Emotional Intelligence and Quality of Nursing Care: A Need for Continuous Professional Development

Abstract
Background: Emotional Intelligence (EI) is necessary for personal and professional success. This study aimed to determine the relationship between EI and quality of nursing care from the viewpoint of nurses and patients. Materials and Methods: This descriptive correlational study was conducted using convenience sampling to select the patients (n = 300) and census sampling to select the nurses (n = 100) at Amir Alam Hospital in Tabriz, Iran, in 2018. The data collection tools were the Quality Patient Care Scale (QUALPAC) and EI test by Bradberry-Greaves. Data analysis was performed in SPSS Version 20, using t-test, ANOVA, Chi-square, Pearson’s correlation test, and multivariate analysis. Results: The mean (SD) score of EI was 91.17 (12.33) in nurses, and the mean (SD) score of nursing care quality was 184.01 (37.41) and 202.22 (22.30) from the viewpoint of patients and nurses, respectively. There was no significant difference between the two viewpoints (p = 0.652). However, there was a significant correlation between the nurses’ EI and quality of nursing care (r = 1.00, p < 0.001). The educational level was the strongest predictor of increase in nursing care quality from the patients’ viewpoint, according to the multivariate analysis (β = −0.27, p < 0.001). Conclusions: EI positively affects the quality of nursing care and its dimensions. Therefore, it is recommended that nursing policymakers consider educational programs to strengthen the nurses’ EI and enhance the quality of nursing care. Patients, similar to nurses, can be proper indicators of the quality of nursing care; accordingly, simultaneous use of these indicators is suggested.

Keywords: Emotional intelligence, nurses, patients, quality of healthcare care

Introduction
Emotional Intelligence (EI) is a critical ability for personal and professional success. EI is characterized by self-awareness, self-management, social awareness, and relationship management.[1] This mental skill helps the individual in a variety of personal, social, occupational, communicative, and financial domains, such as time management, decision-making, customer services, accountability, empathy, presentation skills, stress tolerance, trust, and communication management.[2] In healthcare teams, communication plays a key role in the diagnosis, care, and treatment of patients. Therefore, recognizing and enhancing EI plays an important role in health promotion.[3]

Acquisition of EI skills and their clinical application are needed in different disciplines of health sciences, especially nursing that involves care for patients.[4] Although some nurses and medical staff may not be aware of different aspects of EI, they can inadvertently acquire and apply some of these skills through experience. Nevertheless, these skills need to be strengthened and organized for increased efficiency and effectiveness. Also, development of EI by enhancing communication skills, stress tolerance, time management, and decision-making can improve the quality of care.[5]

The Quality of Nursing Care (QoNC) refers to meeting the patient’s needs through proper and safe care, empathy, appropriate communication, and respectful attitude toward the patient.[6] Some studies suggest that there may be a significant relationship between the nurses’ EI and quality of care.[7,8] In the workplace, nurses’ intraprofessional and interprofessional communication is essential. Therefore, having adequate EI skills can help nurses to better understand the emotional ambiance of their workplace.[9]
In the clinical setting, nurses are expected to make critical decisions, based on the patient’s emotional status. A suitable critical decision can have a remarkable influence on the patient outcomes and improve the quality of care.[7]

The promotion of healthcare quality, which is a priority in nursing care, can increase patient satisfaction, improve care efficiency, and reduce hospital costs.[8] Commonly, improvement of the quality of care is directly related to the patients’ viewpoints.[9] Also, patient outcomes have a great impact on the patient satisfaction and reflect an increase in QoNC.[10] Overall, strong EI skills may increase patient satisfaction and QoNC. According to previous studies, patients with EI up to 94% can judge the quality of hospital services fairly.[9,11]

Moreover, nurses can be proper indicators of the quality of hospital care.[12] Although some previous studies have focused on QoNC, only a few of them have compared the viewpoints of nurses and patients or investigated the impact of EI on these viewpoints.[13,14] Also, there are many challenges related to the quality of care and its dimensions from the viewpoints of nurses and patients. In this regard, Jamsahar et al. (2020) reported that the views of nurses and patients about QoNC are different in all psychosocial, physical, and communicative domains, whereas Askari et al. (2020) reported a significant difference in only the psychosocial dimension.[15,16] Besides, there are challenges related to the effects of factors, such as age, gender, education, and work experience, which can affect the QoNC and EI.[17,18] Considering the importance of QoNC and the mentioned challenges, we aimed to determine the correlation between EI and QoNC by comparing the viewpoints of nurses and patients.

Materials and Methods

This descriptive correlational study was conducted as part of a research project, approved by Maragheh University of Medical Sciences, East Azerbaijan, Iran. It was conducted using census sampling to select the nurses and convenience sampling to select the patients in Amir Alam Hospital in Tabriz, Iran, from March to June 2018. Of 150 nurses who worked in this hospital, and met the inclusion criteria, 100 nurses volunteered to participate in the study.

To estimate the sample size, we used the Standard Deviation (SD) of QoNC from the patients’ viewpoint (δ = 20), which was reported in Miri’s study.[9] The sample size was estimated to be 270 patients, according to the sample size formula (z = 1.96, d = 0.12, δ = 20). Since the nurses were invited to the study from all hospital wards, we increased the sample size and also invited patients from all wards to participate in the study. We attempted to match the patients and caregivers as much as possible to reduce error and bias. Finally, out of 340 patients treated at the hospital, 300 patients met the inclusion criteria and volunteered to participate in the study.

The inclusion criteria for the nurses were having at least one year of work experience and having a bachelor’s or master’s degree in nursing. Moreover, the inclusion criteria for the patients were as follows: hospitalization for at least 48 hours; no history of psychiatric disorders, according to history-taking from the patients; full alertness (oriented to person, place, and time); age range of 18-70 years; and ability to read and answer the questions. On the other hand, the exclusion criteria for the patients were decreased consciousness, sudden exacerbation of the disease, cardiac or respiratory arrest, and desire to withdraw from the study. The exclusion criteria for the nurses were the occurrence of a psychological disorder (self-reported), a new crisis during the study, and desire to withdraw from the study. Finally, the study population consisted of 100 nurses and 300 patients.

The data collection tool was a three-part questionnaire. The first part included a demographic questionnaire, containing the personal and social characteristics of the patients (age, gender, marital status, level of education, clinical emergencies, history of hospitalization, and frequency of admission) and nurses (age, gender, marital status, level of education, shift work, occupational position, and work experience). The second part of the questionnaire included the Quality Patient Care Scale (QUALPACS), which was completed by the patients and nurses. The QUALPACS consists of psychosocial (28 items), physical (24 items), and communication (13 items) dimensions. The scores of this questionnaire range from 0 to 260. Scores of 0-136 are interpreted as unpleasant, scores of 137-204 are interpreted as partly unpleasant, and scores of 205-260 are interpreted as pleasant.[19,20]

The QUALPACS has been used to assess QoNC in the United States, United Kingdom, and Nigeria.[21] This tool is used to measure the QoNC from the viewpoints of nurses and patients. The validity of the Persian version of this questionnaire was approved in a study by Sabzianpur et al. (2019), and its reliability was confirmed with a Cronbach’s alpha coefficient of 0.97.[19] Moreover, in a study by Neishabory et al., the validity of this questionnaire was evaluated, and its reliability was confirmed with a Cronbach’s alpha coefficient of 0.80.[21]

The third part of the questionnaire, that is, Bradberry-Greaves’ EI test, consisted of 28 items, which were divided into four general EI domains: self-awareness, self-management, social awareness, and relationship management.[22,23] The validity of this questionnaire was approved in a study by Ganji et al. (2006), using two methods of convergent validity and factor analysis. In their study including 540 students, Cronbach’s alpha coefficient was 0.82 for males and 0.83 for females.[23] Moreover, the validity of this questionnaire was approved in a study by Ghaderi (2015). The reliability coefficient was 0.90 for self-awareness, 0.87 for self-management, 0.80 for social
The questionnaires were distributed by two members of the research team (Piri Sh. and Khademi E.) in the morning, afternoon, and night shifts among patients and nurses of each ward and collected after completion. Data analyses were carried out in SPSS Version 20 (IBM, USA) by using Kolmogorov-Smirnov test, t-test, ANOVA, Chi-square, Pearson’s correlation coefficient test, and multivariate analysis.

Ethical considerations

This study was approved by the Ethics Committee of Maragheh University of Medical Sciences (Iranian ethical code: IR.MARAGHEHPHC.REC.1396.26). The study objectives and design were explained to the patients and nurses, and they were allowed to withdraw from the study at any time. All participants gave an oral consent before enrollment in the study.

Results

A total of 300 patients and 100 nurses participated in this study. According to the results of Kolmogorov-Smirnov test, the distribution of EI (z = 0.81, \( p = 0.513 \)) and QoNC (z = 0.79, \( p = 0.546 \)) data was normal. The mean (SD) score of EI was 91.17 (12.33) in nurses; the mean (SD) scores of all EI dimensions are shown in Table 1. The mean (SD) score of QoNC was 184.01 (37.41) from the viewpoint of patients and 202.22 (22.31) from the viewpoint of nurses. There was a significant association between some demographic characteristics of the patients (e.g., age, educational level, occupation, and emergency admission) and QoNC (\( p < 0.001 \)) [Table 2]. No significant difference was found in the total score of QoNC from the viewpoint of patients and nurses (\( p = 0.652 \)), although there were significant differences in the psychosocial (\( p = 0.04 \)) and physical (\( p = 0.02 \)) dimensions [Table 3].

There was a significant positive correlation between the EI of nurses and QoNC from the viewpoint of nurses and patients, based on Pearson’s correlation test (\( r = 1.00, \ p < 0.001 \)) [Table 3]. Among the patients’ demographic characteristics, educational level and occupation were the most common predictors of QoNC from the patients’ viewpoint, based on the multivariate analysis (\( \beta = -0.27, <0.001 \)). Also, gender (\( \beta = -0.27, \ p = 0.005 \)) and educational level (\( \beta = 0.22, \ p = 0.03 \)) were the strongest predictors of EI, based on the multivariate analysis [Table 4].

Discussion

This study aimed to determine the relationship between EI and QoNC from the viewpoints of nurses and patients. The high EI of nurses had a positive impact on the improvement of QoNC from the viewpoints of nurses and patients. Similar to the present study, Lewis et al. (2017) reported that EI had a positive effect on QoNC.[25] Other studies, including the ones conducted by Nightingale et al. (2018) and Askari et al. (2020), reported that EI has a positive relationship with QoNC.[14,16]

Overall, nurses require different communicative, psychological, emotional, decision-making, and empathy skills to provide more effective care for the patients.[1,25] EI may positively affect the development of self-awareness, self-management, social awareness, and relationship management.[1] According to the present study, each dimension of EI has a significant positive relationship with the patients’ viewpoints about QoNC. Therefore, improvement of nurses’ EI skills and the patients’ viewpoints may greatly increase the QoNC.[9] Although various positive effects have been reported in previous studies, none of these studies have investigated the effect of EI on the overall quality of care. It seems that EI has a direct impact on all aspects of QoNC (e.g., psychosocial, physical, and communicative) and enhances the nursing skills associated with these dimensions.[14,16,25]

Moreover, the present study aimed to compare the QoNC from the viewpoints of nurses and patients. While no significant difference was found in the total score of QoNC from the viewpoints of patients and nurses, there was a significant difference in the psychosocial and physical dimensions. Although some studies have been carried out on the QoNC,[26,27] less attention has been paid to the viewpoints of nurses and patients to assess the QoNC. On the other hand, Jamsahar et al. (2020) reported a significant difference between the viewpoints of nurses and patients about QoNC, which is inconsistent with the present study.[15] Nevertheless, only the dimensions of quality of care were compared, and the overall quality outcome was not compared. Neishabory et al. (2011) found

| Table 1: The prevalence and mean (SD) score of dimensions of emotional intelligence |
|-------------------------------|-----------|-------------|----------|
| Emotional Intelligence | Mean (SD) | Level       | n (%)   |
| Self-awareness             | 18.96 (3.29) | Weak       | 3 (3)   |
|                            |           | Normal     | 70 (50) |
|                            |           | High       | 27 (27) |
| Self-management            | 26.02 (4.39) | Weak       | 40 (40) |
|                            |           | Normal     | 49 (49) |
|                            |           | High       | 11 (11) |
| Social-awareness           | 15.50 (2.59) | Weak       | 3 (3)   |
|                            |           | Normal     | 74 (74) |
|                            |           | High       | 23 (23) |
| Relationship Management    | 30.69 (5.30) | Weak       | 2 (2)   |
|                            |           | Normal     | 27 (27) |
|                            |           | High       | 71 (71) |
| Total score                | 91.17 (12.33) | Weak       | 2 (2)   |
|                            |           | Normal     | 22 (22) |
|                            |           | High       | 76 (76) |
a significant difference between the viewpoints of patients and nurses about QoNC, which is not consistent with the present study.\[21\] Despite the differences in the viewpoints of nurses and patients about the dimensions of QoNC, both of the mentioned studies revealed that the overall QoNC is satisfactory, which is consistent with the present study.

Nurses are important members of healthcare teams, and attention to the professional aspect of QoNC is essential.\[3\] On the other hand, patients as the recipients of care services are also important in QoNC.\[10\] Although in the present study, there were differences in many dimensions of nursing care from the nurses and patients’ viewpoints, there was no significant difference in terms of the pleasant or unpleasant delivery of nursing services. It seems that the perceptions of nurses and patients about the disease, social differences, communication, and physical problems have led to differences in different dimensions of QoNC.\[11-14\] however, the overall opinion about the quality of care is similar. It can be inferred that the views of nurses and patients differ regarding the quality-of-care services, while there is no significant difference in the quality-of-care outcomes; therefore, the patients’ viewpoints can be as important as the staff’s viewpoints about QoNC.\[12\] It is recommended to consider

### Table 2: The relationship between Social-demographic characteristics of patients and nurses with QoNC*

#### Social-demographic characteristics of patients and QoNC*

| Patient Demographics | n (%) | QoNC* Mean (SD) | p-value |
|----------------------|-------|-----------------|---------|
| **Gender** | | | |
| Male | 145 (48.30) | 185.92 (40.22) | 0.065** |
| Female | 155 (51.7) | 182.23 (34.61) | |
| **Age** | | | p<0.001*** |
| 18-35 | 82 (26.67) | 177.22 (41.80) | |
| 36-45 | 53 (17.70) | 170.23 (36.54) | |
| ≥46 | 164 (55.63) | 191.86 (33.56) | |
| **Marital status** | | | 0.77** |
| Single | 99 (33) | 189.27 (32.30) | |
| Married | 201 (67) | 181.42 (39.49) | |
| **Education level** | | | p<0.001*** |
| Illiterate | 146 (48.70) | 193.24 (32.33) | |
| Elementary | 123 (41) | 176.69 (41.02) | |
| Academic | 31 (10.30) | 69.65 (3.78) | |
| **Occupation** | | | 0.01***, |
| Unemployment and housekeeper | 168 (56) | 187.24 (35.98) | |
| Simple and technical worker | 72 (24) | 175.29 (38.20) | |
| Student | 25 (8.60) | 199.16 (30.61) | |
| Employment | 34 (11.4) | 160.94 (43.21) | |
| **Emergency admission** | | | p<0.001** |
| Yes | 189 (63) | 165.71 (38.62) | |
| No | 111 (37) | 191.13 (35.24) | |
| **History of hospitalization** | | | 0.42** |
| Yes | 246 (82) | 184.03 (37.13) | |
| No | 54 (18) | 183.89 (40.88) | |
| **Shift upon admission** | | | 0.809***, |
| Morning | 115 (38.30) | 185.69 (37.99) | |
| Evening | 126 (42) | 183.42 (34.33) | |
| Night | 59 (19.70) | 182.03 (42.76) | |

#### Social-demographic characteristics of nurses and QoNC*

| Nurse Demographics | n (%) | QoNC* Mean (SD) | p-value |
|-------------------|-------|-----------------|---------|
| **Gender** | | | 0.286** |
| Female | 73 (73) | 198 (25.15) | |
| Male | 27 (27) | 203.41 (21.47) | |
| **Age** | | | 0.257*** |
| 18-35 | 37 (37) | 203.68 (24.27) | |
| 36-45 | 56 (56) | 202.17 (204.88) | |
| ≥46 | 7 (7) | 184.50 (7.50) | |
| **Marital status** | | | 0.137*** |
| Single | 19 (81) | 207.06 (28.34) | |
| Married | 81 (19) | 199.94 (18.64) | |
| **Education level** | | | 0.02* |
| BSc**** | 93 (93) | 199.69 (22.16) | |
| MSc***** | 7 (7) | 208.75 (23.66) | |
| **Job experienced (year)** | | | 0.842*** |
| 1-10 | 32 (32) | 202.57 (23.35) | |
| 11-19 | 58 (58) | 202.65 (19.97) | |
| ≥20 | 10 (10) | 197.75 (17.92) | |
| **Type of employment** | | | 0.46** |
| Contract to workforce | 38 (38) | 204.84 (19.39) | |
| Employment | 62 (62) | 200.61 (19.39) | |
| **Types of shift** | | | 0.39** |
| Fixed | 22 (22) | 201.29 (24.19) | |
| Rotational | 78 (78) | 199.89 (15.31) | |

*Quality of Nursing Care, **Chi-square, ***ANOVA, ****Bachelor of Science in Nursing, *****Master of Science in Nursing
Table 3: Relationship between emotional intelligence and quality of nursing care based on nurses’ and patients’ viewpoints

| Quality of nursing care dimensions | Nurse (n=100) n (%) | Patient (n=300) n (%) | p-value of t-test |
|-----------------------------------|---------------------|-----------------------|------------------|
| **Psychosocial**                  |                     |                       |                  |
| Pleasant                          | 98 (98)             | 235 (78.30)           |                  |
| Partly Unpleasant                 | 8 (8)               | 128 (42.70)           | 0.764            |
| Unpleasant                        | 2 (2)               | 39 (13)               | 0.02             |
| Mean (SD)                         | 88.39 (1.00)        | 79.69 (17.43)         |                  |
| **Physical**                      |                     |                       |                  |
| Unpleasant                        | 2 (2)               | 39 (13)               |                  |
| Partly Unpleasant                 | 8 (8)               | 128 (42.70)           |                  |
| Pleasant                          | 90 (90)             | 133 (44.30)           |                  |
| Mean (SD)                         | 81.77 (1.00)        | 65.88 (15.14)         |                  |
| **Communication**                 |                     |                       |                  |
| Unpleasant                        | 84 (84)             | 226 (75.30)           | 0.764            |
| Partly Unpleasant                 | 16 (16)             | 74 (24.70)            |                  |
| Pleasant                          | 0 (0)               | 0 (0)                 |                  |
| Mean (SD)                         | 39.21 (0.56)        | 38.44 (8.56)          |                  |
| **Total**                         |                     |                       |                  |
| Unpleasant                        | 2 (2)               | 0 (0)                 | 0.652            |
| Partly Unpleasant                 | 47 (47)             | 1 (0.30)              |                  |
| Pleasant                          | 51 (51)             | 299 (99.70)           |                  |
| Mean (SD)                         | 202.22 (22.31)      | 184.01 (37.41)        |                  |

The correlation between EI * and QoNC**

| Emotional Intelligence | QoNC from nurses Viewpoints*** | QoNC from patients Viewpoints*** |
|------------------------|--------------------------------|----------------------------------|
|                        | r   | p           | r   | p           |
| **Self-awareness**     | 1.00, <0.001 | 1.00, <0.001 |
| **Self-management**    | 0.70, 0.02 | 0.68, 0.03 |
| **Social-awareness**   | 0.88, 0.001 | 0.60, 0.04 |
| **Relationship management** | 1.00, <0.001 | 1.00, <0.001 |
| **Total score**        | 1.00, <0.001 | 1.00, <0.001 |

*Emotional Intelligence **Quality of Nursing Care ***Pearson Correlation

both of these indicators to evaluate QoNC and survey the views of both professional and care recipients about QoNC.

It seems that as time passes and the patient is stabilized (as a health indicator), the interactions of the healthcare system with the patients increase.[14,15] A new role is developed for the patient as the sole recipient of care, which may present new challenges for the healthcare team. These challenges may include the role of patient in care evaluation, the concept of care quality from the patient’s view, and selection of appropriate evaluation tools by the medical team.[1,8,11,16]

To optimize the EI skills, the healthcare team needs to understand different characteristics of its members and the patients. It is also possible to enhance QoNC through effective interactions. In the present study, there was no significant difference between the nurses’ demographic characteristics and QoNC, except for the educational level. However, there was a significant association between QoNC and some demographic characteristics of the patients, such as age, educational level, occupation, and emergency admission. In this regard, Teunissen et al. (2016) showed that perception of QoNC in women is lower than men, which is not in line with the present findings.[28]

Unlike the present study, Lotfi et al. (2019) reported that there was a significant relationship between the QoNC and gender; in other words, the quality of care provided by female nurses was higher than the quality of care provided by male nurses.[29] The discrepancy between these studies can be attributed to the patients’ needs and situation at the Point of Care (POC). For example, men have better decision-making skills and physical abilities in critical situations, while women are more capable of communication. Differences in the patients’ conditions, departments, and environmental challenges may be also associated with different expectations from nurses at POC.

Therefore, attention to the capabilities of men and women at POC can determine the QoNC.[15,28,29]

Unlike the present study, Abdul Rahman et al. (2015) reported that the nurses’ higher educational level was not significantly associated with the QoNC. In their survey, nurses from different countries and educational systems were included.[30] Conversely, Grondahl et al. (2019) showed that there was a significant relationship between QoNC and higher education.[31] Other factors, such as culture, university education, and geography, can be significant in this comparison and cause significant differences, even in different regions of a country.

One of the limitations of this study was its large scope for nurses, which made them exhausted to complete the questionnaires. Therefore, the research team was required...
Table 4: Association between demographic characteristics with QoNC* from patients and nurses viewpoint and EI** based on multivariate analysis

| Demographic characteristics | S.E | β   | p-value |
|-----------------------------|-----|-----|---------|
| QoNC from patients viewpoint |     |     |         |
| Gender                      | 4.54| −0.04| 0.473  |
| Age                         | 1.64| 0.05 | 0.442  |
| Marital status              | 2.27| 0.09 | 0.084  |
| Education level             | 2.22| −0.27| 0.000  |
| Occupation                  | 0.98| 0.14 | 0.022  |
| Emergency admission         | 4.40| −0.07| 0.206  |
| History of hospitalization  | 7.66| −0.02| 0.714  |
| Shift upon admission        | 2.83| −0.03| 0.536  |
| QoNC from nurses viewpoint  |     |     |         |
| Gender                      | 5.86| 0.13 | 0.211  |
| Age                         | 6.70| −0.24| 0.156  |
| Marital status              | 3.66| 0.14 | 0.181  |
| Education level             | 6.65| −0.06| 0.587  |
| Work experience (year)      | 7.17| 0.02 | 0.910  |
| Type of employment          | 2.37| 0.05 | 0.697  |
| Shift working               | 2.55| −0.14| 0.313  |
| EI**                        |     |     |         |
| Gender                      | 2.65| −0.27| 0.005  |
| Age                         | 4.00| 0.20 | 0.291  |
| Marital status              | 3.11| −0.10| 0.388  |
| Education level             | 4.00| 0.22 | 0.030  |
| Job experienced (year)      | 3.84| 0.10 | 0.607  |
| Type of employment          | 1.40| −0.13| 0.338  |
| Shift working               | 1.09| 0.06 | 0.501  |

*Quality of Nursing Care, **Emotional Intelligence, ***Standard Error

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Conflicts of interest
Nothing to declare.

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