

Emotional Intelligence and Work Perceptions Among Nurse Managers

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ABSTRACT

Background Emotional intelligence (EI) refers to a person's ability to acknowledge the feelings of oneself and others, and to control those feelings so as to behave in a socially acceptable manner. We investigated the relationships between the characteristics of EI among nurse managers, and their perceptions of how much their position's roles and responsibilities can be delegated to other staff members.

Methods We surveyed 150 nurse managers working at 30 hospitals by using an anonymous questionnaire. The questionnaire consists of basic attributes, EI and work perception. The emotional intelligence scale (EQS) domain scores were analyzed by means of one-way repeated-measures analysis of variance. EQS scores were compared with corresponding averages for working adults in the instructions. The perceived importance of duties of nurse managers was compared between the resulting EQS scores 'High' and 'Low' groups.

Results The analysis population consisted of 105 nurse managers. Their EQS scored higher in all three domains, and with the exception of Altruism for all factor scores than the average for working adults. The perceived importance of the typical duties of nurse managers were compared between the High and Low groups for each EQS domain. Significant differences were observed between nurse managers with High and Low Intrapersonal emotional quotient (EQ) on four tasks. No significant differences were found for any of the responsibilities when nurse managers with High and Low Interpersonal EQ or Situational EQ were compared.

Conclusion The nurse managers' average EQS scores were higher in all areas. The high scores that were exhibited by could be considered desirable qualities for nurse managers. It seemed nurse managers with high scores in intrapersonal EQ struck a good balance between placing importance on EI considerations like managing relationships and creating a comfortable workplace, and management and leadership behaviors like department management and operations and data management.

Key words emotional intelligence; leadership; management; nurse manager; work perception

Transformational leadership is a type of leadership style that has been investigated in studies in the United States. Characterized by a leaders' ability to understand their organization's culture, and reimagine and rebuild it according to a new vision,¹ this authentic form of leadership embraces innovation and creativity while still demanding competence in building trust and relationships, as well as showing rational compassion.^{2, 3} Leadership is among the topics studied in Japanese research on nurse administrators, along with ability characteristics, human resource development, and operational performance. Still, the fact remains that some organizational decisions involving mutually competing directions are difficult for any given leader to make alone: namely, maintaining the status quo, transitioning, and implementing strategies for the future. Research by the Japan Nursing Association (JNA) has shown the roles and responsibilities demanded of nurse managers to be increasing with each passing year, surpassing what any single person can handle in terms of both scope and amount. In addition, some nurse practitioners hesitate to become nurse managers due to issues with the availability of support and training programs to prepare them for the responsibilities of nurse management, as well as the sheer amount of responsibilities and work associated with the role. Indeed, the fact that many long-term nurse administrators in hospitals lack complete training for their position has been well documented.⁴ It is widely perceived that nursing managers are insufficiently prepared for their roles.⁵

Emotional intelligence (EI), sometimes conceptualized as emotional quotient (EQ), refers to a person's ability to acknowledge the feelings of oneself and others, and to control those feelings so as to behave in a socially acceptable manner. This competency is mainly utilized in social activities and situations involving interpersonal communication.⁶ This ability, which enables

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Abbreviations: ANOVA, analysis of variance; EI, emotional intelligence; EQ, emotional quotient; EQS, emotional intelligence scale; JNA, Japan Nursing Association

people to focus on the accurate perception and expression of emotions, is a non-cognitive skill that influences competence in handling a wide variety of situations.⁷

EI is an ability that focuses on the accurate perception and expression of emotion, the understanding of emotional knowledge, the use of feelings to facilitate thought, and the regulation of emotions in oneself and others.⁸ It has also been defined as a non-cognitive capability that influences one's ability to cope in various situations.⁸ EI is defined as the capacity for recognizing one's own feelings and the feelings of others, and the process of regulating both feelings and expressions in response to situations. Mayer et al. considered to be amongst the original researchers of EI, define it as "the ability to perceive and express emotion, assimilate emotion in thought, understand, and reason with emotion, and regulate emotions in self and others".⁹ Other definitions include characteristics such as self-awareness, self-regulation, motivation, empathy, and social skills. Researches on the relationship between transformational leadership and EI in managerial staff in nursing and other fields have consistently shown a positive association between the two. Researches examining the relationship between transformational leadership and EI in managers consistently indicate that a manager's EI is positively related with transformational leadership in nursing and other fields.^{10–12}

EI has been found to be positively associated with well-being and negatively with work-related stress; others reported EI correlated with better general health, greater job satisfaction, and lower risk of burnout.^{13, 14} Moreover, Leggat and Balding have claimed EI to be a crucial component of clinical leadership. EI has been found to be related positively to well-being and negatively to job stress,¹³ and correlated with better overall health, greater work satisfaction and decreased risk of job burnout.¹⁴ Others have identified EI as one important factor in clinical leadership.¹⁵ Transformational leadership includes attributes of EI: self-awareness, self-management, social awareness, and social skills.¹⁶ EI is considered a necessary quality in leaders, vital for producing superlative results; it is indispensable for proper behavior in groups and in broader society, and useful for smoothing human relationships for the purposes of team collaboration and consensus building. Moreover, nurse managers are considered highly influential in workplace culture,⁵ leading some to implore nurse leaders to develop training programs that focus on cultivating both EI and transformational leadership skills.¹⁷ Moreover, nurse managers are thought to be highly influential within workplace cultures,⁵ and scholars state that nurse leaders should look for development programs focusing

on both EI and transformational leadership skills.¹⁷

The duties of frontline nurse managers are critical for achieving organizational goals, making it essential to determine how best to develop the competencies needed to succeed in the role. EI has been identified as vital for effective leadership, and specifically as a key competency for healthcare leaders. Leaders with high EI care about individuals' experiences, and about understanding and accommodating their needs. Listening actively, identifying emotions, and recognizing the hidden motivations behind a person's words are important components of team leadership. Emotionally intelligent leaders are self-aware: they know how to interpret their own emotions, and understand how those emotions might affect others around them. When leaders empathize with others, they can gain their trust, allowing leaders to become even more effective.¹⁸

One function of nursing administrators is to optimize their organization's human and physical environment so that patients can receive the highest quality of nursing care around the clock, 24 hours a day. To faithfully fulfill this function, nurse administrators need interpersonal skills, as they must coordinate with others to do work more effectively and smoothly facilitate teamwork. Nurse managers are inundated with complex responsibilities: if they can effectively utilize their hospital's human resources (i.e., other staffs) to improve their work, they should be able to execute these functions inherent to the position and easily achieve the objectives of their department. Put differently, in order for nurse managers to be able to concentrate on their primary responsibility (workplace management), hospitals should adopt efficient methods of time and task management, as well as review the scope of work, i.e., what can be postponed or delegated (and the protocols for doing so), to provide improvements by taking into account work efficiency. In this work, the authors searched for relationships between the characteristics of EI among nurse managers, for whom interpersonal skills are key, and their perceptions of how much their position's roles and responsibilities can be delegated to other staff members.

SUBJECTS AND METHODS

Subjects

This study was conducted from December 2018 to January 2019. This study targeted nurse managers working at 30 hospitals, including university hospitals, National Hospital Organization-administered hospitals, and prefectural hospitals, in Chugoku–Shikoku region, aiming for a target sample size of about 150 nurse managers.

Methods

First, research cooperation was sought from each hospital and the staff member in charge of nurse management (nursing director). If approval was granted, study packets were mailed to the hospital for distribution to participating nurse managers. Each packet contained an informed consent form, a study overview, two questionnaires, and a return envelope. Packet distribution was entrusted to the nursing director, who handed them out to eligible nurse managers in each department. Subjects were asked to complete the questionnaires on their own, and then mail them back to the research team using the provided return envelope. The questionnaire consists of basic attributes, EI and work perception.

Basic attributes

Basic attributes surveyed included age, sex, current department, and years of career experience as a nurse practitioner, as a nurse administrator (e.g., head nurse, deputy-head nurse), and as a nurse manager.

Emotional intelligence

In this study, EI was defined as controlling one's own emotions for maintaining and promoting mental and physical health, and the EI of the nurse managers was measured using the emotional intelligence scale (EQS) developed by Uchiyama and colleagues,¹⁹ as a unique measure of emotional intelligence in Japan. This scale has established reliability and validity. The EQS is a 65-item questionnaire and consists of three domains, intrapersonal intelligence (intrapersonal EQ), interpersonal intelligence (interpersonal EQ), and situational intelligence (situational EQ); each composed of three factors, respectively: self-awareness, self-motivation, and self-control; empathy, altruism, and interpersonal relationships; situational awareness, leadership, and flexibility. Subjects respond to each question by choosing the most applicable option, which are coded by a 5-point Likert scale (0: not at all, 2: somewhat appropriate, 3: appropriate, 4: very well), with higher values corresponding to greater emotional control. The EQS takes about 15 minutes to complete. The 65 -items include two items that determine the response reliability propensity of subjects who may need individualized responses, and total scores can range from 0 to 252 points, with greater values indicating higher levels of EI. Cronbach's alpha for this study was 0.91.

Work perceptions

Subjects' perceptions of the roles and responsibilities of nurse managers, namely, their relative importance, and their potential for delegation to subordinates, were

investigated using a second questionnaire. The 21 roles and responsibilities surveyed were among those identified in the collected opinions of a hospital-related study conducted by JNA Nursing Professional Skills Committee section I;²⁰ permission to use them in the questionnaire was obtained directly from the JNA.

Subjects were asked to rate each responsibility in terms of perceived importance (maximum: 10 points) relative to a reference task (bed management: 5 points); in addition, they rated each in terms of its potential to be delegated to subordinates on a 4-point scale (1: unable to delegate; 2: difficult to delegate, 3: somewhat able to delegate, 4: able to delegate).

Analysis method

Subject attributes were encoded such that individuals could not be identified from the data, and then analyzed using descriptive statistics. The EQS was scored by calculating the sum total of items in each subscale (factor) according to the publisher's instructions.¹⁹ Domain scores were analyzed by means of one-way repeated-measures analysis of variance (ANOVA). If significance was reached, multiple comparisons were conducted to check for differences between domain pairs. EQS domain and factor scores were compared with corresponding averages for working adults, the reference values for which were provided in the instructions.¹⁹

Next, subjects were grouped into high- and low-scoring groups according to their subtotals in the three EQS domains: intrapersonal EQ, interpersonal EQ, and situational EQ. The perceived importance of various duties expected of nurse managers was compared between the resulting 'High' and 'Low' groups by means of an unpaired Student's *t* test. High and Low scorers in respective domains were determined as follows. The following scores were the median domain subtotals observed in the analysis dataset: intrapersonal EQ = 45 points, interpersonal EQ = 43 points, situational EQ = 42 points. Data normality was confirmed by the Kolmogorov–Smirnov test; if confirmed, each subject was placed in the High or Low group of each domain based on whether they scored higher or lower than the median value (intrapersonal EQ: High \geq 46, Low \leq 44; interpersonal EQ: High \geq 44, Low \leq 42; situational EQ: High \geq 43, Low \leq 41). Subjects who achieved exactly a median score were excluded from the corresponding analysis ($n = 3, 6, \text{ and } 3$, respectively). The validity of these groupings was confirmed by verifying the presence of a significant difference between the mean (domain) scores of the respective High and Low groups. In each of the three domains, the High group scored significantly higher than the Low group (all $P < 0.000$;

unpaired Student's *t* test), supporting the validity of the study's two-level grouping based on domain score. Finally, associations between each of the three EQS domains and perceived importance of each nurse manager duty were quantified in terms of Pearson's correlation coefficients. PASW Statistics 21.0 for Windows was used for statistical processing. Statistical significance was set at 5%.

Ethical considerations

Survey participants were given written documentation explaining the study overview along with the objective and methods. Ethical considerations were explained in a consent form attached to the questionnaires: i.e., subjects' participation was strictly voluntary, they would suffer no disadvantage from declining to participate, and the study findings would not be used for any purpose beyond those stated. Subjects were asked to submit their data independently, using the return envelope and of their own volition, to ensure their participation was not coerced by the nursing director. Consent was considered to have been obtained if the subject completed and submitted the questionnaire forms.

Subjects' right to obtain study-related data was guaranteed, with the researcher's contact information written on the forms in case of any questions. The survey was anonymous to protect participants' privacy; data were encoded to obscure identifying information about the individuals and their institutions, and statistically analyzed in aggregate. This study was conducted after receiving approval from the Research Ethics Review Committee of the researchers' institution (approval ID: 206).

RESULTS

Fifteen of the 30 hospitals that received requests agreed to participate in the study. Study packets were distributed to 199 nurse managers in total; questionnaires were returned by 117 (collection rate: 58.8%). The analysis population consisted of 105 nurse managers (valid response rate: 89.7%), after excluding 12 subjects for incomplete responses.

Characteristics of the participants

Characteristics of the participants are shown in Table 1. The study population consisted of 6 men (5.7%) and 99 women (94.3%); their average age was 51.7 ± 5.9 years. On average, subjects had 28.8 ± 6.4 years of experience as a nurse practitioner, and 6.0 ± 3.7 years of experience as a nurse manager (12.3 ± 6.1 years, including administrative roles such as head or deputy-head nurse). Respondents' most common department was a hospital

ward ($n = 55$); departments had 21.5 staff members on average.

Nurse managers' EQS scores in comparison to working adults

Subjects' EQS domain scores are shown in Table 2, alongside mean (reference) values for working adults. One-way repeated-measures ANOVA revealed main effects of domain score [$F(39,64) = 2.82, P < 0.001$]. Multiple comparisons revealed significant differences between Intrapersonal EQ and Interpersonal EQ ($P < 0.05$), and between Intrapersonal EQ and Situational EQ ($P < 0.01$); no such difference was observed between Interpersonal EQ and Situational EQ.

Each EQS domain and factor score was compared with the corresponding reference (mean) value given by the developer.¹⁹ Nurse managers scored higher in all three domains than the average for working adults ($P < 0.01$). In addition, with the exception of Altruism, significant differences between nurse managers and the general population were seen for all factor scores.

Nurse managers' perceptions of their roles and responsibilities

The top three duties ranked as highest importance by nurse managers were, in descending order, safety management, improving nursing quality assurance, and clarifying departmental issues / formulating and implementing policies. Student training and support, as well as environmental maintenance and goods management, were rated as less important than bed management (Table 3).

Differences in perceptions of nursing manager responsibilities by EQS domain score

The perceived importance of the typical duties of nurse managers were compared between the High and Low groups for each EQS domain by means of unpaired Student's *t* tests. Significant differences were observed between nurse managers with High and Low Intrapersonal EQ in the perceived importance of clarifying departmental issues / formulating and implementing policies ($P < 0.01$), coordinating relationships ($P < 0.01$), creating a comfortable working environment ($P < 0.05$), and information management ($P < 0.01$). No significant differences were found for any of the responsibilities when nurse managers with High and Low Interpersonal EQ or Situational EQ were compared (Table 4).

DISCUSSION

To investigate the EI of nurse managers, we compared their average EQS scores to the average for other

Table 1. Demographics profile of the nurse manager (n = 105)

| Characteristics | | n | (%) |
|--------------------------|---|-------------|--------|
| Age | Average (years), mean (SD) | 51.7 ± 5.92 | |
| By age | 30's | 2 | (1.9) |
| | 40's | 32 | (30.5) |
| | 50's | 64 | (60.9) |
| | 60's | 7 | (6.7) |
| Sex | Male | 6 | (5.7) |
| | Female | 99 | (94.3) |
| Nurse experience | Average (years), mean (SD) | 28.8 ± 6.4 | |
| | ≤ 20 years | 11 | (10.5) |
| | 21–29 years | 40 | (38.1) |
| | ≥ 30 years | 53 | (50.5) |
| | Blank | 1 | (0.9) |
| Administrator experience | Average (years), mean (SD) | 12.3 ± 6.1 | |
| | ≤ 10 years | 34 | (32.4) |
| | 11–19 years | 52 | (19.5) |
| | 20–29 years | 12 | (11.4) |
| | ≥ 30 years | 2 | (1.9) |
| | Blank | 5 | (4.8) |
| Nurse manager experience | Average (years), mean (SD) | 6.0 ± 3.7 | |
| | ≤ 5 years | 8 | (7.6) |
| | 6–10 years | 43 | (40.1) |
| | 11–20 years | 36 | (34.3) |
| | 21–29 years | 11 | (10.5) |
| | ≥ 30 years | 2 | (1.9) |
| | Blank | 5 | (4.8) |
| Department | Ward (internal medicine, surgery, mixing, etc.) | 55 | (52.4) |
| | Regional medical cooperation room | 9 | (8.6) |
| | Outpatient | 8 | (7.6) |
| | Operating room / Material room | 7 | (6.7) |
| | Psychiatric ward | 5 | (4.8) |
| | Medical Safety Management Office | 5 | (4.8) |
| | Community-based care ward | 4 | (3.8) |
| | Dialysis room | 2 | (1.9) |
| | Education | 2 | (1.9) |
| | Other | 8 | (7.6) |

working adults and found that nurse managers' average scores were higher in all areas. Of the corresponding factors, for all except altruism, the nurse managers exhibited higher mean scores than the average for working adults. For those in care and support professions like nursing, a degree of self-management is required to regulate one's own emotions as appropriate to the

situation. Thus, the high scores that were exhibited by the nurse managers on almost all of the items could be considered desirable qualities for nurse managers in general. On surveys, nursing students exhibit higher scores for interpersonal response than their peers taking different majors.^{21, 22} It has also been reported that nursing students have higher scores in interpersonal

Table 2. Comparison of nurse manager and adult average emotional intelligence scale

| | Nurse managers (<i>n</i> = 105) | | Adult average (<i>n</i> = 1566) | | <i>P</i> -value |
|----------------------------|-------------------------------------|---------|-------------------------------------|---------|-----------------|
| | Mean | (SD) | Mean | (SD) | |
| EQS total points | 223.29 | (1.30) | 118.34 | (35.21) | 0.000 |
| Intrapersonal | 46.08 | (11.16) | 42.13 | (12.26) | 0.001 |
| Self-awareness | 13.48 | (4.84) | 12.24 | (3.84) | 0.001 |
| Self-motivation | 13.69 | (3.94) | 12.70 | (1.26) | 0.012 |
| Self-control | 18.91 | (4.58) | 17.18 | (5.63) | 0.002 |
| Interpersonal | 44.17 | (11.45) | 39.20 | (12.54) | 0.000 |
| Empathy | 14.64 | (3.90) | 12.44 | (4.39) | 0.000 |
| Altruism | 13.03 | (4.03) | 12.25 | (4.08) | 0.058 |
| Interpersonal relationship | 16.50 | (5.28) | 14.50 | (5.65) | 0.000 |
| Situational | 42.79 | (12.64) | 36.60 | (13.13) | 0.000 |
| Awareness | 19.24 | (5.15) | 17.16 | (5.55) | 0.000 |
| Leadership | 11.16 | (4.28) | 8.64 | (4.58) | 0.000 |
| Flexibility | 12.39 | (4.08) | 10.72 | (4.15) | 0.000 |

P-value was estimated by unpaired Student's *t* test or Welch's *t*-test.

Table 3. Importance of nurse manager's task

| Tasks of nursing manager | Score | SD | 95% CI | |
|--|-------|------|--------|------|
| Safety management | 7.00 | 2.05 | 6.60 | 7.40 |
| Improving nursing quality assurance | 6.76 | 1.89 | 6.39 | 7.13 |
| Clarifying departmental issues / formulating and implementing policies | 6.48 | 1.97 | 6.09 | 6.86 |
| Trouble shooting | 6.47 | 2.12 | 6.05 | 6.88 |
| Keeping staff physically and mentally healthy | 6.33 | 2.20 | 5.91 | 6.76 |
| Creating a comfortable working environment | 6.24 | 2.07 | 5.84 | 6.64 |
| Staff training and support | 6.15 | 2.08 | 5.75 | 6.56 |
| Care and support for patients and families | 6.05 | 2.06 | 5.65 | 6.45 |
| Shift management | 6.03 | 2.06 | 5.63 | 6.43 |
| Coordinating relationships | 5.87 | 2.20 | 5.44 | 6.30 |
| Individual career support | 5.70 | 1.99 | 5.32 | 6.09 |
| Information management | 5.51 | 1.97 | 5.13 | 5.90 |
| Task management | 5.36 | 2.03 | 4.97 | 5.76 |
| Collaborating with other departments and occupations | 5.36 | 2.05 | 4.96 | 5.76 |
| Contributing to management | 5.32 | 1.48 | 5.04 | 5.61 |
| Discharge support / continuous nursing | 5.18 | 2.01 | 4.79 | 5.57 |
| Regional cooperation | 5.10 | 2.00 | 4.71 | 5.48 |
| Participating in hospital operations | 5.09 | 1.64 | 4.77 | 5.40 |
| Bed management | 5.00 | 0.00 | 5.00 | 5.00 |
| Student training and support | 4.87 | 1.86 | 4.51 | 5.23 |
| Environmental maintenance and goods management | 4.77 | 1.95 | 4.39 | 5.15 |

The importance of the nurse manager's task was scored for each task based on 5 points of bed management, 95% confidence interval (*n* = 105). CI, confidence interval.

Table 4. Mean value of the importance of the nurse manager's task in high and low scores of each emotional intelligence area

| | Intrapersonal | | | Interpersonal | | | Situational | | |
|---|---------------|------|---------|---------------|------|---------|---------------|------|---------|
| | High (n = 51) | | P-value | High (n = 52) | | P-value | High (n = 51) | | P-value |
| | Mean | SD | | Mean | SD | | Mean | SD | |
| Bed management | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 |
| Contributing to management | 5.55 | 1.65 | 0.113 | 5.38 | 1.52 | 0.778 | 5.51 | 1.74 | 0.238 |
| Participating in hospital operations | 5.35 | 1.82 | 0.083 | 5.19 | 1.68 | 0.659 | 5.24 | 1.88 | 0.345 |
| Clarifying departmental issues / formulating and implementing policies | 6.92 | 2.07 | 0.009** | 6.60 | 1.97 | 0.421 | 6.65 | 2.19 | 0.292 |
| Improving nursing quality assurance | 7.04 | 1.76 | 0.086 | 6.83 | 1.67 | 0.787 | 6.86 | 1.89 | 0.609 |
| Safety management | 7.20 | 2.04 | 0.250 | 7.13 | 2.02 | 0.562 | 7.06 | 2.19 | 0.702 |
| Task management | 5.67 | 2.23 | 0.114 | 5.42 | 2.08 | 0.953 | 5.47 | 2.23 | 0.631 |
| Discharge support / continuous nursing | 5.25 | 2.10 | 0.630 | 5.00 | 1.81 | 0.204 | 5.08 | 2.13 | 0.626 |
| Coordinating relationships | 6.27 | 2.23 | 0.040* | 6.00 | 2.32 | 0.569 | 6.02 | 2.44 | 0.508 |
| Care and support for patients and families | 6.33 | 2.12 | 0.172 | 6.10 | 2.05 | 0.979 | 6.27 | 2.23 | 0.297 |
| Troubleshooting | 6.75 | 2.17 | 0.194 | 6.63 | 2.20 | 0.470 | 6.57 | 2.24 | 0.517 |
| Regional cooperation | 5.22 | 2.19 | 0.434 | 5.06 | 2.03 | 0.632 | 5.04 | 2.24 | 0.845 |
| Collaborating with other departments and occupations | 5.65 | 2.13 | 0.141 | 5.46 | 2.16 | 0.853 | 5.37 | 2.20 | 0.811 |
| Shift management | 6.22 | 2.15 | 0.479 | 6.13 | 2.24 | 0.827 | 6.06 | 2.27 | 0.736 |
| Creating a comfortable working environment | 6.71 | 2.19 | 0.026* | 6.44 | 2.16 | 0.426 | 6.49 | 2.30 | 0.167 |
| Keeping staff physically and mentally healthy | 6.67 | 2.29 | 0.098 | 6.44 | 2.16 | 0.818 | 6.49 | 2.43 | 0.371 |
| Staff training and support | 6.47 | 2.15 | 0.053 | 6.31 | 2.07 | 0.525 | 6.29 | 2.31 | 0.455 |
| Student training and support | 5.00 | 2.20 | 0.432 | 4.71 | 2.11 | 0.385 | 4.94 | 2.24 | 0.833 |
| Individual career support | 6.00 | 2.10 | 0.156 | 5.79 | 2.09 | 0.915 | 5.71 | 2.23 | 0.883 |
| Information management | 6.18 | 2.08 | 0.001** | 5.88 | 2.07 | 0.086 | 5.82 | 2.32 | 0.124 |
| Environmental maintenance and goods management | 5.04 | 2.12 | 0.197 | 4.83 | 2.17 | 0.922 | 4.90 | 2.24 | 0.583 |

The perceived importance of the typical duties of nurse managers were compared between the High and Low groups for each EQS domain by means of unpaired Student's *t*-tests. * $P < 0.05$, ** $P < 0.01$.

EQ than in intrapersonal EQ, in particular for empathy, altruism and interpersonal control, indicating a greater level of attention to others than to their selves.²² This is based on the idea that the sub-scale that makes up interpersonal EQ, empathy, altruism, and interpersonal relationships, represents the ability to exhibit an appropriate emotional response based on reading the emotional states of others. Such an ability makes for a good nurse, given that nurses are required to act as a bridge between patients, their families, doctors, and other professionals and maintain appropriate interpersonal relations for effective collaboration with these people. Meanwhile, altruism as a personal value is reflected in the general concern for the welfare of others, the sacrifices that people are willing to make for the benefit of others and to serve others.²³ In other words, although a high score in altruism may be regarded as reflective of a kind personality, we cannot rule out the potential for this quality to lead to nurses experiencing burnout, as alongside the positive effect of smooth interpersonal relations, altruism can mean over-consideration of others and thus excessive compromises. However, the results of the current study show that the EI tendencies of nurse managers are not characterized by detrimental effects of altruism, but rather they are able to proactively confront themselves, understand their own emotional workings and work to control these, while simultaneously enjoying social interactions and showing positive concern for others. Palmer et al. found that transformational leadership was ‘significantly correlated with both the ability to monitor and manage emotions in oneself and others’.²⁴ Our findings support their conclusion that leaders who effectively practice transformational leadership are able to motivate and inspire passion in their subordinates, as well as monitor and manage their own emotions and those of others.

The duties which were recognized by nurse managers as having high importance were safety management, improving nursing quality assurance, and clarifying departmental issues / formulating and implementing policies. One of the particularities of nursing is being faced with patient mortality, and thus this could be considered a reflection of prioritizing the provision of safe and high-quality nursing alongside undertaking the everyday management duties required of a nursing manager. Other relatively high scoring items were staff training and support, creating a comfortable working environment for staff, and keeping staff physically and mentally healthy. Chemers states that leaders of today are required to build the kinds of relationships with their subordinates that allow them to lead, promote growth, and energize others in such a way that they can

accomplish the goals of the group and the mission of the organization.²⁵ The current study found that among their roles, the nurse managers who participated placed high importance on managing labor to allow their staff to work comfortably. On the other hand, roles that were considered of lower importance were training and supporting students, environmental maintenance and goods management, regional cooperation, and discharge support / continuous nursing. It could be argued that as each of these duties were covered by the roles of specialists such as training managers, nursing assistants, discharge coordination nurses, care managers, and medical social workers, the nurse managers themselves did not consider that they needed to take the lead in carrying out these duties.

When checking for a difference between the level of importance placed on various duties between the high scoring and low scoring groups of nurse managers in each of the EQS areas, the high scoring group in the intrapersonal EQ area placed greater importance on identifying issues to work on clarifying departmental issues / formulating and implementing policies, coordinating relationships, creating a comfortable working environment, and information management. The intrapersonal EQ area comprises self-awareness, self-motivation, and self-control, and refers to ‘the ability to understand the workings of one’s own emotions, support one’s behaviors, and take effective action’. Higher scores in this area represent a greater overall ability with regards to internal emotional processes, and thus the ability to live a stable and secure life as far as self-management is concerned. On the other hand, a low score in this area means difficulty maintaining appropriate relationships with family, friends, colleagues, etc.¹⁹ Clarifying departmental issues / formulating and implementing policies was a duty to which the participants widely attributed importance. However, the group who scored highly in the intrapersonal EQ area appeared to place higher importance than the low scoring group on this organizational management duty. Furthermore, it seemed nurse managers with high scores in intrapersonal EQ struck a good balance between placing importance on EI considerations like managing relationships and creating a comfortable workplace, and management and leadership behaviors like department management and operations and data management.

Goleman et al. argues that EI is an essential quality of an effective leader, as it affects workplace satisfaction, atmosphere, and the way people work.²⁶ For nursing managers, emotionally intelligent leadership is said to potentially affect staff retention, teamwork, quality of patient care, and workplace satisfaction.²⁷ Other prior

research also indicates that head nurse leadership style impacts nurse training and support, improving the work atmosphere, reducing nurse mental health problems, and staff retention. Furthermore, the role of EI in leadership behaviors has also been elaborated upon, with Hutchinson and Hurley linking emotionally intelligent leadership behavior with a reduction in bullying of nurses in the workplace,²⁸ and Gorgens and Brand linking it to controlling nurse burnout.²⁹ In other words, if nurse managers can increase their EI, this could mean a profound transformation of the nursing workplace with regards to staff training and support, and the creation of a comfortable work environment.

This study has several limitations. First, this study has been based on a survey carried out with nurse managers in a public hospitals in the Chugoku and Shikoku areas only, and did not target those affiliated with hyperacute phase hospitals, hospitals in metropolitan areas, or private or underpopulated areas hospitals. Larger scale studies are needed to test the generalizability of our findings. Second, nurse managers cannot build management skills thorough EI alone. The work of the nurse managers should be comprehensively evaluated using indicators other than EI.

In conclusion, while nurses generally have high levels of emotional intelligence, with particularly high scores in the area of interpersonal EQ, our study indicates that nurse managers who score highly in the intrapersonal EQ area, and are thus deemed to have the ability to effectively manage themselves as well as their relationships with others, are equipped with favorable qualities as nursing managers. The majority of the participants in this research had higher levels of emotional intelligence than the average for those in other professions, but the minority of low scorers would benefit from working to improve their emotional intelligence to enable them to practice effective leadership as medical organization managers. Moreover, it is arguably also necessary to construct programs for earlier career nurses who may one day become nursing managers to nurture the skills needed for future organizational management, including their interpersonal EQ abilities as well as their intrapersonal EQ abilities.

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