



Effects of preceptors' mentoring function on novice nurses' self-efficacy and organizational commitment: A cross-sectional study

Eunkyung Choi^a, Soyoung Yu^{b,*}

^a Bundang CHA Hospital, CHA University, Republic of Korea

^b College of Nursing, CHA University, 11160 Haeryong-ro, Pocheon-si, Gyeonggi-do, Republic of Korea

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ABSTRACT

Aims: This study investigated novice nurses' perception of the effects of preceptors' mentoring function on their self-efficacy and organizational commitment.

Background: Nursing mentoring is a mutually beneficial relationship between more and less experienced nurses. In nurse education, mentoring is a powerful tool that can be used for a successful transition from a novice to an experienced nurse.

Design: This descriptive study used a cross-sectional design.

Methods: A questionnaire survey was conducted with 160 novice nurses from Korean general hospitals who had been working for less than a year after completing their preceptorship.

Results: The preceptors' mentoring function as perceived by the novice nurses was 3.87, self-efficacy of the novice nurses was 3.71 points, and the organizational commitment was 3.46 out of 5 points. The results of the multiple regression analysis showed that mentoring function significantly affected novice nurses' self-efficacy ($\beta = 0.50$, $p < 0.01$) and organizational commitment ($\beta = 0.54$, $p < 0.01$). Further, the preceptorship training period had a significant effect on organizational commitment ($\beta = 0.13$, $p < 0.05$).

Conclusion: Preceptors' mentoring function, as perceived by novice nurses, affected their self-efficacy and organizational commitment.

1. Introduction

The low retention rate in the workplace of novice nurses has a direct impact on the current and future nursing workforce; therefore, retaining novice nurses has become one of the most important issues for healthcare leaders worldwide (Voss et al., 2022). Therefore, the importance of education for novice nurses cannot be overemphasized. Specifically, in an acute hospital environment where qualified and experienced nurses are employed, one needs to pay more attention to the education of novice nurses (O'Brien et al., 2014). Many countries conduct preceptorship programs as part of nurse education. Traditionally, in these programs, nurse preceptors are responsible for guiding nursing students, novice nurses and skilled nurses to adapt to new clinical environments (Sherrod et al., 2020). Preceptors can be defined as nurses who have a one-on-one direct interaction with students or novice nurses attending to patients or at medical institutions (O'Brien et al., 2014). Numerous studies have shown that nurse education through preceptors has a positive effect on patient outcomes and the retention of novice nurses

(Araghian et al., 2022; Kamolo et al., 2017; Cotter and Dienemann, 2016; Clipper and Cherry, 2015).

Importantly, besides having expertise in nursing practice, an effective and successful preceptor should be able to play an important role in helping the organization move toward its vision and goals and exert influence on people to motivate them and bring about change (Sherrod et al., 2020). That is, rather than preceptors merely providing simple technical training or helping novice nurses adapt, nurses' socialization education needs to be fostered more comprehensively. Mentoring facilitates this. Thus, mentoring can be defined as a person-to-person relationship that enables experienced people to help inexperienced people grow (Djiovannis, 2022). As in other specialized fields, mentoring plays an important role in transforming novice nurses into professional ones (Bryan and Vitello-Cicciu, 2020). In the healthcare sector, mentors are supporters, counselors and advocates who promote the survival and maintenance of nurses (Wynn et al., 2021).

Transition of novice nurses being mentored involves adapting to a situation where there is a shortage of nurses (Bryan and Vitello-Cicciu,

* Corresponding author.

E-mail addresses: gfinite@chamc.co.kr (E. Choi), yusso2012@daum.net (S. Yu).

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2020). For example, when there is insufficient nursing staff, if the preceptor can also serve as a mentor, novice nurses may find it easier to adapt. Thus, the nurse preceptor is a key person who can help novice nurses adapt to changes and new roles (Sherrod et al., 2020). This study aimed to confirm novice nurses' perception of the effect of preceptors' mentoring function on their self-efficacy and organizational commitment.

2. Background

Although preceptorship and mentoring seem similar, they are not. The following definitions of each term highlight the differences between them. Preceptorship is a fixed-period formal process where experienced and competent nurses provide education and support to learners to promote their learning and development.

However, mentoring is voluntary, mutually beneficial and usually includes long-term professional relationships (RNAO, 2017). While the preceptor's commitment period usually ends at the end of one semester (or a certain prescribed period), mentors often tend to commit much longer to mentees over the years. Mentors are also generally not asked to officially evaluate mentees, while preceptors are responsible for judging learning by giving scores to preceptees when the learning period ends (Voss et al., 2022). Specifically, what the two concepts have in common is that in this relationship, one person (preceptor or mentor) supports the growth of a less experienced and knowledgeable person, who is not yet improved in potential. This difference can also be confirmed by the dictionary definition (Merriam-Webster Dictionary, 2022).

Therefore, mentoring tends to be more advanced and focuses on personal growth. Mentoring in nursing provides work-learning opportunities throughout one's career, including nurse education, staff development and clinical supervision (Drury et al., 2022). In nursing, mentoring is recognized as a mutually beneficial relationship between more and less experienced nurses. In this relationship, the more experienced nurses help the less experienced nurses in improving their knowledge and skills and cultivating self-concept and self-efficacy (Coventry and Hays, 2020). Specifically, mentor nurses are those who guide novice nurses through practical development processes, teach organizational policies, procedures and routines and guide them on successfully exploring the politics and culture of an organization (Bryan and Vitello-Cicciu, 2020).

Self-efficacy in nursing enhances motivation, changes individual activities and gives one self-confidence; this equips practicing nurses with excellent adaptability in their relationships with patients or with colleagues (Moon, 2016). Essentially, self-efficacy is a concept that affects nurses' work stress and response (Choi et al., 2022) and acts as an internal factor to properly cope with job stress. Moreover, self-efficacy is a competency that must be improved in novice nurses (Kim and Kim, 2020). Therefore, a strategy to increase nurses' self-efficacy is necessary (Song et al., 2021).

It is necessary for nurses to constantly practice quality nursing. An environment where they can practice given tasks efficiently is conducive to this. The environment should be such that nurses are immersed in or fully committed to the organization (Jung and Lee, 2019). Organizational commitment is closely related to turnover and turnover intention (Shim, 2018). Hence, practical methods are needed for improving organizational commitment to lower the high turnover rate of novice nurses (Kim, 2020).

Despite the need for mentoring for the adaptation and growth of nurses, the current education practice focuses more on improving nursing practice under the role of preceptorship. Ideal preceptors should possess knowledge, skills and attitudes needed to promote effective education and learning for adult learners (Sherrod et al., 2020). However, preceptors also need to be mentors who are interested in the development of novice nurses and attempt to foster them. As novice nurses do not have enough experience to understand complex clinical situations, clinical judgment is usually a challenge in a regular and rigid

system (Bryan and Vitello-Cicciu, 2020). In other words, mentoring in nursing education is a powerful tool that can be used in the medical practice to create an environment that supports the successful transition of novice to experienced nurses (Voss et al., 2022). The benefits of nursing mentoring are to help novice nurses hone their skills and roles in providing care, which is all the more important in this epidemic era (Baldwin et al., 2020). Preceptors educate novice nurses individually and provide overall support for their adaptation. Preceptors should be involved as agents while integrating changes in new skills, practice models, or even organizational culture (Sherrod et al., 2020). Therefore, preceptors not only need to provide education for the current adaptation of novice nurses but also engage in mentoring activities to not only enhance novice nurses' skills but promote their psychological well-being as well (Kim, 2019). In this study, the researchers examined whether the degree of mentoring of novice nurses affects their self-efficacy and organizational commitment.

3. Methods

3.1. Study purpose and study design

This study aimed to examine novice nurses' perception of the effects of preceptors' mentoring function on the former's self-efficacy and organizational commitment. A cross-sectional survey was conducted with nurses working in the acute care sector of three general hospitals in Korea.

3.2. Data collection

The inclusion criteria for selecting the novice nurse participants were as follows: i) having no more than one year of work experience; ii) completed their preceptorship; and iii) having understood the purpose of this study, voluntarily agreed to participate and provided written consent. The exclusion criteria were as follows: i) work experience of more than one year; and ii) novice nurse having completed preceptorship, but did not voluntarily agree to participate in the study. Data were collected as follows. After receiving permission from the nursing headquarters of the hospital for the study, the list of nursing departments where novice nurses were placed was confirmed. Thereafter, the researchers disseminated information about the research to departments where novice nurses were placed for less than one year and collected data by explaining the specific purpose of the research and method of the questionnaire to the participants who voluntarily agreed to read the research guide and participate in the research. The participants were compensated for their participation. The population size was about 500 novice nurses from three hospitals. The estimated required sample size for this study using G*Power 3.1.9.4 for a linear multiple regression model ($\alpha = 0.05$, $1 - \beta = 0.95$, effect size $f^2 = 0.15$, number of predictors = 6) was 146 participants. Due to dropouts, 160 individuals were finally surveyed, and their data were analyzed. The three hospitals selected are acute-care hospitals, to which the researchers belonged. These hospitals were selected to check the mentoring function of preceptors because novice nurses in high-acuity environments are found to experience developmental lags or "theoretical-practice gaps" on their own (Rush et al., 2012). Therefore, acute hospitals are more suitable to confirm the mentoring effect of preceptors.

3.3. Measurement scales

The questionnaire included general characteristics, such as gender, age, education level, current department and work experience, alongside the following psychometrically validated scales:

3.3.1. Mentoring function

The mentoring function measurement tool originally developed by

Noe (1988) was translated and modified by Kwak (2004). This tool has three categories, consisting of a total of 23 questions, including eight questions for career development functions, four questions for role modeling functions and 11 questions for psychosocial functions. This tool was used by various countries and participants to check the validity of the mentoring function. For example, it was used by a study of 363 management staff working in the public and private sector organizations in North India (Arora and Rangnekar, 2017) and widely used in business and industry and in mentoring nursing staff, as suggested in a review study on mentoring tools (Chen et al., 2016). Modified tools in Korean have also been published through studies of Koreans (Kim et al., 2020; Kim and Kim, 2018). Responses for each item were rated on a 5-point Likert scale: the higher the score, the higher the mentoring function. Cronbach's alpha for this scale was 0.96, compared with 0.87 in Kwak's (2004) study.

3.3.2. Self-efficacy

To assess self-efficacy, a tool developed by Jung (2007) was used. This tool was originally a self-efficacy measurement tool developed by Sherer et al. (1982), which was modified and supplemented by Jung (2007) and used for various studies. In addition to two studies, one of 260 nurses working in general hospitals (Cho, 2019) and the other of 224 nurses in small and medium-sized hospitals (Kim and Park, 2020), a study was also conducted on 98 occupational therapy students (Hong and Hong, 2017). This tool has a total of 17 questions, the response of each measured on a 5-point Likert scale, with higher scores indicating higher self-efficacy. Cronbach's alpha for this scale was 0.93, compared with 0.94 at the time of development.

3.3.3. Organizational commitment

Organizational commitment was assessed with a tool developed by Son (2015) who translated the items corresponding to the emotional commitment section of the organizational commitment tool developed by Allen and Meyer (1990). Their Affective Commitment Scale is a popular measure of organizational commitment (Merritt, 2012) and has been used in several studies (Merritt, 2012; Craig et al., 2013). It comprises eight items, with each item measured on a 5-point Likert scale. The higher the score, the higher the organizational commitment. Cronbach's alpha for this scale was 0.84, compared with 0.817 in Son's (2015) study.

3.4. Data analysis

Statistical analyses were performed using SPSS (version 25.0; IBM SPSS Statistics for Windows, Armonk, NY, USA). The participants' general characteristics were analyzed using descriptive statistics, such as percentage, mean and standard deviation. The differences in mentoring function, self-efficacy and organizational commitment according to gender, marital status and preceptor position were analyzed using an independent t-test. It had a significance level of 95% confidence interval and the results were verified to meet the equivariance and normal distribution. Data normality was obtained by skewness and kurtosis for the multivariate test. An ANOVA was conducted to examine differences in the participants' general characteristics according to age, religion, education, current department, work experience, preceptorship training period and preceptor's work experience. A post-test was conducted using Scheffe's test. The relationships between mentoring function, self-efficacy and organizational commitment were analyzed using Pearson's correlation coefficient. To investigate the effects of preceptors' mentoring function on the self-efficacy and organizational commitment of novice nurses, multiple regression analysis was applied after controlling for the significant variables ($p < 0.05$) in the characteristics.

3.5. Ethical considerations

Approval was obtained from the Institutional Review Board (IRB) of

C Hospital in Gyeonggi-do (IRB No. 2020-07-043-003). The participants were novice nurses who understood the purpose of the study and voluntarily decided to participate in the study. Those who agreed to participate, provided their signed informed consent forms. The researchers in this study explained that the collected information and questionnaire responses would remain confidential and be used only for research purposes. They were also informed that they could stop participating in the study at any point of time.

4. Results

4.1. General characteristics

The general characteristics of the participants, including gender, age, marital status, religion, education level, work unit, work experience, preceptorship training period, preceptor's work experience and preceptor's position, are shown in Table 1.

4.2. Descriptive statistics and level of measurement variables; mentoring function, self-efficacy and organizational commitment

The descriptive statistics of the measurement variables used in this study are shown in Table 2. The mentoring function of preceptors was 3.87 ± 0.61 ; regarding the sub-areas of the mentoring function, career development function was 3.89 ± 0.59 , psychosocial function was 3.77 ± 0.69 and role modeling function was 4.07 ± 0.70 . Self-efficacy was 3.71 ± 0.46 and organizational commitment was 3.46 ± 0.54 . In this study, data normality was obtained by checking skewness and kurtosis. If the skewness or kurtosis of the data is between -1 and $+1$, the distribution can be viewed as a normal distribution (Mishra et al., 2019; Kline, 2005). In this study, the conditions of the normal distribution were satisfied, as shown in Table 2.

4.3. Mentoring function, self-efficacy and organizational commitment according to general characteristics

Table 1 illustrates that the self-efficacy of novice nurses showed significant differences according to the preceptors' work experience ($F = 3.46$, $p = 0.02$) and position ($t = -3.02$, $p < 0.01$). Organizational commitment showed significant differences according to nurses' marital status ($F = 2.04$, $p = 0.04$), work experience ($F = 6.59$, $p < 0.01$) and preceptorship training period ($F = 4.21$, $p = 0.02$).

4.4. Relationship between mentoring function, self-efficacy and organizational commitment

Table 3 illustrates that the preceptors' mentoring function as perceived by the participants was significantly correlated with novice nurses' self-efficacy ($r = 0.48$, $p < 0.001$) and organizational commitment ($r = 0.59$, $p < 0.001$). Furthermore, self-efficacy and organizational commitment were significantly correlated ($r = 0.50$, $p < 0.001$).

4.5. Effect of Preceptors' Mentoring Function on the Novice Nurses' Self-Efficacy

To identify factors affecting self-efficacy, which is the purpose of this study, a multiple regression analysis was conducted using only variables showing statistically significant differences in self-efficacy according to the general and job characteristics. The results are reported in Table 4. The variance inflation factor (VIF) for all variables was between 1.05 and 1.83. These are all smaller than 10; thus, there was no multicollinearity problem among the independent variables. Moreover, as the tolerance limit was 0.646–0.995 and the Durbin-Watson score was 1.783, there was no problem of self-correlation. Therefore, the basic condition for the multiple regression analysis was satisfied. The regression analysis model was statistically significant ($R^2 = 0.37$, $F(8,$

Table 1
Preceptor's mentoring function, and new nurses' self-efficacy and organizational commitment according to new nurses' general and job characteristics (N = 160).

| Variables | Categories | N (%) | Mentoring Function | | Self-efficacy | | Organizational Commitment | |
|-------------------------------|----------------------------------|------------|--------------------|-------------|--------------------------|-------------------------|---------------------------|--------------------------|
| | | | M ± SD | t/F (p) | M ± SD | t/F (p) | M ± SD | t/F (p) |
| Gender | Male | 26 (16.3) | 3.85 ± 0.58 | -0.19 | 3.64 ± 0.36 | -0.91 | 3.47 ± 0.58 | 0.07 |
| | Female | 134 (83.8) | 3.87 ± 0.62 | (0.85) | 3.73 ± 0.47 | (0.36) | 3.46 ± 0.54 | (0.94) |
| Age (year) | ≤ 25 | 85 (53.1) | 3.93 ± 0.63 | 0.93 (0.40) | 3.69 ± 0.47 | 1.00 (0.37) | 3.53 ± 0.54 | 1.45 (0.24) |
| | ≥ 26, < 30 | 61 (38.1) | 3.81 ± 0.62 | | 3.72 ± 0.46 | | 3.39 ± 0.50 | |
| | ≥ 30 | 14 (8.8) | 3.75 ± 0.48 | | 3.88 ± 0.35 | | 3.36 ± 0.70 | |
| | | | | | | | | |
| Marriage | Single | 155 (96.9) | 3.86 ± 0.62 | 0.74 | 3.72 ± 0.46 | 0.28 | 3.44 ± 0.54 | 2.04 |
| | Married | 5 (3.1) | 4.07 ± 0.47 | (0.46) | 3.78 ± 0.21 | (0.78) | 3.94 ± 0.49 | (0.04)* |
| Religions | Christianity | 40 (25.0) | 3.84 ± 0.61 | 1.50 (0.21) | 3.80 ± 0.47 | 2.40 (0.05) | 3.45 ± 0.54 | 1.96 (0.10) |
| | Roman Catholic | 14 (8.8) | 3.77 ± 0.43 | | 3.38 ± 0.54 | | 3.14 ± 0.54 | |
| | Buddhism | 3 (1.9) | 4.62 ± 0.28 | | 3.86 ± 0.29 | | 3.95 ± 0.44 | |
| | No Religion | 101 (63.1) | 3.88 ± 0.63 | | 3.73 ± 0.43 | | 3.49 ± 0.54 | |
| | etc. | 2 (1.3) | 3.46 ± 0.58 | | 3.62 ± 0.37 | | 3.47 ± 0.00 | |
| Education Level | 3 years diploma | 20 (12.5) | 3.98 ± 0.65 | 0.66 (0.52) | 3.82 ± 0.49 | 2.56 (0.08) | 3.38 ± 0.51 | 0.26 (0.77) |
| | Bachelor's degree | 136 (85.0) | 3.86 ± 0.61 | | 3.69 ± 0.45 | | 3.47 ± 0.54 | |
| | Master's degree | 4 (2.5) | 3.62 ± 0.61 | | 4.15 ± 0.41 | | 3.50 ± 0.74 | |
| Work Unit | Ward | 51 (31.9) | 3.95 ± 0.70 | 1.11 (0.36) | 3.62 ± 0.51 ^a | 2.37 (0.04)* | 3.48 ± 0.59 | 1.87 (0.10) |
| | OR | 32 (20.0) | 3.77 ± 0.56 | | 3.85 ± 0.34 ^b | | 3.41 ± 0.49 | |
| | RR | 21 (13.1) | 3.70 ± 0.54 | | 3.74 ± 0.37 ^c | | 3.46 ± 0.43 | |
| | ICU | 42 (26.3) | 3.91 ± 0.59 | | 3.64 ± 0.46 ^d | | 3.35 ± 0.55 | |
| | EMC | 8 (5.0) | 4.11 ± 0.51 | | 4.03 ± 0.49 ^e | | 3.89 ± 0.55 | |
| | etc. (AKU, Outpatient Care Unit) | 6 (3.8) | 3.68 ± 0.60 | | 3.92 ± 0.49 ^f | | 3.76 ± 0.51 | |
| Work Experience | < 3 months | 19 (11.9) | 4.00 ± 0.57 | 2.55 (0.08) | 3.57 ± 0.48 | 1.16 (0.32) | 3.55 ± 0.57 ^a | 6.59 (<0.01)* (a, b > c) |
| | ≥ 3 months, < 6months | 40 (25.0) | 4.01 ± 0.60 | | 3.76 ± 0.44 | | 3.70 ± 0.55 ^b | |
| | ≥ 6 months, < 12months | 101 (63.1) | 3.79 ± 0.61 | | 3.73 ± 0.46 | | 3.35 ± 0.51 ^c | |
| Preceptorship Training Period | < 4weeks | 12 (7.5) | 3.62 ± 0.76 | 2.60 (0.08) | 3.68 ± 0.62 | 0.42 (0.66) | 3.17 ± 0.67 ^a | 4.21 (0.02)* (a, b < c) |
| | ≥ 4 weeks, < 8weeks | 99 (61.9) | 3.83 ± 0.59 | | 3.70 ± 0.45 | | 3.42 ± 0.53 ^b | |
| | ≥ 8 weeks | 49 (30.6) | 4.01 ± 0.59 | | 3.77 ± 0.43 | | 3.62 ± 0.51 ^c | |
| Preceptor's work experience | ≥ 1 year, < 3years | 16 (10.0) | 3.66 ± 0.73 | 1.32 (0.27) | 3.46 ± 0.62 ^a | 3.46 (0.02)* (a,b,d <c) | 3.31 ± 0.56 | 0.47 (0.71) |
| | ≥ 3 year, < 5years | 66 (41.3) | 3.92 ± 0.59 | | 3.67 ± 0.41 ^b | | 3.47 ± 0.55 | |
| | ≥ 5 year, < 10years | 63 (39.4) | 3.91 ± 0.64 | | 3.84 ± 0.46 ^c | | 3.49 ± 0.55 | |
| | ≥ 10 years | 15 (9.4) | 3.69 ± 0.38 | | 3.73 ± 0.34 ^d | | 3.46 ± 0.48 | |
| | | | | | | | | |
| Preceptor's Position | Staff Nurse | 80 (50.0) | 3.84 ± 0.62 | -0.68 | 3.61 ± 0.46 | -3.02 | 3.40 ± 0.52 | -1.44 |
| | Charge Nurse | 80 (50.0) | 3.90 ± 0.61 | (0.50) | 3.83 ± 0.43 | (<0.01)* | 3.52 ± 0.56 | (0.15) |

OR; operation room, RR; recovery room, EMC; emergency medical center, ICU; intensive care unit, and AKU; Artificial kidney room.

Table 2

The average of preceptor's mentoring function, and new nurses' self-efficacy and organizational commitment (N = 160).

| Variables | M ± SD | Min | Max | Skewness | Kurtosis |
|----------------------------------|-------------|------|------|----------|----------|
| Mentoring Function | 3.87 ± 0.61 | 2.48 | 5.00 | 0.059 | -0.598 |
| Career development function | 3.89 ± 0.59 | 2.56 | 5.00 | | |
| Psychosocial Function | 3.77 ± 0.69 | 2.00 | 5.00 | | |
| Role Modeling Function | 4.07 ± 0.70 | 2.00 | 5.00 | | |
| Self-Efficacy | 3.71 ± 0.46 | 2.29 | 5.00 | -0.074 | 0.639 |
| Organizational Commitment | 3.46 ± 0.54 | 2.00 | 5.00 | 0.013 | 0.015 |

Table 3

Correlation between the preceptor's mentoring function, and new nurses' self-efficacy and organizational commitment (N = 160).

| Variables | Mentoring Function | Self-efficacy | Organizational Commitment |
|---------------------------|--------------------|----------------|---------------------------|
| | r (p) | r (p) | r (p) |
| Mentoring Function | 1 | | |
| Self-efficacy | 0.48 (< 0.001) | 1 | |
| Organizational Commitment | 0.59 (< 0.001) | 0.50 (< 0.001) | 1 |

Table 4

Factors influencing self-efficacy (N = 160).

| Variables | B | SE | β | t | p | VIF |
|--|------|------|------|------|---------|------|
| Mentoring Functions | 0.38 | 0.05 | 0.50 | 7.38 | < 0.001 | 1.05 |
| Preceptor's Position during the Preceptorship* | 0.10 | 0.08 | 0.11 | 1.27 | 0.21 | 1.61 |
| Preceptor's Period of Work | 0.01 | 0.05 | 0.02 | 0.24 | 0.81 | 1.83 |

R² = 0.37, Adj. R² = 0.30, F = 9.59, p < 0.001

* Preceptor's Position during the Preceptorship = nurse

151) = 9.59, p < 0.001) and the explanatory power of self-efficacy was 30%. The results show that the preceptors' mentoring function (β = 0.50, p < 0.01) affected novice nurses' self-efficacy.

4.6. Effect of preceptors' mentoring function on novice nurses' organizational commitment

To identify factors affecting organizational commitment, which is the purpose of this study, a multiple regression analysis was conducted using only variables showing statistically significant differences in organizational commitment according to general and job characteristics. The results are reported in Table 5. The variance inflation factor for all variables was between 1.01 and 1.06. These are all smaller than 10; thus, there was no multicollinearity problem among the independent variables. The tolerance limit was 0.942–0.991 and the Durbin-Watson score was 1.744; hence, there was no problem of self-correlation.

Table 5

Factors influencing organizational commitment (N = 160).

| Variables | B | SE | β | t | p | VIF |
|----------------------------------|-------|------|-------|-------|---------|------|
| Mentoring Functions | 0.48 | 0.06 | 0.54 | 8.37 | < 0.001 | 1.06 |
| Marriage | -0.38 | 0.20 | -0.12 | -1.91 | 0.06 | 1.01 |
| Period of Work | -0.09 | 0.05 | -0.12 | -1.83 | 0.07 | 1.03 |
| Period of Preceptorship Training | 0.12 | 0.06 | 0.13 | 2.00 | 0.04 | 1.03 |

R² = 0.39, Adj. R² = 0.38, F = 24.86, p < 0.001

Consequently, the basic condition for the multiple regression analysis was satisfied. The regression analysis model was statistically significant (R² = 0.39, F (4, 155) = 24.86, p < 0.001) and the explanatory power of organizational commitment was 38%. Organizational commitment was significantly affected by the preceptors' mentoring functions (β = 0.54, p < 0.01) and the preceptorship training period (β = 0.13, p < 0.05).

5. Discussion

This study originated from the consideration of the improvement plan for the current novice nurse education, using the preceptorship program (O'Brien et al., 2014) because it is an important issue that will retain novice nurses by helping them to adapt well to the hospital environment (Voss et al., 2022). The results of this study are as follows. First, the self-efficacy of novice nurses differed according to the preceptors' work experience and position. Self-efficacy was the highest in the case of preceptors with work experience of 5–10 years, followed by those with more than 10 years of work experience. It was the lowest when preceptors' work experience was 1–3 years. This result is in line with the fact that experienced nurses help improve the self-efficacy of less experienced nurses (Coventry and Hays, 2020). Specifically, this study provides a basis for the period of preceptor's work experience. Self-efficacy also differed according to preceptors' position: it was higher for charge nurses than staff nurses. This may be because to become a charge nurse requires a certain amount of experience; hence, charge nurses may have more work experience and a higher effect on self-efficacy. To improve self-efficacy as a competency in novice nurses (Kim and Kim, 2020), the preceptor should have a minimum number of years of work experience to qualify for preceptorship.

In terms of novice nurses' organizational commitment, this study's results showed significant differences according to their marital status, work experience and preceptorship training period. The married group showed higher organizational commitment than the unmarried group, similar to Shim's (2018) findings. Regarding novice nurses' work experience, the longer the work experience, the higher the organizational commitment. The highest commitment was reported by those with a work experience of 3–6 months. This result is similar to Kim's (2020) study, which shows that the organizational commitment of novice nurses less than seven months is higher. This suggests that the novice nurses' adaptation period of one year is also divided into the period of the initial honeymoon effect and the subsequent period with the adaptation challenge. Next, the longer the preceptorship period above eight weeks, the higher the degree of organizational commitment. That is, a minimum preceptorship period of eight weeks is required to increase the organizational commitment of novice nurses. This can be interpreted as the mentoring function of preceptor nurses guides novice nurses through organizational policies, procedures and routines and helps them to successfully explore the politics and culture of an organization (Bryan and Vitello-Cicciu, 2020). Therefore, to provide appropriate education to improve organizational commitment for novice nurses, a certain length of education period is required. Ideally, novice nurses should be provided with long-term education; however, this is not always possible. Future studies should investigate, examine and verify the necessary duration of the preceptor training period. This requires guidelines that reflect all the characteristics of the nursing work environment, including patient characteristics. In addition, as the preceptorship training period is different for each hospital, government-level recommendations should be made.

In this study, the mentoring function of preceptors was somewhat higher than that in Kim's (2019) study, which considered clinical nurses. Importantly, this study measured the mentoring function of preceptors, not of mentors. This study's scores may be higher because it measured the mentoring function of the person within the organization with whom nurses communicated frequently over a specific period. This supported Shim's (2018) finding that there is a statistically significant difference in the mentoring function in work performance with the help of mentors

and the number of mentor meetings. Therefore, it is confirmed that the mentoring function of preceptors who have a close relationship with novice nurses is important (Voss et al., 2022) and mentoring improvement education for preceptors who educate novice nurses is necessary. Novice nurses' organizational commitment was significantly lower than that in Shim (2018), which is a precedent study on the organizational commitment of nurses according to mentor types. The mentoring function perceived by novice nurses in this study was like that of Shim (2018). However, among the three sub-functions of mentoring, the psychological and social functions were somewhat higher than the scores measured in this study. While this study did not attempt to verify the effect of the mentoring function of each sub-area on specific factors, it is necessary to identify the effect of each sub-area of mentoring function on organizational commitment in future studies.

The results of this study suggest the following. It is necessary to foster the socialization education of novice nurses more comprehensively, rather than simply implement technical education or "help" adaptation to novice nurses through a preceptorship program. Mentoring enables this. Specifically, this study also confirmed that mentoring in nursing education is a powerful method (Voss et al., 2022) that can be used in a medical environment to support a successful transition from a novice nurse to a skilled one. The need for effective education for the growth and development of novice nurses is not just for hospitals and nurses, but to provide optimal patient care (Bryan and Vitello-Cicciu, 2020; Coventry and Hays, 2020). Therefore, particularly, education and fostering between preceptor nurses and novice nurses should receive institutional support in hospitals. It is, thus, necessary to reorganize the preceptor education program so that preceptor nurses receive a high level of mentoring. Rather than only focusing on basic nursing practice, current preceptor education programs should be innovated on an in-depth education program should be developed and implemented to improve career, psychosocial and role modeling functions among the identified mentoring functions in this study.

5.1. Implication to practice

The results of this study highlight some aspects that are applicable to new nurse education programs. First, if the preceptorship period is more than eight weeks, novice nurses' organizational commitment increases with the length of the preceptorship training period. Second, preceptors' mentoring function has a significant positive effect on novice nurses' self-efficacy and organizational commitment; that is, novice nurses' self-efficacy and organizational commitment increases directly in proportion to the preceptors' mentoring function. Therefore, the ratio of contents to the education program for preceptor nurses should be increased in terms of reliable mutual relationship formation methods, mutual respect, scheduled meeting use, mentor availability and support and constructive feedback provision methods, which are the core elements of mentoring (Wynn et al., 2021).

6. Limitations

This study has some limitations. First, the findings of this study may have limited generalizability. This is because this study used convenience sampling, of novice nurses at only three university hospitals. The use of convenience sampling can be a limitation of research, as suggested by Etikan et al. (2016). Second, the data of this study were collected from self-administered questionnaires, which may have created limitations due to the bias of participants. Also, the fact that novice nurses evaluated preceptor nurses can also be a limitation. Finally, there may be limitations to the reliability and validity of the instruments.

7. Conclusion

This study showed that the preceptors' mentoring function as

perceived by novice nurses affects their self-efficacy and organizational commitment. Given this effectiveness of preceptors as mentors, it is necessary to provide education to improve preceptors' mentoring functions in educational programs for improved outcomes for novice nurses. In addition, the duration of the preceptorship training period affects organizational commitment. Hence, novice nurses should be trained for a specified minimum period to increase their organizational commitment.

Ethics approval

Approval was obtained from the Institutional Review Board (IRB) of C Hospital in Gyeonggi-do was obtained (IRB No. 2020-07-043-003).

CRedit authorship contribution statement

EC and SY were responsible for the conception and design of the study and revising the manuscript. EC was responsible for data collection, analysis, and drafting the manuscript. EC and SY were all responsible for final approval of the version of the manuscript to be published. Each author takes public responsibility for the content of the manuscript and has agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflicts of interest

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