

## Effectiveness of Nurses' Emotional Intelligence Training on Quality of Nursing Care for Critically Ill Patients

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### Abstract

Emotional intelligence enables critical care nurses to be aware of self and others including patients' emotions result in patients' satisfaction and improved quality of care. The current study aims to determine effectiveness of nurses' emotional intelligence training on quality of nursing care for critically ill patients. **Design:** quasi experimental research design was used. **Setting:** General ICU, emergency unit, and coronary care unit at Sohag University Hospital. **Sample:** First group is: convenient sample of 70 nurses. Second group is: 420 patients were selected into two groups' pre and post nurses training. **Tools:** Quick Emotional Intelligence Self-Assessment Questionnaire and Patients' Perception of Quality Nursing Care Scale. **Results:** a highly significant relation between nurses' emotional intelligence level pre training with post training T test 3.699 at  $P < 0.01$ ; a highly significant relation in patients' perception of quality nursing care T test 7.623 at  $P < 0.01$ ; and highly significant relation between nurses' emotional intelligence level and patients' perception of quality nursing care  $r = 0.767$  at  $P < 0.01$ . **Conclusions:** improvement in nurses' emotional intelligence level resulted in the improvement in the quality of nursing care. **Recommendations** emotional intelligence training should be introduced for critical care nurses as a basic of in-service training programs.

**Key Words:** *Critical Care Nurses, Critically Ill Patients, Emotional Intelligence, Quality of Nursing Care & Training.*

### Introduction

Critically ill patients' experience physical limitations, in addition to they feel lonely and isolated as they cannot receive needed family support. They develop cognitive impairment rapidly after ICU admission. Most common causes of cognitive impairment include delirium, hyperglycemia, hypotension, hypoxemia and sedation (Wergin and Modrykamien, 2012, Yeşil et al., 2015, Daniels et al., 2018).

Nurses should ordinarily interact with the most intense emotional aspects of life, and continuously reply to the needs of patients and families (Vahedian-Azimi et al., 2015, Shorofi et al., 2016). Physicians as well as nurses respond to emotions of critically ill patients with emotions of their own. These emotions can affect both the quality of care and the clinicians own sense of well-being, since unexamined emotions may also lead to distress, disengagement, burnout, and poor judgment. All of these consequences have a negative impact on patient care (Weilenmann et al., 2018).

Critical care nursing focuses intensively on all aspects of basic nursing care and life support, and thus combines the essence of nursing with observation, insightful and even intuitive interpretation, and reactions to the slightest imbalance or deviation in a patient's condition

(Scholtz et al., 2016) Skilled critical care nursing will reduce the risk of most complications, the number of critical care bed days and improve patient outcomes (Driscoll et al., 2018). Nurses are expected to be cheerful, responsive, kind, honest, compassionate, approachable and friendly (Sun & Okochili, 2017). Satisfactory nurses' performance requires the use of emotional intelligence (EI) (Rezaei & Salehi, 2018).

Emotional intelligence has important consequences for both, patients' therapeutic relationship and the nurses themselves (Al-Hamdan et al., 2017). Emotional intelligence for nurses enable to control their own emotions and correctly detect, interpret and handle the emotions of others, to identify the needs of the other person and to provide an individualized attention (Cerit & Gordeles, 2014). Emotional intelligence can be defined as an individual's ability to perceive, control and evaluate emotions. This set of characteristics, which deal with the perception, expression and regulation of moods and emotions, suggests that there must be a direct relationship between emotional intelligence, physical and psychological health (Shahnavazi et al., 2018).

Emotional intelligence components include: Self-awareness is the ability to read one's emotions and recognize their impact while using gut feelings to guide decisions; Self-management, involves

controlling one's emotions and impulses and adapting to changing circumstances; Social awareness includes the ability to sense, understand, and react to other's emotions while comprehending social networks; and Relationship management entails the ability to inspire, influence, and develop others while managing conflict. Emotional intelligence is further translated to five areas of competencies: self-awareness, self-regulation, motivation, empathy, and social skills. Emotional intelligence can be improved by education, practice and experience (Liu et al., 2013, Meehan et al., 2015).

Patients' perception of quality nursing care is increasingly seen as an important measure in examining quality of health care. Perception of quality nursing care influences by the expectations of the client who receives care as well as the nature of the received care. Patient as customer of care is considered an important source of information for the evaluation of existing care program and development of new one (Senarath & Gunawardena, 2011, Al-Hussami et al., 2017).

### Significance of the study

Nurses who possess a sufficient level of emotional intelligence are well placed to provide services in a way that improves patient satisfaction. Also, they are more skilled at managing their own emotions (Hajibabae et al., 2018) Quality nursing care is the purpose for which nurses and administrators work out. Patients everywhere become so knowledgeable and able to identify and seek high quality nursing care. When the nurse is aware of self and others mean he/she has acceptable level of emotional intelligence the result is quality of nursing care will be positively affected. So it is important to improve the level of critical care nurses' emotional intelligence through training to improve quality of nursing care for critically ill patients.

### Aim of the study

The aim of this study is to determine the effectiveness of nurses' emotional intelligence training on quality of nursing care for critically ill patients.

### Hypothesis

Training for critical care nurses on emotional intelligence will result in high level of quality of nursing care for critically ill patients.

## Subjects & Method

### Research Design

Quasi experimental research design used to conduct this study.

### Setting

The current study conducted in (general intensive care unit, emergency unit, and coronary care unit) at Sohag University Hospital.

### Sample

- **The 1<sup>st</sup> group is:** convenient sample composed of all available nurses working in designated sites (70) and willing to participate in the study.
- **The 2<sup>nd</sup> group is:** a purposive sample of 420 patients divided to 2 groups was selected for pre and post applying emotional intelligence training for nurses from the previous mentioned setting. Sample size determined using scoring Epi Info program to detect sample size equal 210 for each group at power study 80% Confidence Interval CI 95%. Number of patients per group per unit was (44 for General Intensive Care, 97 for Emergency, and 69 for Coronary Care Unit). Inclusion criteria: patients admitted for at least 48 hours, 18 years or older, able to communicate and willing to participate in the study.

### Tools

**First Tool:** quick emotional intelligence self-assessment questionnaire adopted from **University of Minnesota Extension (2017)**. The tool contains close ended questions in 2 parts: **Part I** covered personal characteristics age, sex, educational qualification, marital status, years of experience and unit. **Part II** Emotional intelligence four domains of 40 statements 10 for each domain emotional awareness, emotional management, social emotional awareness and relationship management.

The questionnaire based on five points Likert scale ranged from 0 (Never) to 4 (Always). Scoring system for each domain divided into 0-24 area for enrichment: requires attention and development; 25-34 effective functioning: consider strengthening; and 35-40 enhanced skills: use as leverage to develop weaker areas. The researchers of current study added the current score for effective variation between each level of EI. The total score of 40-item range from 0 to 160; scores less than 97 are considered low level of EI, scores between 97 and 136 are average level and scores of 137 and more are high level of EI.

**Second Tool:** Patients' Perception of Quality Nursing Care Scale (PPQNCS) adopted from **Dikmen & Yilmaz, (2016)**. The questionnaire consists of two sections. **1<sup>st</sup> section** is patient personal characteristics data; it includes unit name, date of unit admission, name, age, sex, marital status, level of education, and length of patient stay. **2<sup>nd</sup> section** is patients' perception of quality nursing care consists of 15 statements. The options given based on five points Likert scale ranged from 1 (strongly disagree) to 5 (strongly agree).

## Methods

The study conducted throughout three main phases, which are preparatory phase, implementation phase and evaluation phase.

**Preparatory phase:** through which extensive review of literature was done.

- Data collection tools translated into Arabic.
- **A pilot study:** conducted on 42 patients (10%) and 7 nurses (10%), randomly selected from intermediate intensive care unit at Sohag University Hospital, to test clarity and applicability of the study tools and time needed to fill in the questionnaire.
- Reliability of the study tools was done by Cronbach's alpha test it was 0.814 for quick emotional intelligence questionnaire self-assessment and 0.847 for Patients' Perception of Quality Nursing Care Scale.
- Jury of three professors in the field one from Nursing Administration and two from Critical Care Nursing reviewed the study tools to ensure content validity.
- Official permissions to carry out the study from the heads of designated units were done. Handout of emotional intelligence training was developed in Arabic.

## Implementation phase

- Data collected within nine months from January to September 2018. Patients' perception of nursing care firstly measured from January to February.
- Then emotional intelligence training for nurses was applied as follow: the implementation of training was delivered for five months from March to July.
- Nurses were assigned into small groups, 2 or 3 nurses were included per group and seven sessions for each group were implemented. Each session took about one hour.
- At first session, assessment of nurses' emotional intelligence level was measured and quick orientation of the training program was done. Training introduced at the designated settings.
- Training booklet contained the following outlines;
  - Introduction, definition of terms, quality of nursing care, employees training and its relation to quality,
  - General principles of emotions, the evolution of emotional intelligence, components of emotional intelligence, what is the emotions, positive and negative questions, negative emotional feelings in the work environment and its seriousness,
  - Positive criticism, emotional intelligence in the family and work, abilities and skills of person who has a high degree of emotional intelligence, disadvantages of delayed emotional maturity,

- Situations and examples that illustrate emotional intelligence and emotional regulation, situations with nursing,
- How to improve emotional maturity, and
- Patient behavior in intensive care, how to help sick person to overcome his ordeal in simple ways.

## Evaluation phase

- At the end of last session, assessment of nurses' emotional intelligence level was measured again.
- Patients' perception of quality nursing care then measured post nurses training from August to September.

**Ethical considerations:** research proposal approved from Graduate Studies and Research Committee, faculty of nursing, Sohag University. Consent obtained from nurses and patients who are willing to participate in the study and met the inclusion criteria, after explaining the nature and purpose of the study. Confidentiality and anonymity assured.

## Statistical Design

The collected data were coded entered into IBM compatible computer. All entered data were verified for any errors using Statistical Package for Social Sciences (SPSS) version 19 for windows. The collected data tabulated and analyzed using frequencies & percentages, Pearson correlation coefficient (r), means and standard deviations, T-test and Chi-square test. Test of significance were considered as follow: insignificant  $P \geq 0.05$ ; significant  $P < 0.05$  and highly significant  $P < 0.01$ .

## Results

Table (1): Frequencies and percentages distribution of nurse's according to personal characteristics (n = 70 nurses).

Variable	n	%
○ <b>Age</b>		
- 20 - <30	45	<b>64.3</b>
- 30 - <40	24	34.3
- 40 years and more	1	1.4
○ <b>Sex:</b>		
- Male	10	14.3
- Female	60	<b>85.7</b>
○ <b>Educational qualification:</b>		
- BSc. nurse	10	14.3
- Associate degree in nursing	32	<b>45.7</b>
- Secondary school of nursing (3 years)	28	40.0
○ <b>Years of experience:</b>		
- < 3 years	17	24.3
- 3 - <6 years	21	30.0
- 6 - <9 years	10	14.3
- 9 years and more	22	<b>31.4</b>
○ <b>Marital status</b>		
- Single	20	28.6
- Married	48	<b>68.6</b>
- Divorced	1	1.4
- Widow	1	1.4
○ <b>Unit</b>		
- CCU	21	30.0
- ICU	22	31.4
- Emergency unit	27	<b>38.6</b>

Table (2): Comparison between nurses EI domains pre and post training (n = 70).

Domain	Pre EI training		Post EI training		X <sup>2</sup>	P-value
	n	%	n	%		
<b>Emotional Awareness</b>						
- Area for enrichment	35	50.0	34	48.6	6.178	0.046*
- Effective functioning	33	47.1	26	37.1		
- Enhanced skills	2	2.9	10	14.3		
<b>Emotional Management</b>						
- Area for enrichment	47	67.1	31	44.3	7.471	0.024*
- Effective functioning	20	28.6	33	47.1		
- Enhanced skills	3	4.3	6	8.6		
<b>Social Emotional Awareness</b>						
- Area for enrichment	24	34.3	14	20.0	8.187	0.017*
- Effective functioning	42	60.0	42	60.0		
- Enhanced skills	4	5.7	14	20.0		
<b>Relationship Management</b>						
- Area for enrichment	23	32.8	10	15.7	11.133	0.004**
- Effective functioning	41	58.6	42	60.0		
- Enhanced skills	6	8.6	18	24.3		

\* P. Value is significant at  $P < 0.05$ \*\* P. Value is highly significant at  $P < 0.01$

**Table (3): Nurses EI level self-assessment score pre and post EI training (n = 70).**

Items	Pre EI training		Post EI training		Test	P-value
	No.	%	No.	%		
- Low EI level	26	37.1	12	17.2	<b>X<sup>2</sup></b> <b>11.129</b>	<b>0.004**</b>
- Average EI level	43	<b>61.5</b>	50	<b>71.4</b>		
- High EI level	1	1.4	8	11.4		
Mean ± SD of the quick emotional intelligence self-assessment score	<b>99.03±19.02</b>		<b>111.33±20.31</b>		<b>T test</b> <b>3.699</b>	<b>0.000**</b>

\* P. Value is significant at  $P < 0.05$ \*\* P. Value is highly significant at  $P < 0.01$ **Table (4): Personal characteristics of the studied patients pre and post nurses training (n = 210 each group).**

Item	Pre		Post		X <sup>2</sup>	P-value
	No	%	No	%		
<b>Age (years):</b>						
▪ 18 - <40	77	36.7	61	29.1	<b>20.264</b>	<b>0.000**</b>
▪ 40 - <65	87	<b>41.4</b>	129	<b>61.4</b>		
▪ 65 and more	46	21.9	20	9.5		
<b>Mean ± SD</b>	46.11±19.435		44.03±15.544			
<b>Gender:</b>						
▪ Male	117	<b>55.7</b>	118	<b>56.2</b>	0.010	0.922
▪ Female	93	44.3	92	43.8		
<b>Education level:</b>						
▪ Illiterate	9	4.3	7	3.3	4.752	0.314
▪ Primary	9	4.3	16	7.6		
▪ Preparatory	30	14.3	36	17.2		
▪ Secondary school	122	<b>58.1</b>	104	<b>49.5</b>		
▪ University	40	19.0	47	22.4		
<b>Marital status:</b>						
▪ Single	60	28.6	46	21.9	<b>19.910</b>	<b>0.000**</b>
▪ Married	109	<b>51.9</b>	118	<b>56.2</b>		
▪ Divorced	0	0.0	16	7.6		
▪ Widow	41	19.5	30	14.3		

\* P. Value is significant at  $P < 0.05$ \*\* P. Value is highly significant at  $P < 0.01$ **Table 5: Comparison between length of stay in the unit pre and post nurses training (n = 210 each group).**

Item	Pre		Post		X <sup>2</sup>	P-value
	No	%	No	%		
<b>Length of stay in the unit:</b>						
▪ 3 - <7 days	146	<b>69.5</b>	185	<b>88.1</b>	<b>25.275</b>	<b>0.000**</b>
▪ 7 - <15 days	43	20.5	22	10.5		
▪ 15 - <30 days	16	7.6	3	1.4		
▪ 30 days or more	5	2.4	0	0.0		

\* P. Value is significant at  $P < 0.05$ \*\* P. Value is highly significant at  $P < 0.01$

**Table (6): Patients' perception of quality nursing care pre and post nurses training (n = 210 each group).**

Item	Pre		Post		X <sup>2</sup>	P-value
	No	%	No	%		
▪ Strongly disagree	2	1.0	3	1.4	14.713	0.005*
▪ Disagree	16	7.6	6	2.9		
▪ Neutral	83	39.5	60	28.6		
▪ Agree	87	41.4	101	48.1		
▪ Strongly agree	22	10.5	40	27.1		
Total agreement of PPNCs	109	<b>51.9</b>	141	<b>67.1</b>	<b>83.161</b>	<b>0.000**</b>
Mean ± SD. of PPQNCs	<b>46.67±10.99</b>		<b>54.82±10.93</b>		<b>T test 7.623</b>	<b>0.000**</b>

\* P. Value is significant at P&lt; 0.05

\*\* P. Value is highly significant at P&lt;0.01

**Table (7): Correlation between nurses' EI and patients' perception of quality nursing care.**

Item	r	P-value
Nurses' EI and patients' perception of quality nursing care.	0.767	0.000**

\* P. Value is significant at P&lt; 0.05

\*\* P. Value is highly significant at P&lt;0.01

**Table (1):** Reveals the personal data for studied nurses, the majority of studied nurses 85.7% were females, 68.6% was married, 64.3% for studied nurses had 20 - <30 years, 38.6% working at emergency unit and 31.4% for nurses had experience for 9 years and more.

**Table (2):** Shows that there were significant relation between pre and post training in relation to domains of EI namely: emotional awareness, emotional management, and social emotional awareness X<sup>2</sup> was 6.178, 7.471 and 8.187 respectively at P<0.05. In addition there was highly significant relation between pre and post training in relation to relationship management domain X<sup>2</sup> was 11.133 at P<0.01.

**Table (3):** Reveals that the highest percentages of nurses EI level were 61.5% and 71.4% for average EI level in relation to pre and post EI training respectively. There was highly significant correlation between nurses EI level in relation to pre and post EI training X<sup>2</sup> was 11.129 at P<0.01. For the quick emotional intelligence self-assessment score Mean ± SD were 99.03±19.02 and 111.33±20.31 in relation to pre and post EI training respectively. There was highly significant relation T test was 3.699 at P < 0.01.

**Table (4):** Regarding to critical ill patient's personal characteristic the table revealed that the highest percentage: for age was 41.4% and 61.4% for patients had 40 - <65 years old, gender was 55.7% and 56.2% for male patients, education level was 58.1% and 49.5% for patients had secondary school, and marital status was 51.9% and 56.2% for married patients respectively in relation to pre and post nurses training. There was highly significant correlation for age and marital status in relation to pre and post nurses training X<sup>2</sup> was 20.264 and 19.910 respectively at P<0.01.

**Table (5):** Declares that the highest percentage of patient's length of stay in the unit was 69.5% and 88.1% for patients length of stay 3 - <7 days in relation to pre and post nurses training respectively. There was highly significant correlation X<sup>2</sup> was 25.275 at P<0.01.

**Table (6):** Regarding the differences in patients' perception of quality nursing care, the table revealed that the highest percentage was 51.9% and 67.1% for the total agreement of PPNCs in relation to pre and post nurses training respectively. There was highly significant correlation X<sup>2</sup> was 83.161 at P<0.01. For the Mean ± SD of the total score of patients' perception of quality nursing care it was 46.67±10.99 pre and 54.82±10.93 post nurses training. There was highly significant correlation T test was 7.623 at P<0.01.

**Table (7):** Regarding Pearson correlation between nurses' EI and patients' perception of quality nursing care the table revealed that there was highly significant correlation r = 0.767 at P<0.01.

## Discussion

Quality Patient care requires excellent technical services and good management and coordination efforts, in addition to it demands respectful and responsive care to patient's needs, preferences, and values; make clinical decisions that guided by patient values; and provide patients with emotional support (Rego et al., 2010). Highly emotionally intelligent people will be aware about their emotions, strengths, and weakness; also their ability to regulate emotion and problems solving will be enhanced (Mousa et al., 2017) Some of the nursing staff is not aware of the emotional intelligence concept or able to identify how they can best manage their own emotions.

Different activities and strategies may be of benefit and could help (Wilson, 2014).

As found in the present study there were significant relation between emotional awareness, emotional management and social awareness domains of EI pre and post training. Moreover there was highly significant relation between relationship management domain of EI pre and post training. Which means that emotional intelligence is markedly tends to be improved by training and continuity in application. The finding is supported by Shahnnavazi et al., (2018) who studied the effect of the EI education on quality of life in hemodialysis patients revealed that all domains of EI significantly improved after training.

The current study results showed that the nurses EI level were average for pre and post EI training. There was highly significant relation between pre and post EI training. As there wasn't previous attempts to develop or improve nurses EI so the level was average. In addition it is expected that repeated training will more enhance EI level. In the same line of the current study Codier et al., (2013) study of developing EI in oncology nurses found that post study improvements in emotional care documentation and emotional care planning suggest a positive effect of EI training.

In addition Gilar-Corbí, (2018) study to reveal if the emotional competence be taught in higher education clarified that EI training program introduced in three modalities: classroom, online, and coaching for three groups was effective in the all of the modalities. Moreover Al Faouri, (2014) who studied the effect of EI training on nurses' job satisfaction added that the training significantly increased emotional intelligence scores.

The present study finding revealed that there was highly significant correlation in patients' perception of quality nursing care in relation to pre and post nurses training. As emotionally intelligent nurses deal with patients while be pleased, reacting, polite, fair, sensitive, and approachable. All these characters increase the patients' perception of quality nursing care. A study of Yeşil et al., (2015) who investigated the patients' perceptions of quality nursing care (PPQNC) in intensive care unit was in accord with the current study. Found that PPQNC scores were high and patient's satisfaction levels with the nursing care they received were good.

Moreover Adam et al., (2017) to declare the quality of nursing care as perceived by cancer patients found that the overall means for the quality of nursing care were high. In addition Reck, (2010) to show patients' expectations and satisfaction with nursing care stated that the vast majority of the studied patients were highly satisfied. While Celik, (2017) to detect the

relationship between patient satisfaction and EI skills of nurses added that the levels of the patients' satisfaction with the nursing care provided were found to be high.

From study finding there was highly significant relation between nurses' EI and patients' perception of quality nursing care. That is the end result which proves the study hypothesis. The current study results are supported by Thorsteinsson, (2002) study of the quality of nursing care as perceived by chronic illnesses patients reported that nurses giving high quality care possessed attributes such as kindness, a good attitude and manner, as well as clinical competence. In addition Rao, (2006) in his study on leaders EI declares that a high degree of emotional intelligence linked to strong performance.

In the same line Ezzatabadi et al., (2012) to found the impact of nurses' emotional on the quality of hospital services indicated that nursing staffs' EI has a direct effect on the services quality. Moreover Celik, (2017) to reveal the relationship between patient satisfaction and EI skills of nurses found that there was positive relationship between the high levels of EI of the nurses and the high levels of patient satisfaction. While the current study contradicts with Chao et al., (2016) study to show nurse occupational burnout and patient-rated quality of care reported that EI among nurses was not significantly correlated with quality of care as assessed by the patients.

## Conclusions

The current study concluded that there was significant difference relation between domains of EI namely: emotional awareness, emotional management and social awareness. Further there was highly significant deference for relationship management domain. There was marked improvement in quick emotional intelligence self-assessment score. The EI training had positive effect on length of patients staying in Critical Care Units. Nurses EI had positive effect on patients' perception of quality nursing care.

## Recommendation

Based on the results the study recommended that emotional intelligence training should be introduced for critical care nurses as a basic of in-service training programs as an indicator for improvement of quality nursing care for critically ill patients.

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