraduate Nursing Students and their Academic Performance (N=310)

Learning Style	N	Mean	Standard Deviation	df	F	p value
Accommodating	87	63.76	7.14			
Diverging	156	61.88	7.58	3		.182
Converging	26	60.65	10.09		1.633	
Assimilating	41	61.88	7.59			

Analysis showed that there was negligible dispersion between academic performance and learning style amongst accommodating, diverging and assimilating learning styles, whereas, dispersion was observed to be more in academic performance and learning style among undergraduate nursing students who possessed converging learning style. However it is not statistically significant (p> .05)

# Relation between learning style and emotional intelligence of undergraduate nursing students and their academic performance

The relation between emotional intelligence of undergraduate nursing students and their academic performance was computed using Pearson product moment correlation coefficient. The relation between emotional intelligence of undergraduate nursing students and their academic performance had a positive correlation (r = .39, p < .000). Study findings also highlight that there exists no association between learning style of undergraduate nursing students and their emotional intelligence. Similarly statistical significant relationship was seen between academic performance and the composite scales of emotional intelligence ie. self perception (r = .40, p < .000), self expression (r = .18, p < .001), Interpersonal (r = .27, p < .000), decision making (r = .31) p< .000 and stress management (r = .26, p < .000).

# Relation between learning style, emotional intelligence and academic performance of the undergraduate nursing students and their demographic characteristics

The analysis showed predominance of diverging learning style throughout the years of Bachelor of Science in nursing program, however there exists no significant association between the other demographic characteristics and their learning style. It was also noted that emotional intelligence showed statistical significant relation for age (p<.01) and year of program (p<.05). Furtherdemographic characteristics of undergraduate nursing students and academic performance showed that academic performance of undergraduate nursing students who are more than 20 years of age was greater than students less than 20 years of age. The result was statistically significant (p<.001) and indicates that academic performance increases with increase in age. The analysis also exhibited statistically significant relation between academic performance and medium of instruction at high school (p<.001). There was a statistical significant relation between year of program and academic performance (p<.001).

### IV. Discussion

The mean age of the study participants was 20 years (SD=1.36). However studies have reported that the mean age of nursing students was 29 years (SD =6.5)<sup>8</sup>. This difference in age could probably be attributed to the reason that in India, students join professional courses soon after high school education.

In the present study, majority (96.5%) of the study participants were females. Studies conducted on nursing students have identified that majority of the study participants were females<sup>8,9</sup>. These findings can be related to the reason that nursing, all over the world is considered as a "women's occupation", and hence is dominated by females.

### Learning styles of undergraduate nursing students

Findings in the present study showed that the dominant learning style of majority 50.3% of undergraduate nursing students was diverging that was consistent with the findings in the literature<sup>7,10,11</sup>.

The findings observed in the present study is consistent with the description by Kolb about diverging learners as being innovative, imaginative, oriented, interested in people, and empathize with people <sup>12</sup>. Further Kolb has specified that diverging learners view concrete situations, analyze from various perspectives and finally arise at conclusions. From this view point of the description of the features of diverging learners, dominance of diverging learning style amongst the undergraduate nursing students in the present study is appropriate as the profession deals with people and an empathetic and intuitive characteristic features is necessary in nursing students to be a professionally competent nurse.

# Emotional intelligence of undergraduate nursing students:

The emotional intelligence score of the study participants ranged from 306 to 518 with a mean score of 406.33. The reported studies on emotional intelligence showed varied range of scores obtained by the nursing students <sup>8,12,13,14</sup>. The difference observed in the score obtained could probably be attributed to the different tools of emotional intelligence used and also different versions of the EQ-i tool used.

In the present study, out of five composite scales of emotional intelligence, the undergraduate nursing students scored highest under the self-perception composite scale. Similar findings was evident in reported studywhich identified highest mean score among the participants was for self awareness component <sup>10</sup>. The tool used in the study was different but determines the same concept. It has also been reported that the baccalaureate nursing students scored highest in interpersonal and stress management scales <sup>16</sup>. Every situation in the health care scenario poses a stress, due to which nurses tend to use their emotions to facilitate thinking to offer possible solutions. Hence an understanding of the implication of emotions in themselves and others would help them to manageand handle inevitable reactions that can arise during complex interactions with patients and other health care team members within the chaos that permeate the health care system.

#### Academic performance of undergraduate nursing students

The findings in the present study showed that 62.3% of the undergraduate nursing students scored above 60% aggregate marks. In comparison to the present study, various research studies have reported variations in the average scores in nursing students 8,17,18,19. It can be observed that there is a difference in the presentation of academic score. Some of the educational systems (eg. India) use raw score to calculate the academic scores, whereas some (eg. USA) use the Grade Point Average (GPA).

# Relation between learning style and emotional intelligence of undergraduate nursing students and their academic performance

Findings in the study showed that there exists no relationship between learning style preference and academic achievement(F=1.633; p=.182). Similar findings were reported in previous studies<sup>7,20</sup>. The findings could probably be attributed to the need touse appropriateteaching strategies or approaches like lectures, discussion, problem based learning, team based learning, essays, seminars, quizzes, demonstration, clinical simulations etc to match them to the different learning styles of the students.

Findings in the present study also highlights a significant positive correlation between emotional intelligence of undergraduate nursing students and their academic performance (r=0.390; p < .001). Similarly, several studies have shown a significant correlation indicating that emotional intelligence as a predictor of academic success  $^{8,14,19,21,22,23,24,25}$ . This findings highlight the need to include emotional intelligence skill training in nursing curriculum to improve academic success.

Findings in the present study also showed that learning style of undergraduate nursing students and their emotional intelligence are independent of each other. However there has been reports of significant correlation existing between emotional intelligence and learning style  $(p=0.05)^{26}$ . This difference in findings could be probably due to the different tools used for data collection.

# Relation between learning style, emotional intelligence and academic performance of undergraduate nursing students and their demographic characteristics

It was observed that, learning style was independent of age, gender, high school education, medium of instruction at high school of undergraduate nursing. Majority of studies reported a relation between learning style and gender of students<sup>11,27,28</sup>. The difference in the findings related to gender can be associated to the context of cultures, as majority of the study participants were females and females probably learn through feelings.

The findings in the present study showed significant association between age of undergraduate nursing students and their emotional intelligence. Studies have shown that emotional intelligence increased with age <sup>9,27</sup>. The findings in these studies can probably be linked to the maturity obtained during the exposure to the clinical experience in the Bachelor of Science in nursing program that has enabled the students to improve their ways of coping with the stress of patient care.

In the present study each successive year of program scored higher on the emotional intelligence. Emotional quotient of year four students were higher than year one students in the nursing program<sup>16</sup>. The findings here is not surprising as nursing curriculum involves the clinical component, where by the undergraduate nursing students are provided exposure to clinical setting from the I year of the program. Continuous exposure to patient care must have probably established effective ways to deal and cope with emotions during the clinical exposure to patient care.

The present study also identified that there exists no significant association between gender, high school education, medium of instruction at high school of undergraduate nursing students and their emotional intelligence. The emotional intelligence of boys was higher than girls <sup>25</sup> whereas there was no significant relation between emotional intelligence and gender <sup>13,27</sup>. The difference in the study findings could be associated to the cultural context as the reported studies are conducted in different countries and the different tools used for data collection.

# Relation between demographic characteristics of undergraduate nursing students and their academic performance

There was a statistically significant relation observed between age (t=64.514, p<.001) and academic performance. This finding could possibly be associated to the teaching strategies, learning environment and fact that majority joined the program by their own choice.

The findings in the present study showed a significant relation between medium of instruction at high school (F= 6.369, p<.001) and academic performance. This finding could be associated to being engaged in the language prior to the undergraduate program that could have set the stage to improvement in academic success.

Further the present study showed a significant relation between year of program (F=1.744, p<.001) and academic performance. This finding could be associated to the high school academic performance, having science stream in high school which is an entry requirement into nursing program in India, teaching strategies and clinical experience, predominance of female participants, and choice of entry into nursing.

There exists a significant relation between age, medium of instruction at high school, year of program of undergraduate nursing students and their academic performance.

#### V. Conclusion

This study concentrated on identifying learning style and emotional intelligence on academic performance. Regardless of the findings in the present study, that academic performance was independent of learning style, nurse educators need to have an awareness of the different learning styles in the classroom so that they can remediate their teaching strategies to match the learning styles prevailing in the classroom to improve quality of education and in turn promote academic success. Despite having a predominant learning style, use of variety of teaching strategies promotes the learner to accommodate to alternate ways of learning as all students have a multimodal approach to leaning. The area of emotional intelligence in the current study uncovered emotional intelligence as a strong predictive indicator for academic success. Academic performance is the most significant way of evaluating the success of students and emotional intelligence acts as a catalyst, by enabling to effectively blend thoughts and feelings in order to create and sustain more mutually respectful relationships and make optimal decisions. The concept of emotional intelligence is vital to nursing to provide quality care to patients as well as for being a member of the multidisciplinary team. It is therefore seen that offering training workshops on emotional intelligence and enhancing emotional intelligence skills among students could better prepare them to manage the emotional demands both in classroom and in the clinical setting facilitating academic success thereby improving quality of nursing care rendered.

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