

Original Article

The Impact of Improving Emotional Intelligence Skills Training on Nursing Students' Interpersonal Relationship Styles: A Quasi-experimental Study

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Abstract

Purpose: The quasi-experimental study investigates the impact of improving emotional intelligence skills training given to nursing students on their emotional intelligence levels and interpersonal relationship styles in western Turkey.

Methods: Totally 72 students participated in the research, 36 of whom were in the training group and 36 of whom were in the control group. The students in the training group were given a 10-session emotional intelligence training with interactive content, each of which lasted 60–75 minutes.

Results: It was found that there was a significant difference between the post-training emotional intelligence mean scores of training (233.53±42.14) control (199.40±30.22) groups students ($t:3.912$; $p=0.000$). It was also found that post-training interpersonal relationship style mean scores of training group students (139.19±12.89) were higher when compared to pre-training (135.11±10.58) and that this difference was statistically significant ($t: -2.134$, $p=0.040$). It was revealed that post-training emotional intelligence mean scores of training group students (233.53±42.14) were higher when compared to pre-training (186.19±34.54) and that this difference was statistically significant ($t:-8.719$; $p=0.000$).

Conclusions: This study concluded that improving emotional intelligence skills training positively affected the improvement of emotional intelligence and interpersonal relationship styles of nursing students.

Keywords: Emotional Intelligence, Relationship Styles, Nursing, Nursing Students

Introduction

Nursing profession can be regarded as a difficult profession because of the fact that it requires making vital decisions and due to the negative feelings during this process (Benner, Tanner and Chelsa, 1996). Nurses need to have advanced problem solving skills so as to be able to cope with these negative emotions. Improved decision making and problem solving performance of nurses vary depending on their emotional intelligence (McQueen, 2004; Duteau, 2012). In addition to the development of nurses' professional knowledge and skills, it is suggested

that attempts to increase and improve their emotional intelligence should be made (Chang, 2008).

Effective nurse-patient relationships are important in nursing profession, especially in mental health care practices (Akerjordet and Severinsson, 2004; Megens and Van Meijel, 2006; Warelow and Edward, 2007; Hurley and Rankin, 2008). Negative patient behaviors affecting nurses affect the quality of patient interactions, therapeutic co-operation and the outcomes of the treatment (Akerjordet and Severinsson, 2004; Megens and Van Meijel,

2006). When nurses look after their patients, they often come across with their anger, provocation and impatience. It is inevitable that nurses face these situations because of their profession and working conditions. Most of the time nurses do not know how to react and cope with these situations. That's why, most of the nurses may experience burnout.

In the studies conducted with nurses, it was revealed that nurses experienced poor job satisfaction, lack of joy from life, fatigue, headache, eating problems, insomnia, emotional instability and as a result, burnout in their interpersonal relationships with patients (Demir, Ulusoy and Ulusoy, 2003; Gillespie and Melby, 2003; Poncet *et al.*, 2007).

In interpersonal relationship styles, emotional intelligence, which emphasizes the role of emotions is important. According to Mayer *et al.*, emotional intelligence is "the fact that the individual can perceive, identify, understand and identify his feelings and emotions, and use this knowledge as a guide in his thoughts and behaviors" (Mayer, Brackett and Salovey, 2004). Daniel Goleman defines emotional intelligence as "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" (Goleman, 1996). Emotions that form the basis of emotional intelligence provide meaningful information about the person we are in contact with, and motivate the individual by changing his attention, thoughts and behaviors (Bechara, 2004; Caruso and Salovey, 2004; Clore and Huntsinger, 2007). Emotions are influential in the people's way of thinking and problem-solving, coping with change and success (Caruso and Salovey, 2004). Some researchers argue that emotions are as important as logical and intellectual (mentally) thoughts while making decisions and taking action (Appelbaum, 1998; Cadman and Brewer, 2001). It is emphasized that the emotional intelligence of nurses is significant in understanding the patient, managing their emotions and giving care (Evans and Allen, 2002; McMullen, 2003).

Henderson (2001) emphasizes that nurses' responsibility to understand emotions is a requirement of nursing profession, and that nurses' emotional involvement in their approach to the patient and their emotional awareness enhances the quality of care (Henderson, 2001). Nurses with high emotional intelligence skills are

able to capture emotional cues from patients' body language messages and predict their needs and requests. Patients reflect what they experience and how they feel to nurses by their behaviors as the result of the care they receive, and cooperate with nurses for their needs (Gray and Smith, 2009). The fact that nurses are sensitive to the physical and mental needs of the patients and pay attention to all these will provide holistic care. This is, therefore, an important factor in improving the quality of care

Emotional intelligence in the nursing profession guides an increasing tendency towards positive attitudes, adaptation, development of relationships and positive values (Akerjordet and Severinsson, 2007). Emotional intelligence is viewed as a significant feature for building successful nursing leadership, increasing nursing performance, and reducing burnout in nurses (Vitello-Cicciu, 2002).

According to Routson, the researches conducted indicate that nurses with high emotional intelligence have strong self-awareness and high levels of interpersonal relationships, and that they are more likely to be more empathetic and compatible, to establish a bond with the patients, and to meet their needs (Routson, 2010). Nurses with high emotional intelligence are healthy individuals who have higher life satisfaction, who are successful in achieving their goals and who are able to adapt to difficult conditions.

Cadman and Brewer (2001) believe that those who will choose nursing as a profession should be evaluated for emotional intelligence skills before having nursing education and state that interpersonal relationships should be developed during nursing education (Cadman and Brewer, 2001). Besides, according to McQueen (2004), emotional intelligence skills are skills that need to be developed throughout life, not just in nursing education (McQueen, 2004).

It can be understood from some studies conducted that emotional intelligence is open to development (Lynn, 2000, 2002; Boylan and Loughrey, 2007; Eniola and Adebisi, 2007; Chang, 2008; Fletcher *et al.*, 2009; Nelis *et al.*, 2009; Ruiz-Aranda *et al.*, 2012; Mahdavi *et al.*, 2015). There is quite a little number of studies aimed at developing emotional intelligence in our country and no interventional studies have been encountered about nursing and nursing students.

This study was carried out in order to evaluate the effectiveness of improving emotional intelligence skills training given to nursing students on their interpersonal relationship styles.

Hypothesis of the study

H1. When emotional intelligence scores and interpersonal relationship style scores of the students with and without emotional intelligence skills training were compared, the scores of training group students would increase significantly.

Methods

The research is a quasi-experimental study with pre-test – post-test control groups and randomized control, investigating improving emotional intelligence skills training scores of the nurses and their emotional intelligence and interpersonal relationships scores.

Setting

The research was conducted between February 2015 and May 2015 with freshmen nursing students studying at Adnan Menderes University, Aydın School of Health in 2014-2015 academic year.

Participants

The minimum number of individuals to be included in the sample of the study was found 71; an effect size (Cohen $d = 0,3$) of 80% power. The number of samples for equal distribution of groups was determined as 72 with 35 students in the training group and 35 students in the control group.

Randomization

The sample of the research was selected from 252 freshmen studying in Nursing Department in 2014-2015 academic year. The inclusion criterion for the study was determined as; 1) Being in the first year in the nursing department, 2) Having no time problem participating in the study, and 3) Being voluntary to participate in the study. The exclusion criterion for the study was determined as; 1) Having a class or course to improve emotional intelligence skills before. There are not any important changes to methods after trial commencement.

Due to the participation criterion for the study, 100 numbers were determined to prevent possible data loss by simple randomization method on the computer via standard statistics

web page (*Random Number Generator*, 2015). With 100 numbers determined in accordance the inclusion and exclusion criterions in the survey, 72 students were selected according to the number in the class list by means of simple randomization method. After receiving a written consent, the students were randomly assigned into either the training or the control group. For the randomization process, papers written "education" and "control" in were created and selected by the students, and thus, the groups were determined (Figure 1).

Data Collection

The data of the research was collected by means of Personal Information Form developed by the researchers, Bar-On Emotional Quotient Inventory and Interpersonal Style Inventory.

Emotional Quotient Inventory: Bar-On Emotional Quotient Inventory was developed by Bar-On (1997) in order to measure emotional intelligence dimensions, and validity and reliability analyses were performed (Bar-On, 2005, 2006). Bar-On Emotional Quotient Inventory was translated into Turkish language by Acar (2002), and validity and reliability analyses were performed (Acar, 2002). Of the 133 statements included in the inventory, 15 were not included in any of the dimensions but were the ones that measured the tendency of the respondent to fill in the inventory. These statements were removed from the inventory. As a result, an inventory composed of 87 statements measuring a total of 5 dimensions and 15 dimensions under them was created. The Cronbach Alpha coefficient of the dimensions of the 87-statement inventory was found 0.92 (Acar, 2002). In this study, the Cronbach Alpha value of Emotional Quotient Inventory was found 0.94.

Interpersonal Style Inventory: The inventory, developed by Lorr and DeJong (1986), aims to determine the individual's interaction style with others (Lorr and DeJong, 1986). The inventory, originally composed of 300 items, was reduced to 150 items as it took too long to respond. It was found that reliability coefficients varied between 0.72 and 0.89; and test-retest correlation coefficients varied between 0.81 and 0.95. The inventory was adapted to Turkish by Oztan (1994) and in order to create a more useful inventory, the items with the lowest Cronbach Alpha values and the lowest total correlations in each sub-dimension were removed from the

inventory and the 150-item inventory was reduced to 55 items (Oztan, 1994). Thus, an inventory of 55 questions was obtained in which there were 10 dimensions in total and 5 items in each dimension and 5 items in the inventory. In this research, the Cronbach Alpha value of the Interpersonal Style Inventory was found 0.74.

Development of Educational Material

In this study, the students in the training group were given Emotional Intelligence Development Training. This training was provided with a teaching material about the topic prepared by the researchers based on literature. The content of the teaching material was based upon the 5 dimensions in Bar-On Emotional Quotient Inventory, communication skills, body language and the use of emotions in social relationships (Table 1).

Emotional Intelligence Skills Development Training and the studies conducted nationally and internationally were evaluated and various sources were used for developing the content of training the activities involved in it (Lynn, 2000, 2002; Karahan and Ozcelik, 2006; Boylan and Loughrey, 2007; Ulutas and Omeroglu, 2007; Eniola and Adebisi, 2007; Chang, 2008; Yalcin *et al.*, 2008; Yilmaz, 2009; Fletcher *et al.*, 2009; Nelis *et al.*, 2009; Ruiz-Aranda *et al.*, 2012; Mahdavi *et al.*, 2015).

For the content validity of the training materials developed, a total of 8 people; 2 lecturers, 3 expert nurses and 3 expert psychologists were consulted and the materials were reorganized in line with the recommendations.

Intervention and measures

In the first meeting, the training group and control group were greeted and then informed about the purpose of the study. Those who filled in informed voluntary consent forms were included in the study. After the information; personal information form, emotional quotient inventory and interpersonal style inventory that should be filled in before the training were applied to the training and control group students. Following the first session, each session took approximately 60-75 minutes until the tenth session. In each session, a warm-up activity was conducted before the training. Warm-up activities were related with the training of the day and were designed in order to prepare for the training. Warm-up activities were performed by means of role-play, group work, and self-report

methods, and the methods and materials varied according to the content of each warm-up activity. After the warm-up activity, basic theoretical information was presented about session topics. During the presentation, the students were told the topic of the training by means of question-answer and discussions. Following the topics, activities related with the topic to improve emotional intelligence skills were conducted. With the activity, it was aimed to practically reinforce the information provided theoretically. After each session, the session was evaluated. In the 10th session, which was the last session, a general evaluation of the training was conducted with the trainers and students. After the evaluation, the training group students were applied the emotional quotient inventory and interpersonal style inventory. The same content of training was given to the students in the control group after the training. The trainings and the inventories related to the study were conducted in the classrooms of Aydin School of Health by planning appropriate time for the students and the trainer.

Ethical consideration

The research protocol was approved by Adnan Menderes University Faculty of Medicine, Non-Interventional Clinical Research Ethics Committee (Protocol No: 2014/520).

Data analysis

Data of the study was analyzed using IBM SPSS (Statistical Package for Social Sciences) Statistics Version 22 program. Whether the pre-test and post-test scores of the Bar-On Emotional Quotient Inventory and Interpersonal Style Inventory were normally distributed was tested by Kolmogorov-Smirnov test and the normal distribution was found to be appropriate (Field, 2009). The results were accepted at 95% confidence interval and the significance was accepted as $p < .05$.

Results

Characteristics of the participants

Information in terms of sociodemographic features of the students in the training and control group of the study is given in Table 2. As a result of the analysis, it was concluded that there was no significant relationship between the students in the training group and control group in terms of their sociodemographic features.

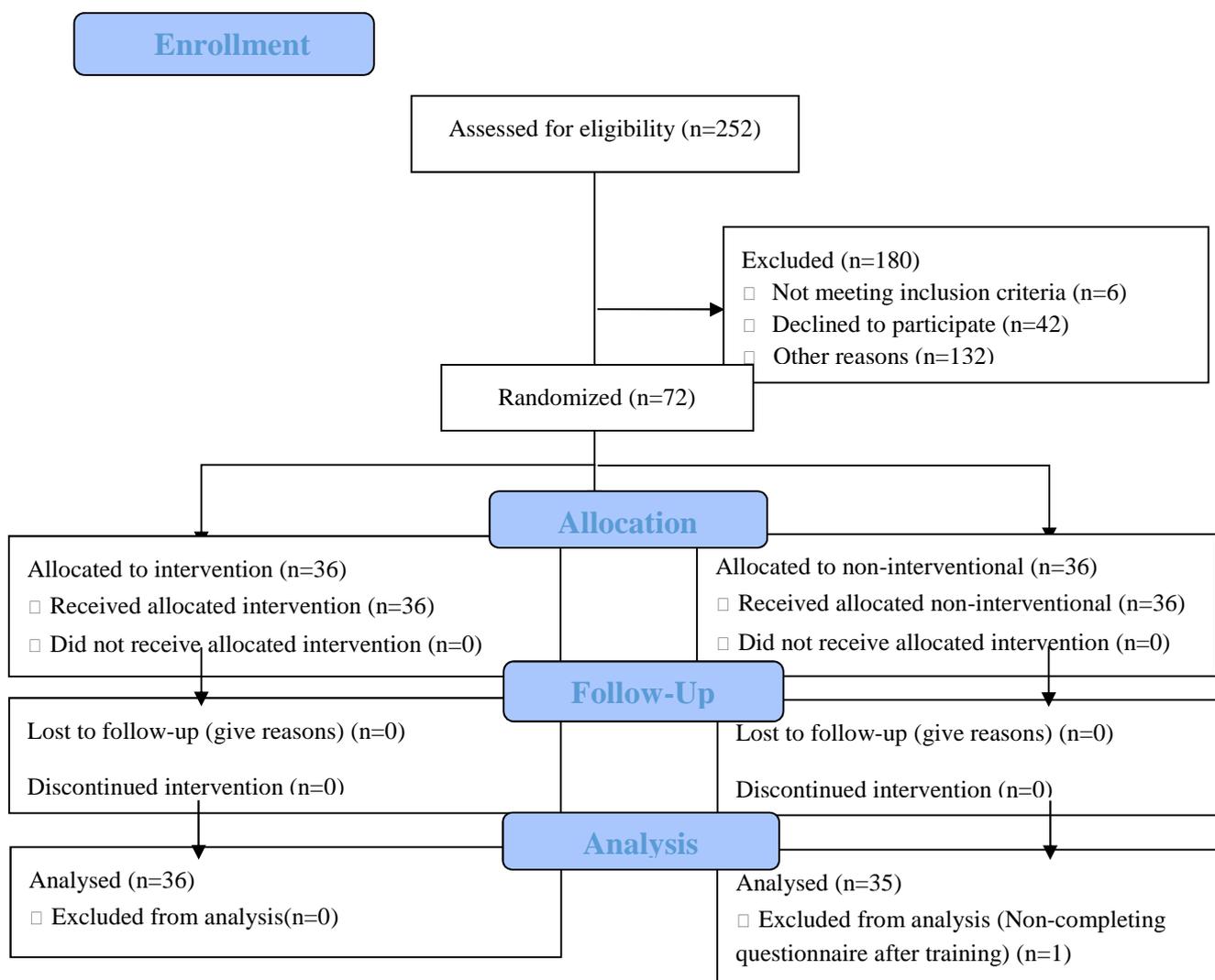


Figure 1. The flow diagrams of the participants through each stage of the study.

Table 1. The content of the training and the process

Sessions	The content of the training and the process
1. Session Date: 24.02.2015 Time: 30 min.	Greeting Informing about the study Receiving informed voluntary consent form Applying pre-training questionnaire to training group students
2. Session Date: 03.03.2015 Time: 60-75 min.	War-up Activity Subject: Introduction to Emotional Intelligence Improvement Training Evaluating the day
3. Session Date: 10.03.2015 Time: 60-75 min.	Warm-up: Composing stories Subject: Emotional Intelligence - Personal Skills Dimension Improving Emotional Intelligence Skills Activity Evaluating the day
4. Session Date: 17.03.2015 Time: 60-75 min.	War-up Activity Subject: Emotional Intelligence - Interpersonal Skills Dimension Improving Emotional Intelligence Skills Activity Evaluating the day
5. Session Date: 24.03.2015 Time: 60-75 min.	War-up Activity Subject: Emotional Intelligence - Compatibility Dimension Improving Emotional Intelligence Skills Activity Evaluating the day
6. Session Date: 07.04.2015 Time: 60-75 min.	War-up Activity Subject: Emotional Intelligence - Coping with Stress Dimension Improving Emotional Intelligence Skills Activity Evaluating the day
7. Session Date: 14.04.2015 Time: 60-75 min.	War-up Activity Subject: Emotional Intelligence- General Mood Improving Emotional Intelligence Skills Activity Evaluating the day
8. Session Date: 21.04.2015 Time: 60-75 min.	War-up Activity Subject: Communication Skills and Body Language Improving Emotional Intelligence Skills Activity Evaluating the day
9. Session Date: 28.04.2015 Time: 60-75 min.	War-up Activity Subject: Using Emotions in Social Relationships Improving Emotional Intelligence Skills Activity Evaluating the day
10. Session Date:05.05.2015	Evaluating Improving Emotional Intelligence Skills Training Applying post-training questionnaire to training group students

Table 2: Introductory Features of the Students

Sociodemographic Features	Training		Control		Total		Test Value	p
	n	%	n	%	n	%		
Age ($\bar{X} \pm SD$)	18.83±0.77		19.20±0.93		19.01±0.87		1.148*	0.264
Gender								
Female	31	86.1	26	74.3	57	80.3	0.910*	0.340
Male	5	13.9	9	25.7	14	19.7		
Place of Residence								
Village	5	13.9	3	8.6	8	11.3	1.502**	0.682
District	16	44.4	19	54.3	35	49.3		
City	7	19.4	8	22.9	15	21.1		
Metropolis	8	22.2	5	14.3	13	18.3		
Number of Siblings								
One sibling at most	14	38.9	11	31.4	25	35.2	0.168*	0.682
One sibling at least	22	61.1	24	68.6	46	64.8		
High School								
High School	10	27.8	15	42.9	25	35.2	1.170*	0.279
Anatolian High School	26	72.2	20	57.1	46	64.8		
Educational Level of the Mother								
Primary school or lower	20	55.6	21	60.0	41	57.7	0.019*	0.890
Secondary school or higher	16	44.4	14	40.0	30	42.3		
Educational Level of the Father								
Primary school or lower	13	36.1	15	42.9	28	39.4	0.115*	0.735
Secondary school or higher	23	63.9	20	57.1	43	60.6		
Nursing Department Preference								
Willingly	26	72.2	24	68.6	50	70.4	0.006*	0.939
Unwillingly	10	27.8	11	31.4	21	29.6		
Academic Achievement								
Bad	16	44.4	21	60.0	37	52.1	1.154*	0.283
Good	20	55.6	14	40.0	34	47.9		
Reading								
Non-reader	7	19.4	8	22.9	15	21.1	0.004*	0.951
Reader	29	80.6	27	77.1	56	78.9		
Interpersonal Relationship Status								
Bad	8	22.2	5	14.3	13	18.3	0.311*	0.577
Good	28	77.8	14	85.7	58	81.7		
Participation in Social Activities								
Yes	33	91.7	32	91.4	65	91.5	0.001*	1.000
No	3	8.3	3	8.6	6	8.5		
The Frequency of Participation in Social Activities								
Once a week	14	38.9	11	31.4	25	35.2	0.815***	0.665
Once a month	9	25.0	12	34.3	21	29.6		
A few times a year	13	36.1	12	34.3	25	35.2		

*Yates Chi-Square Test **Fisher's Exact Test *** Pearson Chi-Square Test

Table 3: The Students' Pre-training and Post-training Emotional Intelligence Scores

Group	n	Bar-On Emotional Quotient Inventory		Test Value	
		Pre-training	Post-training	t	p
		$\bar{x}\pm SD$	$\bar{x}\pm SD$		
Training	35	186.19±34.54	233.53±42.14	-8.719**	<0.000
Control	36	191.46±30.24	199.40±30.22	-2.031**	0.064
Test Value	t	-0.682*	3.912*		
	p	0.497	<0.000		

*Independent Samples t-Test **Paired Samples t-Test

Table 4: The Students' Pre-training and Post-training Interpersonal Relationship Style Scores

Group	n	Interpersonal Style Inventory		Test Value	
		Pre-training	Post-training	t	p
		$\bar{x}\pm SD$	$\bar{x}\pm SD$		
Training	35	135.11±10.58	139.19±12.89	-2.134**	0.040
Control	36	135.97±10.68	136.94±10.25	-0.851**	0.400
Test Value	t	-0.341*	0.813*		
	p	0.734	0.419		

*Independent Samples t-Test **Paired Samples t-Test

Evaluation of education

There was no significant difference between pre-training emotional intelligence mean scores of training and control group students ($p=0.497$). It was seen that after emotional intelligence skills training, there was a significant relationship between emotional intelligence mean scores of training and control group students ($233.53\pm 42.14 - 199.40\pm 30.22$, $p=0.000$) (Table 3).

It was also found that there was a significant difference between the emotional intelligence pre-training and post-training mean scores of the students in the training group ($186.19\pm 34.54 - 233.53\pm 42.14$, $p=0.000$). It was determined that there was no significant difference between the emotional intelligence pre-training and post-training mean scores of the students in the control group ($p = 0.064$).

When interpersonal relationship style mean scores of the students in the training and control group were compared before improving

emotional intelligence skills training, it was seen that there was no significant difference between interpersonal relationship style mean scores of the students in both groups ($p=0.734$). It was also found that there was no significant difference between interpersonal relationship style mean scores of the students in both groups after improving emotional intelligence skills training ($p=0.419$) (Table 4).

When the emotional intelligence skills pre-training mean scores and interpersonal relationship style mean scores of the students in the training, a difference was found between interpersonal relationship style pre-training and post-training mean scores of the students. This difference was statistically significant ($135.11\pm 10.58 - 139.19\pm 12.89$, $p=0.040$). There was no significant difference between interpersonal relationship style mean scores of the students in the control group before and after improving emotional intelligence skills training ($p = 0.400$) (Table 4).

Discussion

This study was conducted with nursing department freshmen students as quasi-experimental with pre-test and post-test control groups in order to evaluate the effectiveness of structured emotional intelligence skill improvement training in enhancing the mean scores of emotional intelligence and interpersonal relationship styles. It was concluded in this study that the training was effective in enhancing the scores of emotional intelligence and interpersonal relationship styles. This result is important in terms of providing a method that can be used as the training material during their training to improve the emotional intelligence and interpersonal relationship styles of nursing students.

In this study, it was determined that the students in the training and control groups were similar in terms of sociodemographic features. This result is also important in terms of showing that the study groups are homogeneous and comparable in terms of the effectiveness of the training.

In this study, it was revealed that improving emotional intelligence skills training was effective in increasing the students' emotional intelligence mean scores. Similar results were reported in the previous studies on this subject (Di Fabio and Kenny, 2011; Fletcher et al., 2009; Karahan and Yalcin, 2009; Sharif et al., 2013;

Vesely et al., 2014). These results show that improving emotional intelligence skills training can be used to improve the students' emotional intelligence.

It was determined in the research that improving emotional intelligence skills training was effective in enhancing the students' interpersonal relationship style mean scores. Emotional intelligence skill training to improve interpersonal relationship styles could not be found in literature. In this sense, it is a necessity to conduct other studies.

In the study by Fletcher et al. (2009), emotional intelligence skills training was given to 36 control group and 34 test group students of the 3rd grade medicine department studying at Liverpool University. A significant difference was found in the post-training emotional intelligence scores of the students in the test group (Fletcher *et al.*, 2009). The results of the study support the results of the present study.

Karahan and Yalcin (2009) took 20 students from each gender with low emotional intelligence scores out of 215 volunteer students studying at Ondokuz Mayıs University Faculty of Education. These students were randomly placed in the test and control groups. The students in the test group were given a total of 12 sessions of emotional intelligence skills training, each session lasting for 90 minutes. While there was no significant difference between the emotional intelligence pre-training scores of the test and control groups, there was a significant difference between the post-training scores of the test and control groups, and it was determined that there was a significant difference between pre-training and post-training scores of the test group (Karahan and Yalcin, 2009).

In their study with senior high school students in Italy, Di Fabio and Kenny (2011) allowed 23 students in the test group and 25 students in the control group. Improving emotional intelligence skill training was planned as 4 sessions, each session lasting for 2 to 2.5 hours. No significant difference was found between the pre-training scores of the test and control groups. After the training, there was a significant difference between the emotional intelligence scores of the students in the test and control groups (Di Fabio and Kenny, 2011). It can be said that the results of the present study are the same of the results of the study by Di Fabio and Kenny (2011).

In the improving emotional intelligence skill training with the nurses working in Shiraz University intensive care unit, Sharif et al. (2013) allowed 25 nurses in the test group and 27 nurses in the control group. No significant difference was found between pre-training emotional intelligence scores in both groups. A significant difference was observed between post-training emotional intelligence scores of the nurses in the test and control groups (Sharif *et al.*, 2013). The results of the study by Sharif et al. (2013) are similar with the results of the present study, and the study can be said to be important in that it was conducted with the nurses working in the intensive care unit, that it was compared with the nursing students in the present study, and that it was an example for the emotional intelligence skills training conducted in the field of nursing in the related literature.

In the study of Vesely et al. (2014) with pre-service teachers, the sample of pre-service teachers in the test and control groups was taken from two different major universities in Canada. 23 pre-service teachers in the test group were selected from one university and 26 pre-service teachers in the control group were selected from another university. Improving emotional intelligence skill training consisted of a sequent 5-week-process, with each training session lasting for 1-1.5 hours. At the end of the research, it was determined that there was a significant difference in the emotional intelligence scores of the pre-service teachers in the test group (Vesely, Saklofske and Nordstokke, 2014). The results of the study by Vesely et al. (2014) are similar with the results of the present study.

Although the control group students did not get any improving emotional intelligence skills training, it was found that there was a slight increase in post-training emotional intelligence mean scores but this post-training difference was not significant. This could be interpreted as that the students in the control group were able to share experience and knowledge with the students in the test group, as well as being able to interact with others both theoretically and practically because they were in the same class at the same time.

Implications for nursing and clinical practice

As a result of the study, the results show that emotional intelligence skills can be improved through training. It can help nursing students provide better quality care in their professional

lives during their relationships with the patients and their relatives. Because emotional intelligence is a skill that can be improved, and nursing standards of both students and nurses in the clinics can be significantly contributed by means of emotional intelligence skills training.

Limitations

The research has some limitations. Emotional quotient inventory and interpersonal style inventory were filled with self-report method. The reliability of the data is limited by the accuracy of the information provided by the participants. The research was carried out by a single researcher because of the fact that it was a thesis study and single or double blinding could not be made. It cannot be ignored that the students in the test and control group may have exchanged information as they were in the same class.

Conclusion

The results of this study revealed that the training provided using structured emotional intelligence skills improvement material was an effective method for increasing the nursing students' emotional intelligence and interpersonal relationship styles scores. Integrating this skill training method into the nursing education curriculum and in-service trainings in hospitals can contribute to improving emotional intelligence skills and interpersonal relationship styles of the nurses. It is advisable to carry out further investigations with different sample groups in which the limitations have been removed and different training methods are used, and to conduct longitudinal follow-up studies in term of the effectiveness of the training.

Ethical approval: It was approved by Adnan Menderes University Faculty of Medicine, Non-Interventional Clinical Research Ethics Committee (Protocol No: 2014/520).

Study registry number: ISRCTN12461394

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