



# Effect of Nursing Intervention on Emotional Intelligence, Self-esteem and Empathy of Nursing Students Undergoing Clinical Experience in Paediatric Units-Pilot Study (Part-2)

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## Authors' contributions

This work was carried out in collaboration between both authors. Authors PSC and TLM designed the study. Author PSC carried out literature review and wrote the protocol. Author PSC collected the data, performed the statistical analysis and wrote the first draft of the manuscript. Both authors read and approved the final manuscript.

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## ABSTRACT

**Background:** Nurses working in paediatric settings face a number of challenges. Nurses can be emotionally drained while they see their young patients suffer. Therefore, nurses need to be emotionally intelligent.

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**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 adaption 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. MATERIALS AND METHODS

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<sup>th</sup> 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

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 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.

### 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.

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.

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.

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.

## 4. DISCUSSION

Emotional intelligence in nursing practice fosters a trusting environment among the healthcare team, supports therapeutic nurse-patient

relationships, aids nurses in understanding their own emotions and recognizing when they feel overwhelmed or burned out, fosters effective communication among healthcare team members and between patients and providers, makes it simpler to manage and resolve conflicts

in the workplace, and creates an environment that is conducive to learning. [20] Research studies point out the importance of teaching EI course to students at the undergraduate level in order to develop appropriate psychosocial competencies [21].

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

Demographic variables		Experimental group N(%)	Control group N(%)
<b>Age (years)</b>	20-21	29(96.7)	18(60)
	22-23	1(3.3)	12(40)
<b>Gender</b>	Male	0	2(6.7)
	Female	30(100)	28(93.3)
<b>Type of family</b>	Nuclear	30(100)	26(86.7)
	Joint	0	0
	Extended	0	0
	Single parent	0	0
<b>Order of birth</b>	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)
<b>Number of siblings</b>	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
<b>Place of domicile</b>	Urban	7(23.3)	10(33.3)
	Rural	23(76.7)	20(66.7)

**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
<b>Self awareness</b>	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
<b>Emotion regulation</b>	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
<b>Self motivation</b>	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
<b>Social awareness</b>	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
<b>Emotional receptivity</b>	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
<b>Overall EI</b>	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

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

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

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

Parameter	Pre/post	Experimental group		Control group	
		Mean	SD	Mean	SD
<b>Self-esteem</b>	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
<b>Empathy</b>	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

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

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

In research conducted 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. The training scaled over a period of five months but only one follow up was performed [22]. 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). Here the training was provided to 72 freshmen over 10 sessions, each lasting for a duration of 60-75 minutes. After the post test, the same training was provided to the control group as well, unlike the current study [23]. Results of another study conducted among first year undergraduate students in UAE support the above findings. The

EI course to the intervention group comprised of sessions on self-awareness, self-management, motivation, empathy and social skills [21]. The results from the present study also support the findings from previous studies and conclude that there is a difference in the emotional intelligence scores of the baccaulaerate nursing students after the nursing intervention in the experimental group.

In the current study, there was a significant change in the post intervention emotional intelligence scores of the baccaulaerate nursing students. Similar results were found in the study conducted by Munir [22]. In a study conducted at Manipal University, the overall emotional intelligence scores of baccaulaerate nursing students increased after the emotional intelligence improvement programme. Twenty-

seven first year nursing students, who scored low and very low in EI were provided training for 5 days for a duration of 2 hours each and post test was conducted on the 30<sup>th</sup> day, from the 5<sup>th</sup> day of the intervention. Students adopted better coping strategies like positive re-appraisal and seeking social support post the EI enhancement programme [24]. With the support from the above findings, the researchers in the current study can conclude that the nursing intervention was effective in enhancing the emotional intelligence scores of the baccalaureate nursing students. In contrast to the findings above, post-intervention emotional intelligence levels of 69 first-year baccalaureate nursing students in Iran showed no appreciable difference. The emotional intelligence education was delivered to the students in eight two-hour sessions for eight subsequent weeks. The reason for such findings could be that the first-year students were not exposed to the clinical area and hence did not find the need in learning and executing the EI skills [25].

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. Additionally, there was a significant change in the post intervention self-esteem scores of the baccalaureate nursing students. Similar findings were seen among nurses working in Pune, post assertiveness training programme. Sixty nurses were selected conveniently (30 in the intervention and 30 in the control group). The assertiveness training was provided over 8 sessions for a period of 2 months through lectures interweaved with group discussion, brainstorming, and examples from real life, modelling, role playing / behavioural rehearsal, getting participants' feedback, providing feedback, providing corrective feedback, and assigning homework. Post-test was conducted at the end of the training [26]. Among students at the Faculty of Nursing, Alexandria University, similar findings were observed after an assertiveness training programme. Out of eighty nursing subjects, 40 were randomly assigned to the study group and 40 to the control group. The training programme was found to increase the assertiveness and self-esteem of nursing students post intervention and one month after the programme [27]. Following emotional intelligence training, adolescents (n=25) under the supervision of the Behzisti organization, 50 girls living in boarding centers in Tehran showed a significant difference in test scores on the

general self-esteem measure between the experimental and control groups (n=25), one week and 3 months after the intervention [28]. Emotional intelligence training also resulted in significant changes in the post test scores of self-esteem among working child mothers in Shahrekord [29]. Therefore, it can be concluded that the nursing intervention was effective in enhancing the self-esteem scores of nursing students. On the contrary, following an assertiveness training programme, self-esteem scores did not show a significant rise among 121 nursing students enrolled in the bachelor nursing programme, selected randomly from different academic years, at the nursing faculty in Jordan. But a positive correlation was found between assertiveness and self-esteem [30].

The researchers found that mean empathy scores of the baccalaureate nursing students were higher in the post test than in the control group. Additionally, significant change was observed in the empathy scores of the baccalaureate nursing students post nursing intervention. Emotional intelligence training intervention was provided to 29 fourth year students enrolled in Psychiatric & Mental Health Nursing course at the Faculty of Nursing Damanhour University, to see its effect on their emotional intelligence and empathy. Control group (n=29) was selected from community health nursing students. Ninety minutes intervention was provided to the nursing students every week for a period of four weeks. Mean empathy scores of fourth-year nursing students increased from  $67.97 \pm 4.99$  to  $71.45 \pm 6.85$  in the intervention group after 4 weeks. 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]. Similar findings were found in a study where an empathy training was provided to 17 nurses from the adolescent, nursing, and Infection services in Turkey. Five sessions of 4 hours duration each were delivered over 5 weeks through group and creative drama techniques. At the pre- and post-tests following an empathy training programme, the nurses in the experimental group had mean empathy scores of  $146.7 \pm 38.8$  and  $169.5 \pm 22.1$ , respectively. After undergoing an empathy training programme, the experimental group considerably outperformed the control group on the post-test [31]. Hence it can be concluded that the nursing intervention was effective in enhancing the empathy scores of nursing students in the present study.

## 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.

## 6. LIMITATIONS AND RECOMMENDATIONS

Data were collected by a self-report questionnaire with a potential risk of social desirability answers. Follow up of the intervention could be done after 6 months to see the retention of emotional intelligence skills among the baccalaureate nursing students.

## CONSENT AND ETHICAL APPROVAL

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.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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