Original Article

The mediating role of moral reasoning in spiritual intelligence and caring behaviors in Iranian emergency nurses

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Abstract

Moral reasoning is necessary to the nursing profession. Therefore, this study aimed to investigate the mediating role of moral reasoning in spiritual intelligence and caring behaviors among Iranian emergency nurses.

In this descriptive-analytical study structural equation modeling (SEM) is employed for the data analysis. the minimum required sample size determined by the number of parameters of the model was 18. Considering that 5 to 15 samples were required for each of the parameters; the required sample size was 272. Nurses working in the emergency department of all hospitals in Qom, Iran, were selected by convenience sampling. Demographic characteristics inventory, King's Spiritual Intelligence Self-Report Inventory, Crisham's Nursing Dilemma Test, and Wolf's Caring Behaviors Inventory used for data collection. SPSS (V20) and Mplus were used to analyze the data.

The results showed that a significant direct relationship was observed between moral reasoning and caring behaviors. According to SEM results, direct and indirect effects were observed of spiritual intelligence on caring behavior It is therefore recommended managers and hospital officials pay meticulous attention to spiritual intelligence and the power of decision-making in nurses to improve their caring behaviors.

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Introduction

Caring is considered one of the most basic activities and a central element of nursing. The objectives of the physical aspect of caring behavior are to perform daily tasks, physical actions, training, therapeutic and diagnostic interventions, and to provide the physical recovery of patients, and also the psycho-social aspect aims to satisfy the patient's psychological and emotional needs (1,2). A distinctive characteristic of nursing refers caring behaviors. According to Greenhalgh et al, (1998), caring behaviors is defined as an act, conduct, and mannerism approved by professional nurses communicating worry, safety, and attention to the patient (2). The four dimensions of caring behavior are as follows:(1) RDO (standing for respectful deference to others), (2) AHP (signifying assurance of human presence),(3)PC (standing for positive connectedness), and (4) PSK (representing professional skill and knowledge)(3). All aspects of caring behavior can promote the quality of care, increase the patient's health level, cause a sense of security and satisfaction, and thus improve healthcare (4).

Studies show that there are several factors like a lack of staff, non-standard working conditions /environment, the nurses' job dissatisfaction, lack of organizational support, work experience, and individual and organizational factors that can affect caring behavior (5,6). For instance, due to the nurses' excessive activity or workload and more duties, work stress can influence their caring behavior (6). The emergency department (ED) is considered as a unique work environment for nurses. There are several factors, such as the unpredictable nature of the department, a higher patient-to-nurse ratio, overcrowding, and an increase in hospital staff turnover rates, which can contribute to this highly stressful contemporary workplace (7). Emergency care is considered an essential aspect of improving the lives of patients, and the lack of effective care behavior influences the patients' bodies and souls, which can lead to caring neglect (3). A study conducted by the AHRQ (standing for Agency for Healthcare Research and Quality) reported that 80% of events occurring in hospitals are caused by non-compliance with patient safety principles, many of which may be due to unprofessional behavior and nursing errors (4).

The special conditions of patients in the ED are such that personnel need to make sound ethical

decisions about them, both making sound ethical decisions and knowing the reasons for making a decision are integral parts of tasks that nurses need daily (8). Ethics and the application of ethical values is considered the most effective factor in promoting caring behaviors, and also contributes to the development of caring behaviors, providing high-quality care (6,9).

Moral reasoning is a mental process, leading to the recognition of an ethical issue and the correct reaction to it, and the nurse decides based on what is right (10). According to the Kohlberg's theory, the development of ethical reasoning occurs at three levels of two stages each: pre-conventional reasoning, conventional reasoning, and post-conventional reasoning (11). Nurses must have some level of moral reasoning, skill, and knowledge that are required to resolve ethical conflicts and are essential to high-quality nursing care. The lack of ethical reasoning skills has excluded the majority of nurses from having a significant role in the process of decision-making and hindered daily practice routine (11,12), Also, it can result in making the wrong decisions about end-of-life, and human and edication errors in the complex clinical situations (13). which can have adverse consequences for the patient and his/her family members and even the nurse

Several studies conducted on the ethical reasoning ability of nurses and nursing students in different countries demonstrated that ethical reasoning may be due to the effects of educational programs and the cultural context of different societies (13,14). Individual, social, and organizational factors can contribute to ethical reasoning. Individual and social factors, including spiritual intelligence(SI), are among the factors affecting the nurses' ethical reasoning (12,15). SI is a relatively new concept in the field of psychology and spirituality that is defined as a set of capabilities people to use religious and spiritual resources, and adaptive behavior in problem-solving embodies the highest levels of cognitive, moral, emotional, and interpersonal development and also the person can solve life problems using spiritual resources (13,16,17). The different four dimensions of SI (proposed by King & DeCicco, 2009) are as follows: (1) CET (standing for critical existential thinking), (2) PMP (signifying personal meaning production), (3) TA (standing for transcendental awareness), and (4) SE (signifying conscious state expansion) (11). Given that nursing is a stressful profession; therefore, SI and its dimensions can lessen the effects of stress. Various studies have shown that SI can reduce stress and enhance educability and decision-making ability (16,18). It

seems that nurses need a high level of SI to provide high-quality care and meet the spiritual needs of patients (15,19). In their study, Beni et al., (2019) reported that SI could improve the nurses' competency, moral performance, and personal meaning about caring (20).

It seems that previous studies conducted on SI and ethical reasoning and care behavior of nurses have not yet been able to reveal the various dimensions of the issue. Also, it seems that a growing number of studies conducted on spirituality and ethics may be attributed to their tangible significant impacts on increasing both individual performance and organizational performance (21,22). In addition, the correlation between the study variables using Structural equation modeling (SEM) can be one of the strengths of this study. In this regard, the concept of SI is also taken into consideration in the nursing profession and the evidence suggests that SI is considered one of the factors which can contribute to influencing nursing care behaviors and the nurses' clinical competence (23). Therefore, the present study aimed to investigate the relationship between spiritual intelligence and caring behavior by the mediating role of ethical reasoning among Iranian emergency nurses .

Methods

Sample and Setting

In this descriptive-analytical study, we employed the SEM. Since this study used the SEM for the data analysis, the minimum required sample size determined by the number of parameters of the model was 18. Considering that 5 to 15 samples are required for each of the parameters, the minimum sample size required for this study was 272 nurses. The study participants were selected through the convenience sampling performed from February 24, 2018 to August 23, 2018. The study population consisted of all nursing personnel (including head nurses, nurses, and practical nurses) who worked in the Emergency Department of of six educational and medical hospitals affiliated with Qom University of Medical Science, two private centers, and a medical center affiliated with the Social Security Organization in Qom, Iran, in 2018.

The total number of nurses working in the emergency department of 6 educational and medical hospitals was 265, in two private centers was 47 and in the medical center affiliated with the Social Security Administration was 30. Due to possible sample losses, a sample of 290 nurses was selected by convenience sampling. 272 out of 290 distributed questionnaires were completed

and returned, and 18 questionnaires were excluded due to incompleteness and non-return.

Inclusion criteria for this study included: having at least 6 months of continuous work experience in the emergency room a contracting and permanent nursing workforce(the minimum time to face the acceptable levels of challenges in the workplace mentioned in several similar studies) (21,23), those working in the morning, evening *and night* shifts, willingness to participate in the study (after the researcher explained the goals and methods of the research to the study participants) and those completing the questionnaires. The study exclusion criteria were specified as follows: nurses working in the ED on a part-time basis, having sick leave, newly hired nurses, those working in other departments, the non-willingness to participate in the study, and those who did not complete the questionnaires.

Data Collection tools

In this study, the data were collected using the demographic characteristics inventory, and three standardized questionnaires, namely King's Spiritual Intelligence Self-Report Inventory (SISRI), Crisham's Nursing Dilemma Test (NDT), and Wolf's Caring Behaviors Inventory(CBI).

Spiritual Intelligence Self-Report Inventory (SISRI)

In 2008, King developed the SISRI which is a 24-item self-report scale. developed. This scale consists of four subscales, including CET, PMP, TA, and CSE. A 5-point rating scale used for SISRI scoring is as follows:

5(absolutely true),4(very true),3(somewhat),2(not very true), and 1(not at all). The internal reliability of the whole questionnaire based on King's report (as estimated by Cronbach's alpha) was 0.95(25). Also, the validity and reliability of Persian version of this scale have been confirmed by previous studies conducted in Iran. For example, Raghib et al. estimated the reliability of this scale as 0.88 using Cronbach's alpha (26). Similarly, Cronbach's alpha was 0.88 for this study.

Nursing Dilemma Test (NDT)

Crisham (1981) developed the NDT at the University of Minnesota Moral reasoning, decision-making, practical considerations, and familiarity with the moral dilemmas of the nurses were assessed by this scale. The NDT is based on Kohlberg's theory and includes the six different scenarios addressing healthcare ethical dilemmas associated with,

1) newborn infants with anomalies,

2) forced medication administration,

3) an adult's request to die,

4) novice nurse orientation,

5) drug mistakes,

6) an uninformed terminal ill adult.

The "newborn infants with anomalies" dilemma includes the definition and promotion of the quality of life in neonatal nursing. The scenarios of "forced medication administration" in the psychiatric unit and "an adult's request to die" in the critical care unit take the patient's right to autonomy into consideration. The scenarios of the "novice nurse orientation" and "drug mistakes aim to maintain the professional standards of an organization and equitable distribution of nursing staff in the pediatric surgical wards Finally, the "uninformed terminally ill adult" dilemma is concerned with the client's right to receive their healthcare information in the internal ward. Four scores obtained from the three parts of NDT are as follows: evaluating decision-making, practical considerations, moral reasoning (principled thinking), and familiarity with moral dilemmas. On moral dilemmas in nursing care, with two questions in each scenario, for the first question, the respondents must choose what to do if they are in the related position of that scenario and answer this question: "What should the nurse do?" The respondents might select the options, including "Should act", "Cannot decide", or "Should not act. Choosing the option "Should act" shows the ethical decision - making of the nurse. For the second question, they reported the reason for their choice. In the latter part, nurses were presented with six items t explaining reasons for choosing their options, and also they were asked to rank them in order of priority. Each item given in each scenario refers to one of the stages of Kohlberg's theory of moral development, and one item examines the extent to which institutional rules are taken into account in decision-making. Nursing principled thinking (NP) and practical considerations (PC) were scores calculated for a nurse's response to the second part of the scenarios. NP was the sum score of stages 5 and 6 in Kohlberg's moral development, where there were two items related to NP in each scenario. Nurses would be scored according to what priority they assign to these items. The higher the priority of these items is for nurses, the higher the NP score would be. NP scores ranged from 18 to 66.

Crisham estimated the validity and reliability of the NDT (α=95%) (27). Many studies performed in Iran have also confirmed the validity and reliability of this scale. For example, Borhani (2010) and Zirak (2012), used a test-retest and

reported that the reliability of the Persian version of this scale was 0.82 and 0.95, respectively(8,13). In this study, Cronbach's alpha coefficient for the whole questionnaire was 0.81 based on the reliability obtained by Cronbach's alpha coefficient.

Caring Behaviors Inventory (CBI)

The CBI was translated into Persian by Rafiei et al. (2007) who also confirmed its validity and reliability (Cronbach's alpha value:92%) (29). Another study conducted in Iran also confirmed Cronbach's alpha of 0.98 (30).

This scale has 42 items and five subscales, including respectful difference to others (respect); assurance of a human presence (assurance); positive connectedness (connectedness); professional knowledge and skill (knowledge and skills); and attentiveness to other's experience (attentiveness). Each item is rated on a 6-point Likert scale, ranging from never (1) to always (8). The lowest and highest scores of CBI are 42 and 252, respectively. In this study, the reliability of this scale was 0.89 based on Cronbach's alpha coefficient.

Data Analysis

SPSS (V20) was used to analyze the demographic data and calculate the Pearson correlation test. The Kolmogorov-Smirnov normality test was used to the normality of distributions of the study variables as some demographic and main variables (SI, moral reasoning, and caring behavior). The participants' general characteristics and main variables were assessed descriptively. The t-test and analysis of variance (ANOVA) were used to test the differences in SI, moral reasoning, and caring Behavior related to general characteristics. The correlation coefficient was calculated to identify the relations among SI, moral reasoning, and caring behavior. Multiple linear regression analysis was employed to assess the effect of moral reasoning on nurses' spiritual intelligence and caring behavior.

Ethical consideration

The Ethics Committee of Qom University of Medical Sciences approved the study protocol (IR.MUQ.REC.1396.72). Upon which one of the researchers was introduced to the authorities for obtaining permission to collect data. The Persian version of the NDT was used in this study with permission obtained from Zirak et al (2012) and the Persian version of the CBI from Rafiei et al (2007) (8,29). Before distributing the questionnaires, the researcher explained the research objectives and data collection process to the nurses and assured them that their answers would remain strictly confidential. Also, the study

participants provided the verbal and written informed consent

Results

Table 1 shows the demographic characteristics of the participants. The mean and standard deviation (SD) of SI was 52.5 ± 10.72. The majority of the participants (54.6%) had high SI. None of the participants had low SI. Regarding the nurses' responses to the first part of the questionnaire, the highest frequency observed in all 6 questions was related to the correct answer. The analysis results of the second part of the questionnaire showed that the mean score of the nurses' ethical reasoning was 45.10 ±7.22. The mean score of nurses' caring behavior was 4.65 ± 0.42 (Table 2).

Table 1: Demographic characteristics of the study participants

Variable	Frequency	Percentage
Sex		
Male	115	42.3
Female	157	57.7
Age		
20-29	117	43.4
30-39	118	43.0
40-49	29	10.7
≥۵۰	8	2.9
Years of experience		
1-5	121	44.5
6-10	84	30.9
11-15	33	12.1
16-20	20	7.4
21>	14	5.1
educational qualification		
High school Diploma	16	5.9
Postgraduate	12	4.4
Bachelor degree	233	85.7
Master's degree	11	4.0
Marital status		
Single	84	30.9
Married	188	69.1

Table 2: Association between Study variables and demographic characteristics (n = 272)

Demographic Variables	number	Spiritual Intelligence	Moral Reasoning	Caring Behavior
Age	118	Mean	Mean	Mean
20-29	117	52±10.43	44.3±6.86	4.57(0.36)
30-39	29	52.2±10.84	45.7±7.58	4.68(0.46)
40-49	8	55.4±10.81	45.8±7.74	4.82(0.45)
≥50		51.7±13.31	44.1±4.35	4.69(0.50)
		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.470**	0.461**	0.024**
Gender	115	Mean	Mean	Mean
Male	157	53.2±11.23	43.9±7.52	4.63(0.45)
Female		51.9±10.34	45.9±6.89	4.66(0.41)
		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.323*	0.323*	0.58*
Marital Status	84	Mean	Mean	Mean
Single	188	51.9±11.51	45.5±7.43	4.60(0.39)
Married		52.7±10.41	44.8±7.13	4.67(0.43)
		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.557*	0.498*	0.17*
Education(degree)	16	Mean	Mean	Mean
Diploma	12	47.9±9.50	42.8±10.0	4.54(0.52)
Postgraduate	233	52.0±9.77	41.5±8.19	4.61(0.49)
Bachelor's	11	52.7±10.91	45.4±6.90	4.65(0.42)
Master's		55.1±8.61	45.8±7.41	4.83(0.38)
		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.298**	0.162**	0.40**
Work experience	121	Mean	Mean	Mean
1-5	84	51.7±10.41	44.6±7.14	4.58(0.36)
6-10	33	51.0±10.42	45.3±6.95	4.61(0.44)
11-15	20	56.2±11.92	44.8±7.73	4.78(0.49)
16-20	14	55.3±10.67	49.4±6.69	4.93(0.43)
≥21		54.3±10.97	41.4±6.93	4.74(0.46)
		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.101**	0.021**	0.002**
Employment Status	117	Mean	Mean	Mean
permanent	49	53.2±10.86	45.0±7.59	4.71(0.47)
Temporary	51	53.5±10.95	44.7±7.15	4.70(0.38)
Plan	55	51.1±10.00	44.2±7.75	4.53(0.37)
Contractual		51.1±10.92	45.1±5.93	4.58(0.39)
		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.451**	0.705**	0.04**
work schedules	22	Mean	Mean	Mean
Day shifts	9	50.4±11.72	47.0±7.69	4.66(0.43)
Evening shifts	14	58.0±7.71	50.2±7.18	4.73(0.39)
Night shifts	227	51.4±13.08	42.4±6.00	4.67(0.48)
Rotation shift		52.5±10.56	44.8±7.15	4.65(0.42)
		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.343**	0.040**	0.9**
Knowledge of	30	Mean	Mean	Mean
professional ethics	137	57.3±12.12	44.9±7.36	4.73(0.50)
codes	105	53.0±10.17	45.7±7.09	4.68(0.42)
Exactly		50.3±10.60	44.1±7.24	4.58(0.39)
Nearly		P-value(Sig)	P-value(Sig)	P-value(Sig)
None		0.05**	0.248**	0.09**
Participate in the	110	Mean	Mean	Mean
workshop	162	54.5±10.00	45.7±6.83	4.74(0.45)
Yes		5.90±10.9	44.6±7.41	4.59(0.39)
No		P-value(Sig)	P-value(Sig)	P-value(Sig)
		0.051*	0.216*	0.004*

*Independent t-Test **ANOVA Test

Our results demonstrated that there was a statistically significant relationship was observed among ethical reasoning, sex (P = 0.025), and work experience (P = 0.021), but no significant association was found between nurses' moral reasoning and other demographic characteristics. Moreover, no significant association was found between demographic variables and SI. As shown in Table 2, a significant association was found between caring behavior and demographic variables, including service status (P = 0.04), work experience (P = 0.002), and age (P = 0.024). Also, no significant correlation was observed among caring behavior, sex, and marital status, (P> 0.05). Also, there was no significant correlation between spiritual intelligence and demographic variables (P> 0.05). The results of statistical analysis showed that there was a significant correlation between moral reasoning, sex, and work experience.

A significant relationship was observed between SI and ethical reasoning based on the results obtained from the Pearson correlation coefficient (r= 0.279).

Also, a significant positive association was found between SI and caring behavior (r=0.47). The correlation coefficient between ethical reasoning and caring behavior (r = 0.41) was also significant (P <0.001). SEM and model fit: the hypotheses were tested by using the SEM There (hypotheses were as follows:

(1)Spiritual intelligence is related to caring behavior

(2)Spiritual intelligence is related to moral reasoning

(3) Moral reasoning is related to caring behavior.

The indices of the goodness of fit of RMSEA (standing for root mean square error of approximation), CFI (signifying comparative fit index) TLI (representing Tucker-Lewis index), and Chi-square were used to evaluate the model fit.

The acceptable values for the RMSEA with a 90% confidence interval should be ≤ 0.1; the values for the CFI and Tucker- Lewis indexes, should be ≥0.90 (31). All the mentioned indexes show the fitness of this model in this study (Table3).

Table 3: Goodness-of-fit measures for the overall model

Relative fit index	Acceptable Goodness of fit statistics	Hypothesized Model		Modified model	
		Statistics	Met criteria	Statistics	Met criteria
χ^2 / df	>2	2.78	Yes	2.28	Yes
RMSEA	< 0.1	0/13	No	0/069	Yes
CFI	>.0.9	0/96	Yes	0/96	Yes
TLI	>.0.9	0/95	Yes	0/95	Yes

Abbreviations: df (standing for degree of freedom), RMSEA (signifying root mean square error of approximation)

CFI (standing for comparative fit index), and TLI (signifying Tucker-Lewis index).

Regarding the overall purpose of the research, data analysis based on SEM showed that SI was directly related to caring behavior (P <0.001), and its significance coefficient was 0.47. Also, an indirect relationship was observed between SI and caring behavior (P = 0.001, β = 0.07). SI had a direct effect on ethical reasoning and its significance coefficient was 0.30.

Regarding the relationship between SI and caring behavior and ethical reasoning based on the coefficient of significance (β), the greatest effect was related to the direct relationship between SI and caring behavior (β = 0.47).

A statistically significant association was found between ethical reasoning and caring behavior (P <0.001, β = 0.23). Also, there was a direct association among SI, ethical reasoning, and caring behavior. It should be noted that the arrows in the figure on the right represented the association observed between moral reasoning and its dimensions, and the arrows in the figure on the left reflected the correlation between SI and its dimensions. In this study, the relationship between the dimensions of moral reasoning and SI was not evaluated by caring behavior. (Figure 1).

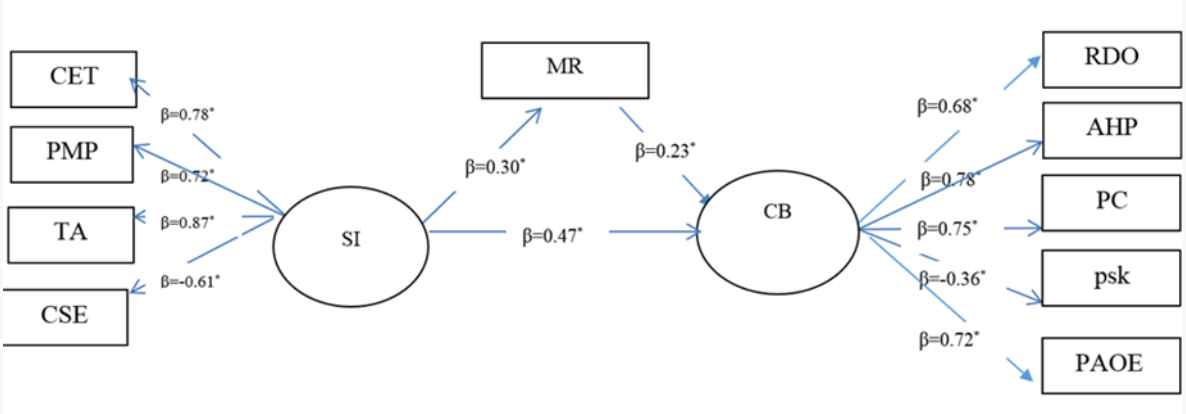

Figure 1 Factors contributing to the nurses' caring behavior. All relationships are significant the SEM is run at the construct level

Abbreviation: Moral Reasoning (MR), Spiritual Intelligence (SI), Caring Behavior(CB). respectful deference to others (RDO), assurance of human presence (AHP), positive connectedness (PC), professional skill and knowledge (PSK)., Pay attention to other experiences (PAOE), critical existential thinking(CET), personal meaning production (PMP), transcendental awareness (TA), conscious state expansion (CSE),

Discussion

The results of the present study demonstrated that the relationship was observed between SI and the caring behavior of emergency nurses through the mediating role of ethical reasoning. Also, SEM was used to show the relationship between SI and caring behavior by the mediating role of moral reasoning, which could be considered as the novelty of this study, and was examined for the first time from the perspective of nurses.

Our results demonstrated that more than 50% of the participants had high SI. None of the participants had low SI. in their study, Arad et al. (2020) also reported that the mean score of SI 43 for both the intervention group and control group was 57.48±19.54 and 51.68±14., respectively, before the intervention, which was in agreement with our study (32). In their study, Karimi Aliabad et al. (2021) also showed a median spiritual intelligence score of 64.50(33).

An acceptable level of ethical reasoning is essential to provide ethical and humane care to patients (34). Our results demonstrated that the score of nurses' ethical reasoning was at a relatively high level (45.10 ± 7.22). In line with this finding of the current study, Khatiban et al. (2021), indicated that the mean score of nurses' ethical reasoning was 43.21 ± 5.98(14).

In their study, fazljoo et al. (2016) also showed that, the average score of the nurses' ethical reasoning was 44.1 ± 6.5, which was in agreement with our study (24). Another finding of this study showed that the highest frequency observed in all 6 questions was related to the correct answer when nurses responded to the first part of the questionnaire, which was consistent with the results found by Fazljoo et al (24).

Our results demonstrated that the average score of the nurses' caring behavior was also at a desirable level. In line with our study, the study of Haji Babaei et al, (2022) revealed that the average score of nurses' caring behavior was 84.34 ± 11.4, indicating a desirable level (35).

The findings of this study showed that there was no significant relationship between SI and demographic variables. In their study, Bagheri et al, (2019) demonstrated that the mean score of nurses' SI by sex age, work experience, education level, and employment relationship was not statistically significant (36). Our results also indicated that no correlation was found between SI and sex. Similarly, Mehralian al. (2023) reported a positive and significant relationship between SI with age and gender (37). However, in George's study, a significant association was found between SI and sex (38). The lack of significance in the present study between SI and demographic variables might be due to the heterogeneity of nurses in terms of demographic variables.

The results of the present study showed that there was an inverse relationship between moral reasoning and work experience and work shift, which was consistent with the results found by Sari et al. (2017) (39). however, in George's study, a significant relationship was observed between moral reasoning and work experience, which is not consistent with our study. This difference might due to the management style, cultural differences, or the educational level of the personnel (12,38). Also, no significant association was observed between ethical reasoning and other demographic variables, which was in agreement with previous studies (33,39).

The findings of this study indicated that a significant relationship was observed among age, work experience, service status, and caring behavior. However, two other studies did not report any relationship between demographic characteristics and caring behavior (40,41). No significant association was observed between caring behavior and other demographic variables, which was in agreement with the results found by Tarbiat-Nazloo et al. (2019) (42).

Another finding of the present study demonstrated that a significant positive association was observed between SI and ethical reasoning, which was consistent with the results Bagheri et al study (36). Unlike the present study, Safavi et al. (2022) found no significant relationship between SI and ethical reasoning (43). the reasons for this difference in results can be related to factors such as the level of education, cultural and social backgrounds, nurses' clinical experiences and rules and regulations at work place.

Also, our results indicated that there was a significant positive relationship between SI and the caring behavior of nurses working in the emergency department, which was in agreement with the study of Sunaryo et al. (2018) suggesting the positive association between SI and caring behavior (44).

In their study, barkhordari-sharifabad et al, (2020) found that no significant association was found between SI and the care behavior of nurses working in Kashan hospitals, but a statistically significant relationship was observed between the component of spiritual intelligence (existential critical thinking) and components of caring behavior (relationship and positive affect) ($P < 0.05$) (45). In this study, the reason for this difference might be due to the instruments used. The fact that the instruments are self-reported and the possibility that fatigue and lack of time have affected the actual response of the nurses are among the limitations of this study.

Another finding of the present study indicated that there was a significant positive association between ethical reasoning and caring behavior, which was in agreement with the study of Afrasiabifar et al. (2021), suggesting that a significant positive association was observed between nurses' caring behavior of nurses and ethical sensitivity at a 99% level ($p = 0.001$) (46).

In their study, Sonaryo et al. (2018) found that both emotional intelligence and SI had a direct effect on caring behavior. On the other hand, SI had an indirect effect on caring behavior via the mediating role of job burnout, which was in line with our study (44). According to the results of the present study, ethical reasoning playing the mediating role in the relationship between SI and the caring behavior of nurses was revealed using the SEM.

Limitations of this study

The present study had some limitations. First, this was a correlational and cross-sectional study in which results (due to the dependent and mediating role of variables) must be cautiously interpreted. Second, this study was conducted in the

emergency departments of only one city; therefore, the generalizability of our results to the nursing community of hospitals in Iran, should be done with caution. Last, we used a self-report questionnaire to collect the data. This type of instrument is useful for a detailed, in-depth examination and understanding of ethical reasoning, SI, and the caring behavior of nurses. Therefore, it is recommended that the caring behavior of nurses should be assessed by using observational instruments.

Conclusions

The findings of this study demonstrated that in addition to the direct effect of SI on the nurses 'caring behavior, SI could indirectly affect the nurses' caring behavior through the mediating role of ethical reasoning. Therefore, it seems that by promoting SI and its components through training programs, it is possible to strengthen ethical reasoning and, as a result, improve the quality of nurses' caring behavior. It is also hoped that the results of this study and similar studies in this field will be a guide for nursing managers to select nurses with spiritual and moral qualities to work in the emergency department. On the other hand, by clarifying the role of spiritual intelligence and logical reasoning in nursing actions, especially providing spiritual care, courses in this field can be included in the educational program of nursing students and in-service training for nurses. It is therefore recommended that; a): an intervention study with the aim of to improve SI and moral reasoning should be conducted. b): A study should be conducted with the aim to improve SI and moral reasoning and promote the quality of nursing care. In addition, further studies are needed to evaluate the association of dimensions of SI and moral reasoning with the caring behavior of nurses.

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Authors' contributions:

Raheleh Amiri collected the data. Mina Gaeeni and Hoda Ahmari Tehran provided and analyzed the data. Mina Gaeeni and Raheleh Amiri provided the data and prepared the manuscript. Mina Gaeeni, Raheleh Amiri, and Hoda Ahmari Tehran conceived the study's idea.

Conflict of Interests

The authors have no conflicts of interest to declare.

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