L-Università ta' Malta
Centre for Resilience & Socio-Emotional Health

International Journal of Emotional Education
ISSN: 2073 7629

Volume 15 Number 1, April 2023 pp 89 - 104

www.um.edu.mt/ijee

A study of the relationship between ethical sensitivity and emotional intelligence in nursing, anesthesia, and operating room students

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When providing healthcare services, healthcare students face a variety of ethical issues and conflicts daily. Such characteristics as ethical sensitivity and emotional intelligence are influential in determining an individual's performance and can prove useful in coping with challenges in life. Given the significance of these two variables in the career prospects and educational and professional lives of students, the present cross-sectional study with 486 students majoring in nursing, operating room, and anesthesia, aims to investigate the relationship between ethical sensitivity and emotional intelligence. Data were collected using demographics, ethical sensitivity, and emotional intelligence. The students' ethical sensitivity level was high, while their emotional intelligence was average. Regression analysis revealed that students' ethical sensitivity was related to their emotional intelligence and gender. There is also a significant correlation between ethical sensitivity and emotional intelligence on one hand and gender on the other: female students possess higher levels of ethical sensitivity, while male students have greater emotional intelligence. Students in nursing schools may benefit from greater insight into the concepts of ethical sensitivity and emotional intelligence and ways to enhance them.

Keywords: ethical sensitivity, emotional intelligence, nursing students, operating room, anesthesia.

First submission 25th June 2022; Accepted for publication 16th January 2023

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https://doi.org/10.56300/JAER8536

ISSN 2073 7629

Introduction

In today's challenging healthcare environments, ethical complications have become an inherent part of nursing practices and principles (Canadian Nursing Association (CNA), 2017). Different national and international nursing associations, including the International Council of Nurses (ICN), the American Nurses Association (ANA), the Canadian Nursing Association (CNA), the UK Nursing and Midwifery Council, and the Iranian nursing organization, have published codes of ethics for nurses to guide their ethical practice and decision-making (International Council of Nurses, Revised 2021; American Nurses Association, 2001; Canadian Nurses Association, 2017; The Nursing and Midwifery Council; Sanjari et al., 2011; Wagner and Dahnke, 2015).

Many nurses, however, have to deal with various ethical challenges in their profession, which can put their health at risk (Shayestehfard et al., 2020; Ki et al., 2012). Deterioration in the health status of nurses not only reduces the quality of their lives but results in a decrease in the quality of care provided by them (Ki et al., 2020). In their profession, Iranian nurses are often faced with a variety of physical and emotional challenges, including a lack of human resources in nursing, poor job satisfaction, unsatisfactory social status, and a lack of courses on ethics in the nursing curriculum (Noroozi et al., 2020). In the Iranian culture and among Iranian healthcare providers, ethical care values are highly regarded. Yet, there are many obstacles to educating students on ethics in Iran. Among them there is a disregard for modern learning techniques, lack of organized content on ethics, educating students in ethical subjects unrelated to their field, shortage of experienced and trained instructors in the field of ethics, lack of quality curriculum sources, low enthusiasm and motivation to enter the nursing profession, insufficient self-awareness and ethical sensitivity in students, and failure to evaluate students' ethical, professional and psychological abilities, including emotional intelligence (Shayestehfard et al., 2020).

In the schools of medical sciences in Iran, the academic majors of operating room and anesthesia are treated as completely distinct from nursing according to the national curriculum. After passing the entrance exam, candidates can major in the fields of anesthesia and operating room, which were established to train competent human resources for patient care in the operating room. A bachelor's degree program in these fields lasts four years, during which period students are required to take theoretical, practical, and training courses in academic and clinical environments.

The general goals of the program for operating room undergraduates are to train expert and committed individuals as primary members of surgical teams who can participate in surgeries and pre- and post-operative care. The program for anesthesia undergraduates aims to train professionals who can, under the supervision of an anesthetist, participate in the administration of anesthetics, maintenance of anesthesia, and waking up patients in specialized surgeries, and caring for patients in post-anesthesia care units (PACU), acute pain management service (APMS) and cardiopulmonary-cerebral resuscitation (CPCR).

It is noticeable that while nursing personnel and students are both exposed to various ethical issues and conflicts while providing healthcare services (Albert et al., 2020); the latter are less experienced and lack

the necessary skills and self-confidence in coping with the ethical issues existent in healthcare systems (Bickhoff et al., 2017). Even though nursing students are introduced to different ethical principles during their education, they may find the application of these principles distressful, which can be attributed to inadequate support for them in clinical environments, fear of consequences, and inter-professional conflicts (Serçekuş & Başkale, 2016). According to previous studies, students' exposure to ethical issues can afflict them with emotional problems, including ethical anxiety and emotional distress, with adverse effects on their clinical learning and professional growth (Bickhoff et al., 2017; Escolar-Chua, 2018).

Originating from nursing ethics, ethical sensitivity is an important competence in nurses which helps them make ethical decisions and manage ethical issues in the healthcare system (Zhang et al., 2020; Borhani et al., 2017). It enables nurses to judge every act in terms of its ethical implications and make appropriate ethical decisions (Zhang et al., 2020). However, nurses often fail to realize the ethical aspects of their behaviours because their abilities and knowledge are tried in clinical practice every day, which leads to ethical issues (Yasin et al., 2020).

There is no doubt that individuals who possess ethical sensitivity can analyze emotions and reactions more appropriately. They can also use their moral imagination to predict the possible effects of their behaviours on others (Milliken & Grace, 2017). Nurses should be prepared for ethical dilemmas and the complications which ensue from them. Therefore, they need to develop their ethical sensitivity, which affects their ethical performance, for the benefit of their patients to better cope with conflicts and barriers to patient care (Schallenberger et al., 2019).

Emotional intelligence is as essential as ethical sensitivity in finding solutions and making decisions (Zhang et al., 2020; Angelidis and Ibrahim, 2011). Studies show that nursing care behaviour is influenced by emotional intelligence, and nurses can increase ethical sensitivity, improve the quality of care, and develop positive coping strategies by raising their level of emotional intelligence. (Taylan et al., 2021).

Literature reports that ethical sensitivity in nurses is correlated with different mental abilities, one of which is personal intelligence (Mayer et al., 2012). It should be noted that personal intelligence is broader than emotional intelligence and comprises a range of intelligence types, including social, emotional, and practical (Mayer et al., 2010). Emotional intelligence is one of the most critical factors in making appropriate decisions. It also involves the correct use of emotions in relationships and the ability to lead other people (Angelidis and Ibrahim, 2011). The importance of emotional intelligence as well as ethical sensitivity in nursing care has been demonstrated by numerous studies (Taylan et al., 2021; Raghubir, 2018; Fujino et al., 2015).

Conceptually, emotional intelligence is a unique personality trait that can be taught and corrected. It can help perceive, regulate, and use emotions (Wang et al., 2018). Higher levels of emotional intelligence correlate with better psychological adaptation, self-compassion, empathy, resilience, social support and care, among many other items. Low emotional intelligence, on the other hand, correlates with fatigue and stress. Many of the above-mentioned factors influence care directly or indirectly because they determine a care provider's ability to comply with the principles of care, even in critical conditions (Nightingale et al., 2018).

In particular, nurses with satisfactory emotional intelligence are very successful at providing quality healthcare services to their patients, which results in higher patient satisfaction. High emotional intelligence enables individuals to better understand interpersonal communication, have better listening skills, and have a better understanding of their colleagues (Hajibabaee et al., 2018). Emotional intelligence is known to be an influential factor in the professional performance and mental health of healthcare professionals (Sarabia-Cobo et al., 2017).

In recent decades, physical, emotional, and psychological issues in clinical environments have become a major global problem in healthcare management, which lead to an increase in ethical distress and subsequent burnout (Kakemam et al., 2019) and adversely affected the care providers' performance (Canadian Nursing Association (CNA), 2017.). In general, emotional intelligence is significantly correlated with psychological health, psychosomatic disorders, and physical health. Many students begin their clinical training with enthusiasm and love for humanity and idealism but lose their vision on the way. The challenges that students are faced with include social responsibilities, demanding clinical and professional training, and creating a balance to maintain their happiness (Ghahramani et al., 2019).

In addition to the physical and psychological problems which they have to deal with every day, nurses have to face the ethical challenges which have arisen in modern healthcare systems following global medical developments. Ethical norms in a society are largely influenced by, not only global ethical standards, but the socio-demographic factors, such as dominant religion, culture, and behavioural patterns of that society (Noroozi et al., 2020).

Some studies have shown that demographic characteristics have a considerable impact on students' moral behaviour and psychological attitudes (Bordbar et al., 2011; Noroozi et al., 2020; Ghahramani et al., 2019). Theories of moral judgement development that discuss gender differences and gender bias have attracted considerable attention both in moral psychology and moral philosophy. In fact, there has been a persistent myth throughout history that men are more rational than women, but women are more caring. (You et al., 2011; Waithe, 1989). Likewise, an analysis of the literature related to emotions and emotional intelligence reveals that men and women differ significantly in aspects related to the emotional world (Fernández-Berrocal et al., 2012). Similarly, various studies have shown that people have different ethical and emotional attitudes depending on their demographic characteristics (Cabello et al., 2016; Shukla and Srivastava, 2016; Tuvesson and Lützén, 2017; Yanti and Krisnawati, 2020).

In view of their crucial part in maintaining patient safety and providing quality care to patients, nurses are expected to possess satisfactory ethical and psychological competence. Accordingly, the educational system should systematically evaluate the ethical, professional, and psychological competence of students and be committed to provide graduates with an education that meets the above-mentioned criteria and actively contributes to a constant improvement in patient care (Balakas & Smith, 2016). In other words, it is essential to determine whether students preparing to enter the nursing profession in the future will be able to regulate their emotions in accordance with ethical standards.

Considering the significance of teamwork in the operating room and the difficulties and challenges inherent in working in this environment, as well as the fact that not many studies have focused on students, it appears that there is a need for more research into concepts related to the professional performance and health of nursing, operating room, and anesthesia students. Accordingly, this study was conducted to evaluate the relationship between ethical sensitivity and emotional intelligence in nursing, anesthesia, and operating room students. Nursing schools can improve their education by gaining a deeper comprehension of the concepts of ethical sensitivity, emotional intelligence, and the relationship between them (Moreira et al., 2020).

Methodology

Participants

The study was conducted in Shiraz University of Medical Sciences, in Iran. The subjects were 486 students majoring in nursing, operating room, and anesthesia who were selected via the population census method. The inclusion criteria were being an undergraduate or postgraduate student majoring in nursing, operating room, or anesthesia. During the study, participants were provided with information on the research's purpose, the voluntary nature of their participation and their consent. The participants had the option of withdrawing at any time during the study and did not face any educational disadvantage as a result. A survey was conducted online to collect data as a result of COVID-19, as classes were in a virtual form. The identity of the students remained confidential. Those who did not complete the study survey fully were excluded from the study.

Instruments

A demographics questionnaire was used to collect data on the students' demographic characteristics (gender, age, education, marital status, degree, work, academic experience, history of taking a course on ethics, and history of attendance at ethics workshops or webinars).

Ethical Sensitivity Questionnaire. The students' ethical sensitivity was measured by the *Ethical Sensitivity Questionnaire* developed by Shayestehfar et al. (2020). It consists of 30 items which evaluate students' ethical decision-making ability when providing clinical care. A score of 0 to 33.3 indicates low ethical sensitivity, 33.4 to 66.7 average ethical sensitivity, and 66.8 to 100 high ethical sensitivity. The questionnaire addresses four dimensions: moral perception, affectivity, critical cognitive processing, and intimate cooperation. Moral perception enables students to achieve a relative understanding of the ethical aspects of a situation and determine patients' needs. Affectivity is related to the spontaneous response of students to their relative understanding of the ethical aspects. At this stage, students express their emotions and care values to communicate with patients and try to collect more data to achieve a deeper understanding of the ethical questions. Critical cognitive processing influences students' cognitive response: through different approaches, students try to learn more about other people's perspectives and explore the ethical situation more deeply to obtain a better understanding of it and the solutions. Finally, intimate cooperation concerns students' need for friendly interaction with their peers and the support of their teachers when they face an ethical question

and should demonstrate affectivity (Shayestehfard, 2019). The total Cronbach's alpha is 0.89, and the Cronbach's alpha of each of its dimensions is as follows: moral perception=0.77, affectivity=0.84, critical cognitive processing=0.7, and intimate cooperation=0.84 (Shayestehfard, 2019). In the present study, the Cronbach's alpha of the ethical sensitivity questionnaire was calculated to be 0.94 using a pilot study on 86 participants who agreed to participate in the study.

Emotional Intelligence Questionnaire. The emotional intelligence of the students was evaluated using the *Emotional Intelligence Questionnaire* developed by Bradberry and Greaves (2006). It comprises 28 items scored on a six-point Likert scale, ranging from always (6) to never (1). A score of from 28 to 78 indicates low emotional intelligence, 78 to 128 average emotional intelligence, and 128 to 168 high emotional intelligence. The questionnaire is based on Daniel Goleman's model of emotional intelligence and addresses five subscales: total emotional intelligence, self-awareness, self-management, social awareness, and management of relationships. Self-awareness describes the ability to accurately identify one's emotions when they emerge and control one's tendencies when responding to different situations and people. Self-management is related to the ability to control one's emotions and, consequently, remain flexible and respond positively to different situations. Social awareness is being able to identify and understand the feelings of others, individually and collectively, and analyze events. This kind of awareness is essential to controlling and managing relationships. Management of relationships is the product of the three other emotional skills, namely self-awareness, self-management, and social awareness. This dimension is related to the ability to use awareness of one's own emotions and the emotions of other people to constructively manage one's interactions and relationships, as well as to clearly understand situations and effectively cope with difficult conflicts (Boyatzis et al, 2002; Bradberry & Greaves, 2006).

The internal consistency reliability of the test ranges from 0.85 to 0.91, suggesting adequate reliability. Analyses of construct validity suggest that the best fit for the model is an overall EQ score with a division along the lines of personal and social competence. Specialized analyses (principal component analysis, Catell's scree test, Kaiser-Meyer-Oklin, and Bartlett's test of sphericity) indicate that the social and personal domains of competence are the main factors in emotional intelligence (Ganji et al., 2006; Bradberry & Greaves, 2006). The questionnaire has been standardised by Ganji et al. (2006) with students at an Iranian university. The reliability coefficient, using a Cronbach's alpha measure, has been reported to be 0.88 for the male, female, and the whole population. To determine the validity of the test, the researchers used this test along with Bar-On's Emotional Quotient Inventory and found the correlation coefficient to be 0.68, which was significant at 0.01. In the present study, the reliability's Cronbach's alpha was 0.88 using a pilot study with 86 participants.

Data analysis

The collected data were analysed using SPSS v. 22. The frequency distribution of the data was analyzed using mean and standard deviation. Considering the size of the sample, the normality of the data did not need to be assessed. The Pearson's correlation coefficient was used to determine the correlation between ethical

sensitivity and emotional intelligence. Independent t-test and one-way ANOVA were used to investigate the relationship between the demographic variables and the two indices of ethical sensitivity and emotional intelligence. Linear regression was employed to examine the relationship between demographic variables, ES, and EI in more detail.

Results

The study population comprised 486 nursing, operating room, and anesthesia students (57% female, 89.1% single). The majority of the students were undergraduates (83.7%) and in the second semester of the second year of their studies (22%). The average age of the students was 23.08±4.26 years (Table I).

Table I. Frequency distribution of the students' demographic variables

Variable		Frequency	Percentage
Gender	Male	209	43%
	Female	277	57%
Marital status	Single	433	89.1%
	Married	53	10.9%
Major	Nursing	294	60.5%
	Operating room	128	26.3%
	Anesthesia	64	13.2%
Level of education	Bachelor's	407	83.7%
	Master's	79	16.3%
Age	Min.	18	M±SD*
	Max.	43	23.08±4.26
Note: * *mean scores ± standard deviation*			

The students' ethical sensitivity total mean score was 83.77±9.56, which is at a high level. The highest mean score was in affectivity, and the lowest in critical cognitive processing. The students' emotional intelligence total mean score was 123.80±14.98, which is considered average. The highest mean score was in self-management and the lowest mean score in social awareness (Table II). The correlation between ethical sensitivity and emotional intelligence was 0.512 and was significant (p-value≤0.001).

Table II. The students' mean scores on the different dimensions of ethical sensitivity and emotional intelligence

Variable	Dimension	M±SD*	Rank
Ethical sensitivity	Moral perception	28.59±3.33	2
	Affectivity	63.18±6.03	1
	Critical cognitive processing	18.02±1.99	4
	Intimate cooperation	20.72±2.90	3
Emotional intelligence	Self-awareness	28.76±3.75	3
	Self-management	36.73±5.48	1
	Social awareness	21.90±3.35	4
	Management of relationships	36.24±5.92	2
Note: * *mean scores ± standard deviation*			

Independent t-test and one-way ANOVA were used to investigate the relationship between the demographic variables and ethical sensitivity and emotional intelligence respectively. There were statistically significant differences between the male and female students in ethical sensitivity (p-value=0.049) and emotional intelligence (p-value≤0.001); female students were found to have greater ethical sensitivity, while the male students had higher levels of emotional intelligence. The relationships with the other demographic variables were not statistically significant) (Table III).

The regression analysis of the demographic variables with significant differences, ethical sensitivity, and emotional intelligence revealed that ethical sensitivity is highly influenced by emotional intelligence (B=0.41, p-value≤0.001) and gender (B=4.18, p-value ≤0.001) (Table IV).

Discussion

The results of the study show that the students' ethical sensitivity total mean score was high. Similarly, some studies indicated that the ethical sensitivity of nurses and nursing students was satisfactory (Sedgwick et al., 2020; Karimi Noghondar et al., 2016). Nursing is a profession that requires carers to demonstrate high moral and ethical standards. (Ahn, &Yeom, 2014). Thus, ethical sensitivity is necessary to recognize a moral challenge, understand a person's perspective, evaluate an outcome, and accept responsibility for a decision. (Zahoor, 2021). However, other studies have shown that nursing students have moderate or low levels of ethical sensitivity. (Akca et al., 2017; Nora et al., 2017; Ertuğ et al., 2014; Ahn, &Yeom, 2014). An insufficient level of ethical sensitivity hinders nurses from performing their professional duties. It is therefore imperative that nurses fulfil their tasks and responsibilities in accordance with ethical standards while also assessing their ethical sensitivity (Zahoor, 2021).

Tale III. The relationship between ethical sensitivity, emotional intelligence and demographic variables

Variable			M±SD*	Significance level
Gender	Ethical sensitivity	Male	129.31±12.64	0.049**
		Female	131.44±10.42	
	Emotional intelligence	Male	126.63±15.88	≤0.001***
		Female	121.66±13.91	
Marital status	Ethical sensitivity	Single	130.42±11.75	0.567
		Married	131.37±8.90	
	Emotional intelligence	Single	123.97±15.23	0.482
		Married	122.43±12.86	
Level of education	Ethical sensitivity	Bachelor's	130.91±11.73	0.090
		Master's	128.51±9.85	
	Emotional intelligence	Bachelor's	124.11±15.38	0.300
		Master's	122.20±12.71	
Major	Ethical sensitivity	Nursing	130.06±11.50	0.073
		Operating room	130.06±11.39	
		Anesthesia	133.57±11.19	
	Emotional intelligence	Nursing	123.57±15.37	0.712
		Operating room	124.69±13.29	
		Anesthesia	123.04±16.47	
Work experience	Ethical sensitivity	Yes	129.18±10.06	0.108
		No	131.04±11.94	
	Emotional intelligence	Yes	122.92±15.16	0.422
		No	124.14±14.92	
Taken a course on ethics	Ethical sensitivity	Yes	129.74±11.42	0.147
		No	131.53±9.61	
	Emotional intelligence	Yes	123.39±14.99	0.205
		No	125.61±14.87	
Attendance at an ethics workshop or webinars	Ethical sensitivity	Yes	128.86±14.02	0.211
		No	130.88±10.83	
	Emotional intelligence	Yes	126.55±15.52	0.060
		No	123.21±14.82	
Age	Ethical sensitivity	Correlation coefficient	-0.047	0.298
	Emotional intelligence	Correlation coefficient	-0.029	0.525
Note: * *mean scores ± standard deviation; ** p < .05; *** p < .01*				

Table IV. Regression analysis of gender, ethical sensitivity and emotional intelligence

Variable	Coefficient estimate		p-value	Confidence Interval [Lower Bound, Upper Bound]
	B	Standard error		
Gender	4.18	0.89	≤0.001*	[2.42, 5.95]
Emotional intelligence	0.41	0.03	≤0.001*	[0.35, 0.47]
Note: $R^2 = 0.29$; * $p < .01$; ** *Dependent Variable: Ethical sensitivity*				

The highest and lowest mean scores in the ethical sensitivity domains were affectivity and critical cognitive processing respectively. A study with undergraduate nurses in Canada reported that some of the participants were unsure about their skill in identifying ethical issues in interactions between nurses and patients, which indicates a weakness in moral perception. They also reported that they did not have enough confidence in their ability to transfer their ethical knowledge to the training environment, indicating potential difficulties in their critical cognitive processing (Sedgwick et al., 2020).

Our study further revealed that the students' emotional intelligence total mean score was found to be average. Similarly, the results of a study with nursing applicants show that their level of emotional intelligence was average. Thus, the individuals who are accepted into nursing programs begin their education with different levels of emotional intelligence which can affect their perception of emotions during their training (Talman et al., 2020).

In a review study by Singh et al (2020), data on the emotional intelligence of medical, dentistry, and nursing students were systematically compared to their academic performance after graduation from 2000 to 2016. Based on the results, emotional intelligence was found to play a crucial role in the students' academic success during their clinical training. Therefore, higher emotional intelligence skills can improve a care provider's competence in providing quality care (Singh et al., 2020).

Self-management and social awareness had the highest and lowest mean scores in emotional intelligence respectively. Carlson et al (2016) reported that emotional intelligence correlates positively with self-control and negatively with irritability, verbal aggression, and emotional fatigue. In another study, Unger et al. (2016) found that those who possess better self-control enjoy higher self-esteem, better coordination in their inter-personal relationships, better anger management, and less impulsivity

The demographic findings show that females had higher levels of ethical sensitivity, while males possessed greater emotional intelligence. In another study of the relationship between ethical sensitivity and demographic variables in nursing students, Tuvesson & Lützén (2017) reported that age and gender correlate with ethical sensitivity, but Rahnama et al. (2017) did not find such differences. Even though differences between men's and women's education may account for these gender differences, a deeper understanding of gender differences in ethical sensitivity and emotional intelligence will require further investigation of specific biological, genetic, and sociocultural variables (Salguero et al., 2012). Measures should be taken to improve

emotional intelligence, especially in female students. Evaluation of ethical sensitivity and emotional intelligence in nursing, anesthesia, and operating room students before they enter clinical environments and begin professional practice can inform their trainers of the extent of the students' preparation for effective and ethical care. Educational programs on ethics and closer attention to students' psychological skills and emotional intelligence during their education can contribute to the preparation of the students for clinical practice.

In general, ethical sensitivity refers to the ability to recognize an ethical dilemma, which includes both feelings and self-awareness (Ahn, &Yeom, 2014). Self-awareness, assertiveness, independence, and self-actualization are the subscales of emotional intelligence (Barón, 1997; Başoğul and Özgür, 2016). Self-awareness refers to nurses being aware of how they feel at any given time and being aware of how their actions and emotions can affect others (White and Grason, 2019). Additionally, self-awareness enables nurses to successfully link feelings, ideas, and actions. As a result, it is a crucial skill in decision-making and creative processes that may be based on feelings and intuition (Raghubir. 2018). In clinical decision-making, it is essential to consider emotions when making critical decisions. Emotional intelligence is equally crucial in enhancing individuals' ethical decision-making and problem-solving abilities, hence increasing nurses' overall performance (Hajibabaee et al., 2018). Students, as the future workforce that will encounter complicated problems in health-care environments, need to be able to manage their emotions and make precise judgements (Ahn, &Yeom, 2014).

Conclusion

Several studies have shown that ethical sensitivity and emotional intelligence can make a significant contribution to better performance (Singh et al., 2020; Schallenberger et al., 2019; Hajibabaee et al., 2018; Sarabia-Cobo et al., 2017). As a result of both qualities, individuals can analyze their emotions and make better informed decisions. (Zhang et al., 2020; Hajibabaee et al., 2018; Borhani et al., 2017; Mayer, 2015; Angelidis and Ibrahim, 2011). As important members of clinical care teams, nursing, operating room, and anesthesia students face a variety of ethical challenges. and it is essential that ethical senistivity and emotional intelligence and ways to improve them should be incorporated into nurses' educational programs. This will ensure clinical practice conducive to better quality care, patient safety and and enhanced carers' mental health and well-being.

As two emerging, complex, and multidimensional concepts, ethical sensitivity and emotional intelligence, should be the subject of more research with different designs in order for their various aspects to be identified and explored. Research in both areas can result in the emergence of new horizons in that subject. The findings of the present study can be a springboard for further research into factors which influence ethical sensitivity and emotional intelligence and ways to improve them in nursing and nursing education.

Acknowledgement

The present article was extracted from Mina Mosallanezhad's master's degree thesis registered at Shiraz University of Medical Sciences, grant No. 22370 and ethics code: IR.SUMS.REC.1399.1260. The authors would like to express their gratitude to all the students who participated in the study.

Declaration of Conflicting Interests

The authos declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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