

## Original Research Article

# Investigating the effect of nursing intervention on emotional intelligence, self-esteem and empathy of baccalaureate nursing students undergoing clinical experience in paediatric units-Pilot study (Part-2)

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### ABSTRACT

**Objectives:** The effect of nursing intervention on emotional intelligence (EI), self-esteem and empathy of baccalaureate nursing students undergoing clinical experience in paediatric units.

**Materials and methods:** The present study adopted a quasi experimental repeated measures time series design in which 60 third year baccalaureate nursing students undergoing clinical experience in paediatric units were assigned to either the experimental or control groups. Pre testing of emotional intelligence, self-esteem and empathy was done using the EI (Pc-Sc) scale, Rosenberg self-esteem scale and the Toronto Empathy Questionnaire, respectively. The study intervention included a nursing intervention programme offered in 5 two-hour sessions for 5 days. Post-test was conducted on the 30th and 60th day.

**Statistical analysis:** Two factor repeated measures ANOVA was used for comparison within the group and between the groups.

**Results:** In the experimental group, the mean and standard deviation of the different areas of EI and overall EI score, self-esteem and empathy at post test 2 were higher than the mean and standard deviation at pretest. There was a significant change in the EI, self-esteem and empathy scores in the follow ups in the experimental group, indicating that the nursing intervention was effective in enhancing the EI, self-esteem and empathy of baccalaureate nursing students.

**Conclusion:** Courses to train the emotional intelligence skills, self-esteem and empathy should be included in the nursing curriculum so as to improve nursing standards of both students and nurses in providing quality care to the patients.

*Keywords: Nursing intervention; emotional intelligence; self-esteem; empathy; paediatric units*

### 1. INTRODUCTION

Children go through many developmental stages. It is challenging to establish relationships with young children and make an effort to comprehend and share their feelings. The ability to comprehend children, engage with them, and build relationships must be fostered in nursing students working in paediatric settings. [1] Nursing students find it challenging to use their knowledge when determining how to treat children in a practical context, even if they have a theoretical understanding of the illnesses that affect children. [2] Nursing students must know to handle "soft" people skills. Emotional intelligence skills have been defined as "soft" interpersonal skills.[3] Emotional intelligence is "the ability of the individual to

understand his own feelings, to empathize with the others' emotions, and to regulate their feelings to enrich his life".[4] A collection of skills known as emotional intelligence affects a person's overall capacity to meet environmental demands.[5] According to Goleman, EI encompasses five main elements; self-awareness, self-regulation, motivation, empathy and social skills. **Self-awareness** is being able to read one's emotions, understand their effects, and use intuition to make judgments. **Self-regulation** entails restraining one's emotions and impulses as well as adjusting to the environment as it changes. **Motivation** entails pushing oneself to actively carry out plans and achieve goals while looking beyond the current challenges. **Empathy** is the ability to fully enter another person's mind, to think and feel as they do, and to view the world from their point of view. **Social skills** include the ability to manage other people's emotions and maintain interpersonal relationships. [6] There are several advantages to emotional intelligence in nursing practice. Emotionally intelligent nurses perform much better on the job and in terms of their health. They also experience less job burnout, less work-related stress, less job turnover, and better conflict resolution, coping, and positive adaptation abilities. Additionally, their healthcare outcomes—which include greater care quality and increased patient safety—are much better. [7,8] We should include other people's psychological domains, such as self-esteem, when thinking about emotional abilities. Nurses who have high self-esteem and emotional intelligence are better able to provide emotionally competent nursing care. It has to do with the nurses' professional values, subjective well-being, and job happiness. Additionally, it prevents against job fatigue, bullying at work, anxiety, and depression.[9] To deal with challenges in life, emotional intelligence abilities can be taught and acquired.[10] Workshops, online coaching, soft skill training programmes, reflective learning experiences, supportive supervision and mentorship, modelling, a focus on building self and dialogic relationships, developing empathy, a commitment to emotional competency, and opportunities for working creatively with the arts and humanities, such as self-inquiry, narrative, forum theatre, reflective discussion and writing, and practicing listening can all help students become more emotionally intelligent.[11,12] Findings from various studies have concluded that EI trainings are effective interventions that improve EI.[13,14] According to a study done among university students in Pakistan, interventions can be given to raise students' self-esteem, which will have a good impact on their emotional intelligence.[15] From the beginning to the completion of the curriculum, nursing students' scores on empathy significantly decreased, according to several studies.[16,17] Researchers recommend including training courses that teach empathy skills in the nursing curriculum to improve students' empathy.[18] There are inconsistent findings regarding the effect of nursing interventions in enhancing the emotional intelligence of nursing students. Further, no research is conducted on enhancing the emotional intelligence of nursing students posted in paediatric units. Hence the study aimed to find the effect of nursing intervention on emotional intelligence of baccalaureate nursing students posted in paediatric units.

## 2. MATERIAL AND METHODS / EXPERIMENTAL DETAILS / METHODOLOGY

This research is a part of the pilot study, "Effectiveness of Emotional Intelligence Skill Training on Enhancement of Emotional Intelligence of Nursing Students undergoing Clinical Experience in Paediatric Unit of selected hospitals, Mangalore" whose general objective was to evaluate the effect of emotional intelligence skill training on enhancement of emotional intelligence of baccalaureate nursing students undergoing clinical experience in paediatric unit. This section is the second part of the analysis.

### 2.1 Study Design, Settings and Participants

The present study adopted a quasi experimental repeated measures time series design and was conducted from March to May 2022. Sixty (30 in experimental and 30 in control group), third year baccalaureate nursing students undergoing clinical experience in selected paediatric units of Mangalore, were purposively selected.

### 2.2 Sample size

Sample size was calculated for the main study. Below mentioned sample size calculation was done on the basis of reference study.

### 2.3 Sample size Formula

$N=2(Z_{\alpha}+Z_{\beta})^2 \sigma^2 / d^2$  where  $Z_{\alpha}= 1.96$  at 95% confidence level,  $Z_{\beta}= 0.84$  at 80% power

$\sigma^2$  =Combined standard deviation,  $d$  =Mean difference

With the confidence level of 95% and 80% power with reference to the study, sample size was estimated at 213 in each group. With 10% attrition rate sample size for each group was approximated to 235. For pilot study when  $1/10^{\text{th}}$  of the sample was calculated, it was 23 per group but it was decided to increase to 30 participants in each group for the purpose of accurate statistical analysis.[19]

## 2.4 Eligibility criteria

The study included male and female third year baccalaureate nursing students, undergoing clinical experience in paediatric units in the age group of 17-48 years and those who were willing to participate in the research study.

## 2.5 Exclusion criteria

Baccalaureate nursing students who were not willing to participate in the research study and those who had undergone any other training in emotional intelligence

## 2.6 Data collection methods

Permission of Institutional Ethics Committee (IEC) was taken from A.J.Institute of Medical Sciences and Research Centre (AJEC/REV/291/2019) and written informed consent was taken from all the participants. Permission was obtained from the respective colleges for conducting the study. The purpose of the study was explained to the students and the anonymity and confidentiality of their response was assured. A predesigned, semi structured proforma was used to collect demographic details (age, gender, type of family, order of birth, number of siblings, place of domicile, mother's education, father's education). The EI (Pc-Sc), Rosenberg self-esteem scale, the Toronto Empathy Questionnaire were used to assess emotional intelligence, self-esteem and empathy of baccalaureate nursing students in the experimental and control group. The EI(Pc-Sc) is a standardized scale developed by Dr Sandhya Mehta & Ms Namrata Singh (2013), had 69 items, was a 5-point rating scale having anchors: extremely low competence-1, low competence-2, not sure-3, high competence-4,extremely high competence-5. A high score indicated a high level of EI and a low score indicated low level of EI. The Rosenberg self-esteem scale had 10 items with anchors, strongly agree-3, agree-2, disagree-1 and strongly disagree-0. Higher scores indicated higher levels of self-esteem. The Toronto Empathy Questionnaire had 16 items. It was developed by Nathan Spreng et al. (2009). Five possible modes of responses are provided such as: 0=never, 1=rarely, 2=sometimes, 3=often, 4=always. Higher scores indicated high levels of self-reported empathy while scores below 45 were indicative of below average empathy levels. Emotional intelligence skills were taught to the baccalaureate nursing students (in batches of 20) over 5 sessions (each session of 2 hours) for 5 days using various teaching learning methods like lecture, discussion, team exercise, cooperative learning, situation analysis, role play and motivational videos. Introduction to Emotional Intelligence & Self awareness, Emotional Literacy and Self-Regulation, Dealing with Feelings & Empathy, Communication & Assertiveness, Motivation, Leadership and Anger management were the topics covered from day 1 to day 5. Post test was conducted on the 30<sup>th</sup> and 60<sup>th</sup> day both for the intervention and control group to assess the emotional intelligence, self-esteem and empathy of the baccalaureate nursing students.

## 2.7 Statistical analysis

Data entry and tabulation was done in Microsoft Excel Sheet 2016 and it was analyzed by SPSS 21.0. Comparison within and between the groups was done by using two factor repeated measures ANOVA.

## 3. RESULTS

### 3.1 Sample characteristics

Data in table 1 shows that most (96.7%) of the samples in the experimental group were in the age group of 20-21 years. Highest percentage (60%) of the samples in the control group were in the age group of 20-21 years. All samples (100%) in the experimental group were female and most (93.3%) of the samples in the control group were female. All samples (100%) in the experimental group belonged to nuclear family and most (86.7%) of the samples in the control group belonged to nuclear family. In the experimental group highest percentage (60%) of the samples were first born. In the control group, highest percentages (46.7%) were first born. In the experimental group majority (60%) of the samples had one sibling. Similarly in the control group, most (50%) percentage had one sibling. In the experimental group, majority (76.7%) of the samples came from rural area. Similarly in the control group, majority (66.7%) of the samples came from rural area.

**Table 1: Demographic characteristics of the participants**

Demographic variables		Experimental group N(%)	Control group N(%)
Age (years)	20-21	29(96.7)	18(60)
	22-23	1(3.3)	12(40)
Gender	Male	0	2(6.7)
	Female	30(100)	28(93.3)
Type of family	Nuclear	30(100)	26(86.7)
	Joint	0	0
	Extended	0	0
	Single parent	0	0
Order of birth	Only child	1(3.3)	2(6.7)
	First	18(60)	14(46.7)
	Second	10(33.3)	10(33.3)
	Third or higher	1(3.3)	4(13.3)
Number of siblings	Nil	1(3.3)	2(6.7)
	One	18(60)	15(50)
	Two	11(36.7)	10(33.3)
	Three	0	0
	Four and more	0	0
Place of domicile	Urban	7(23.3)	10(33.3)
	Rural	23(76.7)	20(66.7)

### 3.2 Effect of nursing intervention on emotional intelligence, empathy and self-esteem scores of baccalaureate nursing students

Data in table 2 shows that, in the experimental group, the mean and standard deviation of the different areas of EI and overall EI score at post test 2 were higher than the mean and standard deviation at pretest. Whereas in the control group, the mean and standard deviation of the different areas of EI and overall EI score at post test 2 were lower than the mean and standard deviation at pretest. Scores are interpreted as higher the score, higher the EI.

**Table 2: Mean and standard deviation of pre and post test emotional intelligence scores of baccalaureate nursing students undergoing clinical experience in paediatric unit**

Areas of EI	Pre/post	Experimental group		Control group	
		Mean	SD	Mean	SD
Self awareness	Pre	45.33	4.44	41.7	5.33
	Post 1	42.27	6.69	38.77	7.43
	Post 2	46.4	6.01	40.67	9.94
Emotion regulation	Pre	53.10	5.59	49.10	7.67
	Post 1	53.43	7.18	47.7	10.8
	Post 2	56.27	8.26	47.7	11.92
Self motivation	Pre	34	4.3	30.83	5.02
	Post 1	33.80	5.44	29.37	6.57
	Post 2	34.7	4.8	28.97	8.082
Social awareness	Pre	34.27	4.35	31.73	6.22
	Post 1	36.33	4.01	31.77	6.12
	Post 2	36.33	4.01	31.77	6.12
Emotional receptivity	Pre	45.8	5.28	43.13	4.54
	Post 1	45.87	5.24	42.97	7.17
	Post 2	47.87	6.01	43.47	7.72
Overall EI	Pre	264.23	22.35	244.47	26.08
	Post 1	260.8	25.54	237.2	33.54
	Post 2	274.37	30.53	237.58	44.58

Two factor repeated measures ANOVA in table 3 shows that there is a significant change in the follow ups in the experimental group, with  $P=.01$  and also there is significant difference between the groups ( $P=.00$ ), indicating that the nursing intervention is effective in enhancing emotional intelligence scores of baccalaureate nursing students.

**Table 3: Effect of nursing intervention on emotional intelligence of baccalaureate nursing students using two factor repeated measures ANOVA.**

Parameter		F value	df	P value
Self awareness	Comparison within the group	6.034	2 and 116	.00
	Comparison between the groups	10.158	1 and 58	.00
Emotion regulation	Comparison within the group	0.879	2 and 116	.41
	Comparison between the groups	2.982	1 and 58	.08
Self motivation	Comparison within the group	0.549	2 and 116	.57
	Comparison between the groups	2.978	1 and 58	.09
Social awareness	Comparison within the group	3.387	2 and 116	.03
	Comparison between the groups	13.52	1 and 58	.00
Emotional receptivity	Comparison within the group	1.154	2 and 116	.31
	Comparison between the groups	2.364	1 and 58	.06
Overall EI	Comparison within the group	3.48	2 and 116	.01
	Comparison between the groups	17.502	1 and 58	.00

Data in table 4 shows that, in the experimental group, the mean and standard deviation of self-esteem and empathy scores at post test 2 were higher than the mean and standard deviation at pretest. Scores are interpreted as higher the score, higher the self-esteem and higher the empathy.

**Table 4: Mean and standard deviation of pre and post empathy and self-esteem scores of baccalaureate nursing students undergoing clinical experience in paediatric unit**

Parameter	Pre/post	Experimental group		Control group	
		Mean	SD	Mean	SD
Self-esteem	Pre	18.9	3.85	15.63	4.26
	Post 1	18.6	3.94	17.07	4.96
	Post 2	21.77	5.73	17.03	4.84
Empathy	Pre	43.10	7.1	42.23	7.64
	Post 1	43.13	7.65	39.3	10.7
	Post 2	46.8	9.28	41.97	8.12

Two factor repeated measures ANOVA in table 5 shows that there is a significant change in the self-esteem scores in the follow ups in the experimental group, with  $P=.00$  and also there is significant difference between the groups ( $P=.00$ ), indicating that the nursing intervention is effective in enhancing self-esteem scores of baccalaureate nursing students. Also there is a significant change in the empathy scores in the follow ups in the experimental group, with  $P=.03$ , indicating that the nursing intervention is effective in enhancing empathy scores of baccalaureate nursing students.

**Table 5: Effect of nursing intervention on self-esteem and empathy of baccalaureate nursing students using two factor repeated measures ANOVA.**

Parameter		F value	df	P value
Self-esteem	Comparison within the group	7.585	2 and 116	.00
	Comparison between the groups	10.012	1 and 58	.00
Empathy	Comparison within the group	3.414	2 and 116	.03
	Comparison between the groups	3.539	1 and 58	.06

#### 4. DISCUSSION

In the present study, the mean emotional intelligence scores of the baccalaureate nursing students were higher in the post test than in the control group. In a research by Munir et al., personnel working at various levels in Pakistan's top private hospital in Islamabad saw an increase in emotional intelligence from an average level of 2.6697 to 2.8986.[20] This is substantiated by a study done among first-year nursing students at Adnan Menderes University in Turkey, where the mean emotional intelligence scores of the training group were higher after training (233.53±42.14) than before training (186.19±34.54).[21] Results of another study conducted among undergraduate students in UAE support the above findings.[22]

In the current study, there was a significant change in the post intervention emotional intelligence scores of the baccalaureate nursing students. Similar results were found in the study conducted by Munir.[20] In a study conducted at Manipal University, the overall emotional intelligence scores of baccalaureate nursing students increased after the emotional intelligence improvement programme.[23] In contrast to the findings above, post-intervention emotional intelligence levels of first-year baccalaureate nursing students in Iran showed no appreciable difference. There isn't much opportunity for students to exercise their EI abilities, which is the cause. [24]

In the present study, the mean self-esteem scores of the baccalaureate nursing students were higher in the post test than in the control group after the nursing intervention. Similar findings are seen among nurses working in Pune, post assertiveness training programme.[25] Among students at the Faculty of Nursing, Alexandria University, similar findings were observed after an assertiveness training programme.[26] Following emotional intelligence training, adolescents under the supervision of the Behzisti organization in Tehran showed a significant difference in test scores on the general self-esteem measure between the experimental and control groups.[27] Following an assertiveness training programme, contradictory results were observed in the self-esteem scores of nursing students enrolled in the bachelor nursing programme at the nursing faculty in Jordan.[28]

In the current study, there was a significant change in the post intervention self-esteem scores of the baccalaureate nursing students. Similar findings were seen in studies conducted by Kanade and Hamoud.[25,26] Similar findings were seen in a study conducted among adolescents.[27] Emotional intelligence training also resulted in significant changes in the post test scores of self esteem among working child mothers.[29]

The researchers found that mean empathy scores of the baccalaureate nursing students were higher in the post test than in the control group. Following the emotional intelligence training intervention, the mean empathy scores of fourth-year nursing students at the Faculty of Nursing Damanhour University increased from 67.97±4.99 to 71.45±6.85 in the intervention group. [12] At the pre- and post-tests following an empathy training programme, the nurses in the experimental group had mean empathy scores of 146.7 ±38.8 and 169.5 ±22.1, respectively.[30]

Significant change was observed in the empathy scores of the baccalaureate nursing students post nursing intervention. These conclusions are confirmed by a study in which there was a statistically significant difference between the study group's empathy mean score before and after intervention ( $t=2.966$ ,  $p=0.006$ ).[12] After undergoing an empathy training programme for nurses working in paediatric clinics in Turkey, the experimental group considerably outperformed the control group on the post-test.[30]

#### 5. CONCLUSION

The nursing intervention was found to be effective in enhancing the emotional intelligence, self-esteem and empathy of the baccalaureate nursing students undergoing clinical experience in paediatric units. The paediatric nursing educational curriculum outlines the cognitive and technical requirements necessary to train a fully qualified paediatric nurse; however it leaves out the organized development of the emotional intelligence domain in the context of treating sick children. Courses to train the emotional intelligence skills, self-esteem and empathy should be included in the nursing curriculum so as to improve nursing standards of both students and nurses in providing quality care to the patients.

## CONSENT

All authors declare that 'written informed consent was obtained from the participant for publication of this original research article. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal'.

## ETHICAL APPROVAL (WHERE EVER APPLICABLE)

Institutional ethics committee approval was received (AJEC/REV/291/2019)

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