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Investigation of The Relationship Between Emotional Self Efficacy and Critical Thinking Disposition in Surgical Nurses

Cerrahi Hemşirelerinin Duygusal Öz Yeterlikleri ile Eleştirel Düşünme Eğilimleri Arasındaki İlişkinin İncelenmesi

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Abstract

Aim: The aim of this study was to examine the relationship between emotional self-efficacy and critical thinking in surgical nurses working in surgical departments.

Method: A cross-sectional, descriptive, correlational study was conducted to examine the relationship between the emotional self-efficacy and critical thinking dispositions of surgical nurses living in a city in the Middle Black Sea region of Turkey. Data were collected via an online survey created with Google Forms from a total of 127 nurses recruited using snowball sampling between June 1 and September 30, 2020. Descriptive statistics, Mann-Whitney U, Kruskall-Wallis test, ANOVA, and Pearson correlation analysis were used to evaluate the data.

Results: The nurses' mean critical thinking disposition score was 70.23 (SD=8.41) and their mean emotional self-efficacy score was 88.03 (16.20). There was a weak positive correlation between critical thinking disposition and emotional self-efficacy scores (r=0.213).

Conclusion: Critical thinking and emotional self-efficacy are important for healthy clinical decision-making in surgical nurses. In this sense, nurses' critical thinking and emotional self-efficacy were found to be moderate. Emotional self-efficacy is needed to develop critical thinking skills. It is recommended to provide critical thinking and emotional self-efficacy training in order to positively change the quality of the decisions made by surgical nurses during the care process and the quality of care provided.

Keywords: Critical thinking, emotional self-efficacy, surgical nurse.

Öz

Amaç: Literatürde cerrahi hemşirelerinin öz yeterlik ve eleştirel düşünme özelliklerini ayrı ayrı inceleyen çok sayıda çalışma olmasına karşın, duygusal öz-yeterlik kavramı ile eleştirel düşünme eğilimi arasındaki ilişkiyi değerlendiren bir çalışmaya rastlanmamıştır. Bu çalışmanın amacı cerrahi kliniklerde çalışan hemşirelerin duygusal öz yeterlikleri ile eleştirel düşünme eğilimleri arasındaki ilişkiyi incelemektir.

Yöntem: Türkiye'nin Orta Karadeniz Bölgesi'ndeki bir şehirde yaşayan cerrahi hemşirelerinin duygusal öz-yeterlik ve eleştirel düşünme eğilimleri arasındaki ilişkiyi incelemek amacıyla kesitsel, tanımlayıcı, ilişkisel bir araştırma yapılmıştır. Veriler, "Google Form" oluşturularak çevrim içi anket yoluyla kartopu örnekleme yöntemiyle toplam 127 hemşireden 1 Haziran–30 Eylül 2020 tarihleri arasında toplanmıştır. Verilerin değerlendirilmesinde tanımlayıcı istatistikler, Mann-Whitney U, Kruskall-Wallis testi, ANOVA ve Pearson korelasyon analizi kullanılmıştır.

Bulgular: Hemşirelerin eleştirel düşünme eğilimleri puan ortalamaları 70.23 (SS=8.41) ve duygusal öz yeterlik puan ortalamaları ise 88.03 (SS=16.20)'dir. Eleştirel düşünme eğilimi ile duygusal öz yeterlik puanları arasında olumlu yönde zayıf bir ilişki vardır (r=0.213).

Sonuç: Cerrahi hemşirelerinde eleştirel düşünme ve duygusal öz yeterlik sağlıklı klinik karar verme açısından önemlidir. Bu anlamda hemşirelerin eleştirel düşünme ve duygusal öz yeterlilikleri orta düzeyde bulunmuştur. Eleştirel düşünme becerilerinin geliştirilmesi için duygusal öz yeterliğe gereksinim duyulmaktadır. Cerrahi hemşirelerinin bakım sürecinde aldığı kararların niteliğini ve verilen bakımın kalitesini olumlu yönde değiştirmek için eleştirel düşünme ve duygusal öz yeterlilik eğitimlerinin verilmesi önerilmektedir.

Anahtar Sözcükler: Cerrahi hemşiresi, duygusal öz yeterlik, eleştirel düşünme.

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Introduction

Self-efficacy is the power that enables individuals to objectively evaluate their capabilities to carry out the actions needed to achieve their goals (Bandura, 1997). Emotional self-efficacy can be defined as an individual's self-perceived abilities, evaluation of these abilities, and forming an opinion related to them (Totan et al., 2010). This concept can be used in general, academic, social, and psychological fields and encompasses emotional intelligence (Chang et al., 2019). Emotional intelligence includes the ability to understand and evaluate one's emotions, while emotional self-efficacy is the belief that one has this ability and can use it functionally (Qualter et al., 2015). Emotional functioning can only be achieved through emotional regulation. Having this skill offers many advantages in surgical nursing, as it gives nurses the ability to better understand and regulate their own emotions (Pacaric et al., 2018). In addition, this skill facilitates problem-solving and enables faster decision-making in unexpected and life-threatening situations in surgical departments, and helps nurses evaluate patient care from a humanistic perspective. In other words, emotional self-efficacy has a favorable impact on nurses' critical thinking processes in clinical settings (Totan, 2015).

The American Philosophical Association (APA) has defined critical thinking as purposeful and self-regulatory judgment resulting in interpretation, analysis, evaluation, and inference (Potter, 2009). Therefore, it requires the ability to assess, weigh evidence, and consider opposing ideas and alternative hypotheses. In other words, it allows individuals to see events from multiple perspectives. As in most professions, critical thinking is important in nursing and forms the basis of nursing practices (Jafari et al., 2019). Improving critical thinking skills teaches nurses to discern important information from extraneous details, when to trust their intuition, and how to approach patients (Zuriguel-Pérez et al., 2015). It also enables nurses to question events and make patient-centered decisions. As a result, nurses can apply a logical filter to their education, professional experience, and research findings and more easily incorporate them into care (Kim et al., 2015; Sarıtaş and Yıldırım, 2020). Critical thinking skills are essential for nurses to respond quickly and appropriately when caring for patients in critical periods before, during, and after surgery. A critically thinking nurse avoids malpractice by questioning the causal relationship behind every intervention (Jones, 2010; Mahmoud and Mohamed, 2017; Sarıtaş and Yıldırım, 2020). Therefore, the better nurses can think critically, the more effectively they can protect and promote health and improve the quality of life of surgical patients and thus the society as a whole (Gloudemans and Schalk, 2013; Handiyani et al., 2019; Sarıtaş and Yıldırım, 2020). Although there are many studies in the literature evaluating critical thinking (Kim et al., 2015; Sarıtaş and Yıldırım, 2020; Zuriguel-Pérez et al., 2015), there are few studies on their self-efficacy (Gloudemans and Schalk, 2013; Handiyani et al., 2019). As the emotional self-efficacy of nurses can affect their critical thinking, it is important to evaluate these two concepts together. To our knowledge, no previous study has analyzed these two concepts together in nurses or surgical nurses.

Method

Aim of the Research: To examine the relationship between emotional self-efficacy and critical thinking in surgical nurses working in surgical departments.

Research Design: The study is cross-sectional, descriptive, and correlational.

Research Questions: In line with the purpose of the research, answers to the following questions were sought.

- What are the emotional self-efficacy and critical thinking disposition levels of surgical nurses?
- Is there a relationship between surgical nurses' descriptive characteristics, emotional self-efficacy levels and critical thinking dispositions?
- Is there a relationship between the emotional self-efficacy levels of surgical nurses and their critical thinking dispositions?

Research Population and Data Set: The study was conducted with nurses working in surgical departments between June 1 and September 30, 2020. The snowball method of convenience sampling, which is one of the non-probability sampling methods, was used. The link to an online survey created on Google Forms was sent to nurses living in a city in the Middle Black Sea region of Turkey. They were asked to forward it to their surgical nursing colleagues via a social media application. Using this method, 127 nurses working in surgical departments were recruited to participate. Inclusion criteria were being a surgical nurse, being actively employed, and volunteering to participate in the study.

Data Collection Tools: The Emotional Self-Efficacy Scale (ESES), The Critical Thinking Dispositions Scale (CTDS), and the Questionnaire Form prepared by the researchers were used to determine the sociodemographic characteristics, emotional competence, and critical thinking levels of the surgical nurses.
Questionnaire Form: The first part of the online survey included eight questions about the sociodemographic characteristics of the nurses and three questions about their thoughts regarding critical thinking and emotional self-efficacy (Aypay, 2010; Sarıtaş and Yıldırım, 2020).
The Emotional Self-Efficacy Scale (ESES): It was developed by Kirk et al. (2008) and adapted into Turkish by Totan et al. (2010). The scale consists of 32 items rated on a 5-point Likert-type scale. The scale has 4 subscales: regulating emotions, using emotions to facilitate thought, understanding emotions, and perceiving emotions. The minimum score is 32 and the maximum score is 160. Higher scores correspond to higher levels of emotional self-efficacy, while lower scores reflect inadequate or limited emotional self-efficacy. The Cronbach's alpha value of the scale was 0.96 in the study by Kirk et al. and 0.93 in the study by Totan et al. (Kirk et al., 2008; Totan et al., 2010). In the present study, the Cronbach's alpha value was 0.94.
The Critical Thinking Dispositions Scale (CTDS): It was developed by Akbıyık in 2002. The items in the scale were based on the critical thinking dispositions identified by Ennis (1985). It consists of 30 items rated on a 5-point Likert-type scale. Negatively worded items (4, 11, 13, 14, 17, 19, 24, 26, and 27) are reverse scored. The total score ranges from 30 to 150, with higher scores indicating a greater tendency to think critically. The Cronbach's alpha coefficient of the scale was calculated to be 0.87 (Akbıyık, 2002) and was 0.86 in the present study.

Data Collection: Data were collected using an online survey created using Google Forms. A link to the questionnaire was generated and sent through social communication networks to invite nurses to participate in the study. The first page of the online questionnaire included general information about the purpose and nature of the study and an informed consent statement. Respondents who fully completed the online questionnaire were considered to have consented to be included in the study.

Statistical Analysis: The data obtained were analyzed with number, percentage, mean, standard deviation, Mann-Whitney U and Kruskal-Wallis test, and ANOVA using SPSS version 23.0 statistical package program. The Shapiro-Wilks (W) test was used to determine whether the data were normally distributed. The Mann-Whitney U test was used for non-normally distributed bivariate data. The Kruskal-Wallis test was used for data with more than two variables that were not normally distributed. ANOVA was used for normally distributed data with more than two variables. In cases where homogeneity of variance was not achieved for multiple comparisons, Tamhane's T2 analysis was performed to determine between which groups the difference was. Pearson correlation coefficients were calculated to examine the relationships between the variables. A P-value less than 0.05 was considered significant.

Ethical Aspect of the Study: The study was approved by the Social and Human Sciences Ethics Committee of the researchers' institution (29.05.2020, 2020/316). The first page of the online questionnaire included general information about the purpose and nature of the study and an informed consent statement. Respondents who fully completed the online questionnaire were considered to have consented to be included in the study. At the same time, permission to use the scales was obtained from the scale developers.

Findings

Table 1. Characteristics of the participants (N:127)

	Mean (SD)	Min-Max
Age (years)	31.02 (7.44)	21-50
	n	**%**
Sex		
Female	97	76.40
Male	30	23.60
Professional Experience (years)		
0-1	14	11.00
2-5	33	26.00
6-10	34	26.80
>10	46	36.20
Loves Being a Nurse		
Yes	104	81.90
No	23	18.10
Nursing Was First Choice of Profession		
Yes	88	69.30
No	39	30.70
Education Level		
High school Degree	13	10.20
Associate Degree	17	13.40
Undergraduate Degree	67	52.80
Postgraduate Degree	30	23.60
Believes They Are Knowledgeable About Critical Thinking		
Yes	74	58.30
No	53	41.70
Perceived Self-efficacy		
Very High	10	7.90
High	54	42.50
Moderate	61	48.0
Low	2	1.60

SD: Standard deviation; n: number; %: percentage

The mean age of the nurses participating in the study was 31.02 (SD=7.44) years, 76.4% were female, and 52.8% had a bachelor's degree. Professional experience of more than 10 years was reported by 36.2% of the nurses, 81.9% said that they loved being a nurse, and 69.3% stated that nursing was their first choice of profession. Perceived emotional self-efficacy was rated as moderate by 48% of the nurses, while 58.3% considered themselves knowledgeable about critical thinking (Table 1).

Table 2. The Emotional Self-Efficacy Scale and The Critical Thinking Dispositions Scale mean scores of the participants (N:127)

	Min – Max	Mean (SD)
ESES	36-156	88.031 (16.195)
Regulating Emotions	9-42	25 (3.48)
Using Emotions to Facilitate Thought	7-38	20 (4.05)
Understanding Emotions	7-40	24 (4.66)
Perceiving Emotions	5-32	19 (5.56)
CTDS	40-140	70.226 (8.408)

CTDS: Critical Thinking Dispositions Scale, ESES: Emotional Self-Efficacy Scale, SD: Standard deviation

The surgical nurses had a mean total ESES score of 88.03±16.20 and a mean total CTDS score of 70.23 (SD=8.41). ESES subscale mean scores were found to be Regulating Emotions: 25 (SD=3.48), Using Emotions to Facilitate Thought: 20 (SD=4.05), Understanding Emotions: 24 (SD=4.66), Perceiving Emotions: 19 (SD=5.56) (Table 2).

Table 3. Comparison of mean The Emotional Self-Efficacy Scale and The Critical Thinking Dispositions Scale scores according to the participants' characteristics (N:127)

Characteristic	ESES Mean (SD)	Test statistic and p value	CTDS Mean(SD)	Test statistic and p value
Age (years)	r = -0.187* **p = 0.036***		r = -0.075* p = 0.400	
Sex				
Female	59.66 (12.55)	Z = -2.391	64.41 (8.32)	Z = -0.224
Male	78.03 (9.11)	**p = 0.017***	62.68 (7.78)	p = 0.822
Education Level				
High school[a]	62.82 (6.44)	KW=1.307	65.13 (6.51)	KW = 0.156
Associate Degree[a]	62.08 (7.81)	p = 0.778	65.96 (5.67)	**p = 0.004****
Undergraduate[b]	64.12 (8.04)		61.62 (7.88)	c>b>a
Postgraduate[c]	77.17 (9.54)		75.08 (9.43)	
Professional Experience (years)				
0-1	116.37 (9.21)	F = 0.450	90.00 (7.55)	F = 0.228
2-5	119.95 (14.10)	p = 0.718	101.43 (8.99)	p = 0.869
6-10	69.00 (17.82)		85.11 (9.58)	
>10	72.00 (16.19)		89.26 (9.83)	
Nursing Was First Choice of Profession				
Yes	67.73 (8.33)	Z = -1.715	65.36 (8.31)	Z = -0.625
No	55.59 (5.67)	p = 0.086	60.94 (6.77)	p = 0.532
Loves Being a Nurse				
Yes	65.50 (7.88)	Z = -0.974	63.64 (9.70)	Z = 0.232
No	57.78 (9.12)	p = 0.330	65.61 (9.24)	p = 0.817
Believes They Are Knowledgeable About Critical Thinking				
Yes	67.60 (7.90)	Z = -0.680	61.79 (8.34)	Z = -0.419
No	62.63 (6.91)	p = 0.640	64.84 (11.01)	**p = 0.015***
Perceived Self-efficacy				
Very High[a]	112.60 (7.90)	KW =33.188	95.45 (9.85)	KW = 11.344
High[b]	78.31 (11.23)	**p < 0.001*****	70.17 (7.25)	p = 0.510
Moderate[c]	45.29 (8.16)	a>c, a>d	45.29 (7.31)	
Low[d]	56.50 (7.25)		54.82 (11.32)	

SD: Standard deviation; n: number; %: percentage

F: One-Way ANOVA, KW: Kruskal-Wallis test, Z: Mann-Whitney U test, r: Correlation coefficient

*p<0.05, **p<0.01

Mean ESES scores differed significantly according to the nurses' age, sex, and perceived emotional self-efficacy, while mean CTDS scores differed significantly according to education level and perceived knowledge of critical thinking (p<0.05) (Table 3). As the perceived emotional self-efficacy levels of the nurses increased, the mean ESES score also increased. At the same time, female nurses have higher ESES mean scores than male nurses, and older nurses than younger nurses. On the other hand, as the education level of the nurses increased, their perceived knowledge level about critical thinking increased, and it was observed that the CTDS mean score increased. However, the scores for neither scale differed significantly based on preference or love of the profession or years of professional experience (p>0.05) (Table 3).

Table 4. Correlation values between participants' Emotional Self-Efficacy Scale and Critical Thinking Dispositions Scale scores

		ESES	CTDS
ESES	r	1	0.213
	p	-	0.016*
CTDS	r	0.213	1
	p	0.016*	-

r: Pearson correlation coefficient

*p<0.05

There was a very weak positive correlation between ESES and CTDS scores (r=0.213, p<0.05, Table 4).

Table 5. Correlation values between participants' Critical Thinking Dispositions Scale, Emotional Self-Efficacy Scale and Emotional Self-Efficacy Scales' sub-dimensions scores

		Regulating Emotions	Using Emotions to Facilitate Thought	Understanding Emotions	Perceiving Emotions
ESES	r	0.210	0.160	0.120	0.134
	p	0.026*	0.024*	0.040*	0.017*
CTDS	r	0.222	0.133	0.213	0.120
	p	0.016*	0.008**	0.015*	0.034*

r: Pearson correlation coefficient

*p<0.05, **p<0.01

There was a very weak positive correlation between ESES and ESES' subscale scores (Regulating emotions, Using emotions to facilitate thought, Understanding emotions, Perceiving emotions) (r=0.21, r=0.16, r=0.12, r=0.13 and p<0.05, Table 5). Similarly, there was a very weak positive correlation between CTDS and ESES' subscale scores (Regulating emotions, Using emotions to facilitate thought, Understanding emotions, Perceiving emotions) (r=0.22, p<0.05; r=0.133, p<0.01; r=0.213, p<0.05, and r=0.120, p<0.05, Table 5).

Discussion

This study demonstrates the relationship between emotional self-efficacy and critical thinking dispositions of surgical nurses and examines the effect of their sociodemographic and professional characteristics on these parameters.

The surgical nurses included in our sample were found to have moderate levels of emotional self-efficacy. High levels of self-efficacy were reported among nurses in a study conducted by Yilmaz-Kocak and Buyukyilmaz (2019) in Turkey. While the highest score that could be obtained from the Self-Efficacy Scale they used was 115, the score obtained by the nurses in the study class was 86.93 (SD=12.76). The discrepancy between our results and the literature suggests that differences in the clinical setting studied and in nursing education may have an effect on emotional self-efficacy.

A weak but significant negative relationship was found between age and the level of emotional self-efficacy in the nurses who participated in this study. Aypay (2010) reported a positive correlation between age and general self-efficacy. A similar conclusion was reached by Yilmaz-Kocak and Buyukyilmaz (2019). This may be due to the increase in the care experiences of nurses as they get older. However, Türe and Akkoc (2019) found that nurses in the 31-35 year age group had higher perceived self-efficacy than nurses in the 36-40 age group. Our results are consistent with these findings. In contrast, there are other studies in which nurses' self-efficacy was not associated with their age or sex (Handiyani et al., 2019; Sarıtaş and Yıldırım, 2020). This may be attributable to differences in the clinical setting and education level.

In the present study, no significant relationship was found between the nurses' education and emotional self-efficacy level. This is consistent with the results reported by Handiyani and friends (2019); Yilmaz-Kocak and Buyukyilmaz (2019). However, Ture and Akkoc (2019) found that nurses' self-efficacy increased with education level. This may be due to differences in nursing education.

In our study, it was determined that nurses who had completed postgraduate education had significantly higher critical thinking disposition, although this relationship between education and critical thinking was not observed at the lower education levels. Shin and friends (2006) also concluded that higher education level was associated with a higher level of critical thinking disposition. However, Fero and friends (2009) found that there is no relationship between the level of critical thinking and education level in their study. This may also be explained by differences in nursing education curricula and content. The nurses' mean CTDS scores were not statistically associated with age or sex in the present study, which seems to be consistent with the literature (Kobya- Bulut and Bulut, 2020; Polat et al., 2019). This indicates that critical thinking is not a skill that is spontaneously acquired (or lost) as one ages. This may be due to traditional teaching methods used in nursing education in our country, with insufficient emphasis on critical thinking in the curriculum and limited opportunities to develop critical thinking (Polat et al., 2019).

Duration of professional experience was not associated with critical thinking disposition or emotional self-efficacy in the present study. Previous studies have indicated that the quality of professional experience, rather than the duration, is important for the acquisition of critical thinking skills (Kobya- Bulut and Bulut, 2020). Yilmaz-Kocak and Buyukyilmaz (2019) determined in their study that emotional self-efficacy increased with years of work experience. The discrepancies among these studies may be related to the fact that the undergraduate nursing curriculum is not uniform in our country, and critical thinking courses are offered as elective courses in some faculties. A weak but significant positive relationship between emotional self-efficacy level and critical thinking dispositions was observed in this study. It has been previously reported that individuals with high levels of self-efficacy are more likely to have traits such as seeking solutions and being patient when faced with a problem, and have better cognitive performance (Bandura, 1997; Endler et al., 2001). Emotional self-efficacy, which can be described as the belief in one's ability to functionally apply emotional intelligence, also has a positive impact on an individual's critical thinking processes (Gloudemans and Schalk 2013; Hasanpour et al., 2018). Critical thinking is the review of all the information obtained and the objective evaluation of events, and the acquisition of critical thinking skills provides individuals with the opportunity to evaluate events in a multidimensional way (Zuriguel-Pérez et al., 2015). Critical thinking skills are important in a profession such as surgical nursing, which requires providing care in all of the pre-, intra-, and post-operative processes of the patient, predicting and intervening in all the effects that the surgical operation may have on the individual. Therefore, it is thought that critical thinking and emotional self-efficacy skills are important for surgical nursing. However, it is thought that the reason why the critical thinking skills of the nurses participating in the research are not high may be the limited educational opportunities to gain this skill, the expectation of nurses to perform only routine practices, the inability to fully implement the nursing care process, and the tendency to maintain habits (Dikmen and Usta, 2013; Mahmoud and Mohamed, 2017).

The nurses in this study exhibited moderate critical thinking disposition. Mahmoud and Mohamed (2017) found that nurses had low critical thinking disposition scores, Saritas and Yildirim (2020) also reported a low level of critical thinking in their study of operating room. These differences in critical thinking levels may be due to factors such as differences in the education system, working conditions, institutional procedures and expectations, and job dissatisfaction (Fero et al., 2009; Peixoto and Peixoto, 2017). The perioperative environment is complex and fast-paced and involves unique and often unpredictable situations. Critical thinking skills enable perioperative nurses to adapt and function effectively in this ever-changing environment (Jafari et al., 2019). Surgical nurses with high emotional self-efficacy and critical thinking skills can more easily evaluate and respond faster to unexpected and critical situations requiring rapid decision-making. We believe that emotional self-efficacy and critical thinking skills in surgical nurses can positively impact their clinical decision-making and problem-solving, and are necessary to ensure safe, thorough, individualized, effective, and innovative perioperative patient care.

Conclusion and Recommendations

This study showed that surgical nurses had moderate to high emotional self-efficacy and moderate critical thinking disposition. At the same time, the mean ESES scores differed significantly by the nurses' age, sex, and perceived emotional self-efficacy, while mean CTDS scores differed significantly according to education level and perceived knowledge of critical thinking ($p<0.05$). However, scores for neither scale differed significantly based on preference or love of the profession or years of professional experience ($p>0.05$). There was a very weak positive correlation between ESES and CTDS scores ($r=0.213$, $p<0.05$).

The fact that emotional self-efficacy increases with age shows that if surgical nurses are introduced to this concept, it can increase throughout their professional life. Nurses should become acquainted with the concept of emotional self-efficacy and develop critical thinking skills during their undergraduate education. Emotional self-efficacy is important in the development of critical thinking skills in surgical nurses. The quality of the decisions made by surgical nurses with improved emotional self-efficacy throughout the surgical care process and the quality of the care provided will increase.

The main barriers to developing emotional self-efficacy and critical thinking in clinical settings are time constraints and nurses' heavy workload. Therefore, strategies for improving these skills need to be developed, implemented, and evaluated. Nurses who implement strategies and develop these skills can be motivated with rewards. It is recommended to provide critical thinking and emotional self-efficacy training in order to positively change the quality of the decisions made by surgical nurses during the care process and the quality of care provided.

Limitations: This study has some limitations. The scales used in the study are general and not specific to nursing. Also, since this study only includes surgical nurses, it cannot be generalized to all nurses.

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