Original Article

Professional moral courage and moral reasoning among nurses in clinical environments: a multivariate model

Mahnaz Khatiban [1], Seyedeh Nayereh Falahan[2*], Ali Reza Soltanian [3]

1.Professor, Mother and Child Care Research Center, Department of Ethics Education in Medical Sciences, Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran.
2.Instructor, Chronic Diseases (Home Care) Research Center, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran.
3.Professor, Modelling of Noncommunicable Diseases Research Centre, Department of Biostatistics, School of Health, Hamadan University of Medical Sciences, Hamadan, Iran.

Abstract

Improving ethical practice needs recognizing the relationship between moral reasoning and moral courage among nurses. We examined factors (moral reasoning, practical consideration, moral dilemmas familiarity, and demographic and work characteristics) associated with moral courage among nurses. A cross-sectional design was run at all five hospitals affiliated to Hamadan University of Medical Sciences in west of Iran. A proportionate random sampling due to the total size of the nurse population in each hospital, 224 eligible nurses were completed the study questionnaires: demographic-work characteristics, Professional Moral Courage (PMC), and Nursing Dilemma Test. The relationships were examined by multiple regression analysis. Participants reported a more than moderate level of moral reasoning and PMC (43.21±5.98 and 56.16±10.18 respectively). The multivariate model showed the nurses' PMC is positively predisposed with moral reasoning (β=0.21, p<0.01), but negatively with practical consideration (β=-0.16, p<0.01). More moral courage was found in the nurses who were never married (p<0.001), graduated from a public university (p<0.01), working in the critical care and emergency environments, as well as night shifts (all p<0.001). Moral reasoning is a predictor of moral courage, and both should be considered in designing nursing education to improve ethical nursing practice.

***Corresponding Author**

Seyedeh Nayereh Falahan
Address: *Hamadan University of Medical Sciences- School of Nursing and Midwifery- Shahid Fahmideh Boulevard, Hamadan, Iran.*
Postal Code*: 38698-65178*
Tel: *(+98) 81 38 38 04 39*
Email: *falahiyan@umsha.ac.ir*

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Introduction

Moral practice is a component of providing nursing care informed by ethics and morals. Ethics refers to systematic guidelines for practice provided by external sources such as professional codes of conduct. Morals, on the other hand, come from internal sources such as individual beliefs, behaviors, and principles related to right and wrong (1).

Morals are derived from moral reasoning, which underlies ethical nursing practice. Moral reasoning involves cognitive processes that underpin moral decision-making and lead to ethical behavior or put ethical decisions into practice (2, 3). Ethical nursing practice is a complex process of moral reasoning, decision making, and implementation of the decision in practice (2).Through Moral reasoning, professionalism will be promoted, and nurses will be prepared for responsible and ethical practice (4), knowing the right thing to do can be achieved by moral reasoning(5), but courage is required to do right (6). In clinical environments, when ethical dilemmas regarding patient care arise, nurses actively engage in the decision-making process and express their concerns (7), but they need moral courage (8) to act ethically and according to the results of their moral reasoning.

Moral courage is an individual's capacity to overcome perceived or actual threats and to act according to his/her core values and ethical reasoning when moral principles are vulnerable. Morally courageous behavior may have negative consequences such as stress, anxiety, isolation from colleagues, or potential loss of employment (9 - 17). Moral courage is an important virtue in clinical nursing practice that fosters personal and professional development and empowerment, but its enactment demands moral sensitivity, conscience, experience (16) and rationalism (6).

In their literature review, Bickhoff et al, found a small number of studies that examined moral courage in nursing students, Using a primarily qualitative methodology (18). Others found that empirical nursing research about moral courage is extremely scarce (9, 11, 19, 20). Both moral reasoning and moral courage are important in developing and enacting moral and ethical nursing practice and promoting personal morals and nursing professionalism (4, 6, 16). Although moral reasoning and moral courage are fundamental components of ethical nursing practice, we could find no studies that investigated the association between the two. Therefore, this study was carried out to determine the predictors of professional moral courage by focusing on moral reasoning through the following research questions: What is the level of nurses' moral courage, and is there an association between moral courage and demographic and work characteristics? What is the level of nurses' moral reasoning and moral considerations, and familiarity and is there any association between nurses' moral reasoning and demographic and work characteristics? And finally, do nurses' moral reasoning, practical considerations, familiarity with moral dilemmas, and

demographic and work characteristics predict professional moral courage?

Methods

We used a descriptive-correlational design and conducted the study in five hospitals affiliated with the Hamadan University of Medical Sciences located in the west of Iran during 2018. The target population consisted of nurses employed in one of these hospitals with at least one year of clinical nursing experience in the same hospital. The researchers personally distributed the questionnaires among the nurses working the morning, evening and night shifts, and asked them to fill them out in their free time within 3 days. They also instructed the nurses to manually return the completed questionnaires in an envelope to the researchers.

Considering a two-tailed significance level of 95%, a test power of 0.90, and 20% probability of receiving incomplete questionnaires, 223 nurses were selected using proportional, stratified random sampling. Lists of nurses with one year of clinical nursing experience were obtained from the "Nursing Management Office" in each hospital. The target population (n = 1270) was stratified by hospital, and random samples were taken in proportion to the hospital size. Potential participants were selected from the lists using the numbers generated by the random number generator. There were 74 participants from Besat Hospital (%33), 40 from Shahid Beheshti Hospital (17.9%), 44 from Farshchian Heart Hospital (19.6%), 34 from Sina Hospital (15.2%), and 32 from Fatemieh Hospital (14.3%).

The research questionnaires in this study were:

1- The Demographic and Work Characteristics Questionnaire: This questionnaire assessed the nurses' demographic and work characteristics with validated items. The items were related to age, gender, marital status, nursing degree, university, work experience, work shifts, and service area.

2- The Nursing Dilemma Test (NDT) developed by Crisham (21): The nurses' moral reasoning, decision-making, practical considerations, and familiarity with moral dilemmas were measured by this questionnaire.

The NDT contains six scenarios addressing health-care ethical dilemmas concerning 1) a newborn with anomalies, 2) forcing medication, 3) an adult's request to die, 4) new nurse orientation, 5) medication errors, and 6) an uninformed terminally ill adult. The "newborn with anomalies" dilemma reflects the concern about describing and promoting the quality of life in neonatal nursing. The issues of "forcing medication" in the psychiatric-mental ward and "an adult's request to die" in the critical care unit consider the patient's right to autonomy. The "new nurse orientation" and "medication errors" scenarios focus on maintaining professional and organizational standards and equitable distribution of nursing resources in pediatric and surgical wards. Finally, the "terminally ill adult" dilemma

emphasizes the concern over the client's right to receive personal health-care information in the internal ward. As seen below, the three parts of NDT produce four scores assessing decision-making, practical considerations, moral reasoning (principled thinking), and familiarity with moral dilemmas.

NDT - Part A assesses moral decision-making (DM). In each of the six scenarios, participants are asked to imagine themselves in the position of the nurse and answer this question: "What should the nurse do?" The participants may choose "Should act", "Cannot decide", or "Should not act". The nurse who decides to act has made a moral decision. Moral DM is shown by the percentage of the nurses' action choices in each scenario.

NDT - Part B assesses moral reasoning, moral development, and practical considerations. In this part there are six statements that express the reasons for participants' action choices regarding each of the six moral scenarios. Of the six statements for each scenario, five measure the stages of moral reasoning which represent 2, 3, 4, 5 , 6 of Kohlberg's levels of moral development, . The statement 5 and 6 measure the highest level of moral reasoning (principled thinking). The remaining option measures practical considerations that have a major effect on nurses' decision-making, for instance time allotment, health team availability, institutional rules, and the physical structure of the setting. Given that each statement represents one stage of the three levels of moral development, the respondent's first priority shows his/her level of moral development. Each level contains two stages: pre-conventional (stages 1 and 2), conventional (stages 2 and 3), and post-conventional (stages 5 and 6) (21, 22). In the pre-conventional level, an individual's moral reasoning is externally controlled by the rules set by the experts and is mainly focused on the external consequences of the actions. In the conventional level, an individual's moral reasoning is based on the rules, norms and expectations of the society, and the fairness of a rule is rarely probed. In the post-conventional level, an individual's moral reasoning is linked to more abstract principles and values, for instance basic human rights such as life, liberty and justice (23). Nurses are asked to think of the factors they took into consideration when responding to the question on moral decision making, and to rank the statements from the most important (score of 6) to the least important (1). The total score is calculated as the sum of the items' ratings, and ranges from 6 to 36, with lower scores indicating a higher level of "practical considerations" (such as institutional rules, time and resource availability) and a lower level of moral reasoning when making moral decisions. The total score for moral reasoning is calculated according to the formula proposed by the tool developer and varies from 11 to 66, with high scores indicating high levels of moral reasoning.

NDT - Part C assesses nurses' familiarity (F) with similar moral dilemmas in each scenario by using a 5-point scale including

"I have made a decision in a similar dilemma" (score = 1), "I know someone else in a similar dilemma" (2), "I do not know anyone in a similar dilemma, but the dilemma is conceivable" (3), "It is difficult to imagine the dilemma as it seems remote" (4), and "It is difficult to take the dilemma seriously as it seems unreal" (5). A total score of 6 - 17 indicates familiarity, and a score of 18 - 30 indicates unfamiliarity with moral dilemmas in NDT. For an easy understanding of the familiarity variable in our model, we reversed the scores, so in our model, higher scores show more familiarity.

The Nursing Dilemma Test was translated into Persian, and back-translated and validated by Zirak et al. (2011). We obtained permission to use the Persian version of the NDT in our study from Zirak et al (24). The translated NDT was given to 10 nursing students and its reliability was found to be desirable using the test-retest method with a Pearson's correlation coefficient of 0.73 ($P < 0.05$), and a Cronbach's alpha of 0.82 (25). We examined Cronbach's alpha to assess the internal consistency of 30 NDTs completed by nurses. Moreover, the coefficient alpha was equal to 0.76 for moral reasoning in the NDT.

3- The Professional Moral Courage Questionnaire (PMC): The PMC consists of 15 questions reflecting five themes: 1) moral agency, or the tendency to act as a moral agent, 2) multiple values, that is, the ability to employ various value sets to recognize the right action, 3) threat endurance, which helps nurses to take the right action despite threats, 4) going beyond compliance, which means nurses will consider the rules but decide to go beyond them to do what is right, and 5) moral goal, or the drive to accomplish tasks without taking self-serving interests into account. Participants have answered the questions in the context of their work based on a 7-point scale, ranging from "never true" to "always true". Higher scores indicate greater levels of moral courage (26). The Professional Moral Courage Questionnaire is openly available for non-commercial and research purposes. The PMC was translated into Persian, and back-translated and validated by Mohammadi et al. (2014). Based on their experts' feedback, the response scale was modified to a 5-point scale, ranging from "never true" (1) to "always true" (5). The internal consistency of the PMC was attained in their study (Cronbach's alpha of 0.85) (20). In our study, the coefficient alpha of 30 completed questionnaires was equal to 0.90, which showed suitable reliability.

The data were analyzed using the SPSS software version 20 at 0.05 *P* level. The Kolmogorov-Smirnov normality test showed that differences in the study variables of demographic and work characteristics did not have normal distributions, and therefore non-parametric tests were applied. A multivariate regression model with the backward stepwise method was used to determine the most significant predictors of moral courage.

The approval of the Research Ethics Committee (ID number: IR-

UMSHA.REC.1395.486), as well as the Research and Technology Vice-chancellor at the Hamadan University of Medical Sciences (ID number: 9511056842) were were obtained prior to the conduct of the study. Anonymity and confidentiality were guaranteed. All the respondents signed an informed consent.

Result

Of the 239 eligible nurses, 224 returned a fully completed questionnaire, yielding a 93.7% response rate. On average, the participants were 30 ± 6.65 years of age (range: 22 - 46). Most were women (66.1%), had a Bachelor's degree (95.5%), were employed in internal wards (44.6%), worked the morning shift (45.5%), and had 6.96 ± 6.25 years of work experience (range: 1 - 22).

The percentages of participants' responses for the variables measured by the NDT across the six scenarios are presented in Table 1.

Table 1- Scores on the Nursing Dilemma Test across scenarios

Scenarios [A]	*Scenario 1*	*Scenario 2*	*Scenario 3*	*Scenario 4*	*Scenario 5*	*Scenario 6*	*Total* [B]
Decision-Making ***n (%)***							
Cannot decide	*84 (37.5)*	*38 (17.0)*	*75 (33.5)*	*58 (25.9)*	*53 (23.7)*	*56 (25.0)*	*364 (27.1)*
Should act	*125 (55.8)*	*149 (66.5)*	*123 (54.9)*	*154 (68.8)*	*159 (71.0)*	*142 (63.4)*	*852 (63.4)*
Should not act	*15 (6.7)*	*37 (16.5)*	*26 (11.6)*	*12 (5.4)*	*12 (5.4)*	*26 (11.6)*	*128 (9.5)*
Moral Development ***n (%)***							
Pre-conventional	*66 (29.5)*	*96 (42.9)*	*62 (27.7)*	*84 (37.5)*	*52 (23.2)*	*27 (12.1)*	*387 (28.8)*
Conventional	*50 (22.3)*	*20 (8.9)*	*47 (21.0)*	*58 (25.9)*	*91 (40.6)*	*48 (21.4)*	*314 (23.4)*
Post-conventional	*108 (48.2)*	*108 (48.2)*	*115 (51.3)*	*82 (36.6)*	*81 (36.2)*	*149 (66.5)*	*643 (47.8)*
Practical Considerations ***M ± SD***							
	3.38±1.44	*2.96±1.52*	*3.63±1.51*	*3.87±1.52*	*2.96±1.48*	*3.19±1.55*	*19.97±4.01*
Moral Reasoning ***M ± SD***							
	6.78±2.11	*7.37±1.70*	*7.36±2.38*	*7.00±2.36*	*7.27±1.98*	*7.42±1.99*	*43.21±5.98*
Familiarity with Moral Dilemmas ***M ±SD***							
	2.35±1.46	*2.24±1.06*	*2.59±1.11*	*2.38±1.13*	*2.25±1.00*	*2.14±1.01*	*13.93±4.85*

[A] *A newborn with anomalies (Scenario 1); forcing medication (Scenario 2); an adult's request to die (Scenario 3); new nurse orientation (Scenario 4); medication errors (Scenario 5); and an uninformed terminally ill adult (Scenario 6)*

[B] *Total scores in the 6 scenarios of the Nursing Dilemma Test (NDT)*

These indicate that most nurses made the decision to act in all scenarios (364 responses out of 1344 possible responses for the six scenarios, equaling 63.4%), and were in the post-conventional level of moral reasoning. Overall, participants reported moderate levels of practical considerations (19.97 ± 4.01), a high level of moral reasoning (43.21 ± 5.98), and familiarity with similar moral dilemmas (13.93 ± 4.85).

The mean score on the PMC was above the midpoint of the scale (56.16 ± 10.18). The mean scores on the PMC subscales were high, as shown in Table 2.

Table 2- Mean scores of the Professional Moral Courage Questionnaire (n = 224)

Scale	*Mean ± SD*
Total Scale	
Professional Moral Courage (possible scores 15 - 75)	*56.16 ± 10.18*
Sub-Scales	
Moral Agency (possible scores 3 - 15)	*12.18 ± 2.66*
Moral Goal (possible scores 3 - 15)	*11.46 ± 2.71*
Multiple Values (possible scores 3 - 15)	*11.31 ± 2.67*
Going beyond Compliance (possible scores 3 - 15)	*10.78 ± 2.27*
Threat Endurance (possible scores 3 - 15)	*10.42 ± 2.28*

The bivariate associations among study variables are shown in Table 3 as the mean (standard deviation) scores on moral courage, moral reasoning, practical considerations, and familiarity with moral dilemmas across participants' demographic characteristics. Significant correlations (all *P*'s < 0.05) were found for some demographic characteristics.

Table 3- Study variables by demographic and work characteristics (n = 224)

Demographic Variables	*N%*	*Professional Moral Courage*	*Moral Reasoning*	*Practical Consideratio*	*Familiarity*
Age, year					
22 – 27	*122 (54.5)*	*56.65 (±9.61)*	*43.32 (±5.73)*	*20.30 (±4.28)*	*14.53 (±4.59)*
28 – 33	*43 (19.2)*	*58.79 (±10.03)*	*45.44 (±5.69)*	*19.54 (±2.90)*	*14.67 (±5.02)*
34 – 39	*36 (16.1)*	*57.66 (±9.80)*	*40.81 (±6.45)*	*20.67 (±4.15)*	*13.28 (±5.17)*
40 – 46	*23 (10.3)*	*46.26 (±8.80)*	*42.17 (±5.83)*	*18.00 (±3.59)*	*10.44 (±3.85)*
Kruskal-Wallis test		*H=23.44, P = 0.000*	*H=9.97, P = 0.020*	*H=9.75, P = 0.021*	*H=17.47, P = 0.001*
Nursing Job Experience, year					
1-7	*142 (63.4)*	*57.16 (±10.01)*	*43.54 (±5.54)*	*20.10 (±4.11)*	*14.44 (±4.90)*
8-14	*51 (22.8)*	*56.63 (±9.31)*	*43.04 (±7.23)*	*19.84 (±3.54)*	*14.43 (±4.24)*
15-21	*24 (10.7)*	*52.29 (±12.10)*	*41.75 (±5.67)*	*20.17 (±4.51)*	*10.96 (±4.22)*
22-29	*7 (3.1)*	*45.86 (±2.67)*	*42.57 (±6.19)*	*17.71 (±3.30)*	*10.14 (±5.49)*
1-7	*142 (63.4)*	*57.16 (±10.01)*	*43.54 (±5.54)*	*20.10 (±4.11)*	*14.44 (±4.90)*
Kruskal-Wallis test		*H=11.32, P = 0.010*	*H=1.85, P = 0.605*	*H=1.68, P = 0.642*	*H=16.04, P = 0.001*
Gender					
Women	*150 (67.0)*	*56.34 (±10.23)*	*43.81(±5.86)*	*19.44 (±3.97)*	*13.98 (±4.92)*
Men	*74 (33.0)*	*55.80 (±10.15)*	*41.97 (±6.09)*	*21.05 (±3.89)*	*13.84 (±4.73)*
Mann-Whitney test		*Z=0.36, P = 0.717*	*Z=-1.95, P = 0.051*	*Z=-2.57, P = 0.010*	*Z=-0.95, P = 0.951*
Marital status					
Never married	*92 (41.1)*	*60.02 (±9.48)*	*43.32 (±5.16)*	*20.70 (±4.23)*	*15.21 (±4.73)*
Married[A]	*123 (54.9)*	*53.47 (±9.82)*	*42.13 (±6.52)*	*19.47 (±3.78)*	*13.05 (±4.74)*
Mann-Whitney test		*Z=-4.62, P = 0.000*	*Z=-0.25, P = 0.804*	*Z=-2.39, P = 0.017*	*Z=-3.58, P = 0.000*
Nursing Degrees					
Bachelor	*214 (95.5)*	*55.65 (±9.93)*	*43.08 (±5.98)*	*19.86 (±4.02)*	*13.92 (±4.83)*
Master	*10 (4.5)*	*66.90 (±10.03)*	*45.80 (±5.71)*	*22.50 (±2.68)*	*14.20 (±5.51)*
Mann-Whitney test		*Z=-3.54,*	*Z=-1.24,*	*Z=-2.33,*	*Z=0.34,*

Demographic Variables	N%	Professional Moral Courage	Moral Reasoning	Practical Consideratio	Familiarity
		P = 0.000	P = 0.216	P = 0.020	P = 0.732
Types of University [B]					
Public	144 (64.3)	57.96 (±9.71)	43.33 (±6.17)	20.47 (±4.03)	13.83 (±4.97)
Private	80 (35.7)	52.93 (±10.71)	42.98 (±5.67)	19.08 (±3.83)	14.13 (±4.64)
Mann-Whitney test		Z=-3.54, P = 0.000	Z=-0.20, P = 0.842	Z=-2.58, P = 0.010	Z=-0.52 P = 0.602
Employment Status					
Permanent	151 (64.7)	57.34 (±10.03)	43.60 (±5.88)	19.32 (±4.28)	14.14 (±5.52)
Impermanent	73 (36.3)	55.59 (±10.25)	43.01 (±6.04)	20.29 (±3.84)	13.83 (±4.50)
Mann-Whitney test		Z=-1.34, P = 0.180	Z=-0.43, P = 0.667	Z=-1.68, P = 0.094	Z=-0.78, P = 0.438
Most work schedules [C]					
Day shifts	102 (45.5)	57.40 (±10.44)	43.07 (±6.10)	20.11 (±3.56)	13.09 (±5.03)
Evening shifts	46 (20.5)	59.24 (±8.18)	43.41(±6.53)	21.48 (±5.24)	14.52(±4.79)
Night shifts	76 (33.9)	52.63 (±10.05)	43.26(±5.55)	18.88 (±3.40)	14.71(±4.50)
Kruskal-Wallis test		H=14.73, P = 0.001	H=0.36, P = 0.836	H=10.46, P = 0.005	H=7.54, P = 0.023
Service areas					
Internal wards	100 (44.6)	56.51(±10.48)	43.71 (±6.12)	19.43 (±3.88)	14.72 (±4.65)
Surgical wards	44 (19.6)	61.64 (±6.84)	45.02 (±5.15)	20.13 (±3.78)	14.34 (±4.51)
Emergency wards	45 (20.1)	49.51(±8.55)	41.22(±4.92)	20.49 (±4.76)	12.20 (±5.38)
Pediatrics wards	24 (10.7)	62.08(±7.48)	43.04(±7.80)	20.63 (±3.75)	13.58 (±4.67)
Critical care wards	11 (4.9)	45.36(±5.56)	39.82(±4.40)	20.71 (±3.10)	13.00 (±4.75)
Kruskal-Wallis test		H=53.25, P = 0.000	H=14.51, P = 0.006	H=2.48, P = 0.453	H=7.89, P = 0.096

[A] *Married: Married, Remarried, Divorced, and Widowed*
[B] *Type of University: Public (Local or National Public Medical Education University); Private: (Local Private University)*
[C] *Day (7:30 am – 2:30 pm), Evening (2:00 pm – 8:30 am), Night (8:00 pm – 8:00 am)*

As shown in Table 4, there were positive correlations between moral courage and moral reasoning ($P < 0.001$). Nurses with fewer practical considerations had more moral courage ($P < 0.05$). Also, participants were more likely to apply moral reasoning if they had fewer practical considerations, or had lower familiarity with moral dilemmas.

Table 4- Correlation between moral courage, moral reasoning, practical considerations, and familiarity with moral dilemmas (n = 224)

		Moral Courage	Moral Reasoning	Practical Considerations
Moral Reasoning	***ρ***	0.24**	1.00	
	p	0.000	_	
Practical Considerations	***ρ***	- 0.15*	- 0.35**	1.00
	p	0.026	0.000	_
Familiarity with Moral Dilemmas	***ρ***	- 0.04	- 0.24**	0.05
	p	0.509	0.000	0.499

** *Spearman's correlation (rho) is significant at the 0.01 level (2-tailed).*
* *Spearman's correlation (rho) is significant at the 0.05 level (2-tailed).*

Multiple regression analysis was applied to determine how well the combination of the studied independent variables explains the variance in professional moral courage using a backward stepwise method. The results (Table 5) indicated that moral reasoning, marital status (never married vs. married), the university where the participants graduated (public vs. private), service environment (emergency or critical care, vs. other wards) and work shift (night vs. evening or day shift) were significantly associated with moral courage. However, practical considerations and working in pediatric wards (vs. other service environments) were barriers to the nurses' moral courage. These predictors accounted for 42.1% of the variables affecting moral courage (R^2 = 0.421, F = 19.51, P < 0.001).

Table 5- Predictors of moral courage

	B	*SE*	*β*	*t*	*P*
(Constant)	*5.13*	*0.46*	*-*	*11.23*	*< 0.001*
Moral Reasoning	*0.02*	*0.01*	*0.20*	*3.53*	*0.001*
Practical Considerations	*- 0.03*	*0.01*	*-0.16*	*-2.70*	*0.007*
Marital Status (ref = never married)					
Married	*- 0.31*	*0.07*	*-0.22*	*-4.12*	*< 0.001*
Universities (ref = Public)					
Private	*- 0.23*	*0.08*	*-0.16*	*-2.99*	*0.003*
Service Area					
Emergency (ref = 0)	*0.57*	*0.09*	*0.33*	*6.09*	*< 0.001*
Pediatric (ref = 0)	*- 0.33*	*0.12*	*- 0.15*	*- 2.80*	*= 0.006*
Critical Care (ref = 0)	*0.68*	*0.17*	*0.21*	*3.90*	*< 0.001*
Work Schedules					
Night shifts (ref = 0)	*0.36*	*0.08*	*0.25*	*4.60*	*< 0.001*

Note: R^2 = 0.42, F = 19.51, P < 0.001.

***Predictors**: (Constant), Moral Reasoning, Marital Status (Never married = 0, Married = 1), Type of University (Public = 0, Private = 1), Service Area: Emergency Ward, Critical Care Ward, Pediatric Ward, Work Schedules (Day = 0, 0, 0; Evening = 0, 1, 0; Night = 0, 0, 1).*

***Excluded Variables**: Familiarity with moral dilemmas; age; nursing job experience (years); gender; nursing degree; employment status; most work schedules: day shift and evening shift; service area: medical and surgical wards.*

Discussion

The results of this study supported associations among nurses' moral courage, moral reasoning, practical considerations, familiarity with moral dilemmas, and demographic and work characteristics. This study is innovative in that it is the first one to examine the association between moral courage and moral reasoning in clinical environments.

In this study, most nurses responded that they would take the actions planned in the six scenarios presented in the NDT, and their responses were consistent across scenarios. Although in Iran nurses have a legal obligation to carry out physicians' written orders, most participants decided to do what they thought was right in the context of the scenarios. These findings differ from those in other countries. In a study in Turkey, a small percentage (25.5%) supported a decision to give terminally ill adults information on their prognosis, and about half (49.7 %) were willing to orient a new nurse to her/his responsibilities (27).

Most nurses who participated in this study were at the post-conventional level of moral development. This is similar to the findings of other studies, indicating that most Iranian nurses (28), Turkish nurses (29) and American nurses (30) were in the post-conventional level of moral development. However, the result of a meta-analysis showed that only expert nurses were at the post-conventional level, and that most nurses followed a uniform pattern of conventional ethical reasoning and practice (31). When nurses are at the post-conventional level, they recognize and mainly agree to follow the society's rules, norms and expectations, but their agreement is based on framing and accepting the general moral principles such as human rights that underlie these conventions. Attaining the post-conventional level, the highest level of Kohlberg's moral development, may be important to acting as a responsible professional (21, 23).

In this study, nurses achieved an above-average score in moral reasoning. This is comparable to the findings of other studies about nurses working in a university-affiliated hospital in the central (32), and another one in the northwest regions (33) of Iran, as well as a university hospital in Turkey (27). However, the nurses in the present study scored slightly lower than the nurses who participated in studies conducted in Korea (34). This closeness in nurses' moral reasoning across different cultures may come from the similarity in the ethical dilemmas they are faced with, which may be the reason why they consider the same solution as morally excellent.

In our study, although the 28 - 34 years old nurses showed the highest level of moral reasoning, no correlation was found between moral reasoning and years of nursing job experience. This can be due to the differences in nurses' experience of potential moral conflicts in different situations and not to the job experience itself. However, a negative association between moral reasoning and years of experience was found in another study (34).

Nurses who worked in surgical wards had a significantly higher level of moral reasoning than those in other service environments. These nurses provide care for patients undergoing a wide range of surgical procedures, and therefore need to manage post-operative complications including pain management, wound care and self-care needs. It should be mentioned that pain management was cited as the ethical dilemma most frequently encountered by nurses (35).

Our participants reported taking practical

issues into consideration when making ethical judgments in different situations. These practical considerations included time allotment, health team availability, and the physical structure of the situation (21). The mean level of practical considerations reported in our study was similar to that of Turkish nurses (27), but lower than another study on Iranian nurses (28). Our results indicated that practical considerations were higher in men and in nurses who had a master's degree, had graduated from a public university, or worked evening shifts. These nurses were more dependent on hospital rules than moral reasoning in ethical decision-making.

Our study findings showed that nurses had a fairly high familiarity with moral dilemmas. In the same way, most Turkish (27) and American nurses (21) were familiar with the ethical dilemmas assessed by the NDT. These consistent results may be due to the nature of the nursing profession rather than the cultural and health-care context where nurses practice. It was not surprising that nurses in the highest age group and those with the most experience were more familiar with similar dilemmas. Scores of familiarities with moral dilemmas were higher in nurses who worked day shifts than those in other groups. This difference may be due to the fact that older nurses with more experience work the day shifts.

Nurses who participated in this study reported a fairly acceptable level of professional moral courage. By creating a balance between rashness and fearfulness, moral courage makes a person act correctly in an ethical dilemma (36). Having fairly acceptable moral courage would enable a person to challenge unacceptable practices and policies (37). Persons who lack the moral courage to oppose poor standards of care or unaccepted policies will experience moral distress (8, 9, 18, 37). It seems that the nurses who participated in our study were able to perform ethically when faced with moral dilemmas. Nevertheless, even the most morally courageous nurse may be afraid to speak up when the organization does not support the nurses and react correctly to their concerns about standards of care (37).

In our study, a significantly positive association was found between moral courage and moral reasoning. Moreover, moral reasoning was the most important predictor of moral courage. Accordingly, it may be claimed that moral nursing practice depends on two important components: moral reasoning (principled thinking) and moral courage (acting). Moral reasoning and the ability to recognize the right decision are not enough for ethical practice, as courage is needed to take action (36). Moreover, courageous nurses do not act impulsively, but apply effective reasoning skills and seek moral resolution (38).

Our findings revealed a negative correlation between practical considerations (PC) and moral courage, and in the regression model, PC was a significant barrier to moral courage. The association between moral courage and PC had not been investigated in previous studies, and should be further examined in future research. The bivariate

correlation between moral courage and familiarity with moral dilemmas was not significant in our study, but some researchers found that moral courage can be improved by familiarizing nurses with strategies to address moral dilemmas through training (8, 39).

Our bivariate correlation showed that both age and work experience had a negative relationship with the nurses' moral courage, but in the regression model, neither was recognized as significant predictors of moral courage. Other researchers found that nurses who were older or had more work experience had more moral courage (19). Our results suggest that age or experience alone is not enough to develop moral courage, and additional strategies should be integrated into nurses' academic and professional life to promote moral courage in their confrontations with moral conflicts (12, 39). Through an intensive ethics education, nurses who experienced a moral dilemma were able to reflect on the experience, reason about the experience, then act and show behaviors that they had just learned (40).

In our study, participants who had a master's degree in nursing exhibited more moral courage than those who had a bachelors' degree, but this may have been due to the insufficient number of participants with a master's degree, which made it difficult to draw a robust comparison. Therefore, it can be concluded that education is not an important predictor of nurses' moral courage. Moreover, in another study in Iran, nurses with master's and bachelor's degrees were similar in terms of moral courage, which confirms our results. (19).

We also found that moral courage was higher in never married nurses. Given that some researchers found no association between moral courage and marital status, further research is needed in this area (19, 20).

Nurses who had graduated from public universities had more moral courage than those from private universities. Since this was a significant predictor of moral courage, more research is needed to further understand how moral courage is developed or strengthened in different types of universities (11).

Findings of the present study also revealed that nurses with permanent employment status demonstrated almost the same degree of moral courage as temporary nurses. In the regression model, permanent employment was not a significant predictor of moral courage, but other researchers found that nurses with permanent employment status had more moral courage than temporary nurses (19). It is possible that nurses with temporary employment cannot do the right thing because of the negative consequences and the risk of losing their job or social status (15). In clinical settings, the negative consequences of moral courage such as stress, fear of corrective measures, colleague isolation and losing the respect of the health-care team, and other barriers such as organizational culture can keep a nurse from exhibiting moral courage (41). However, further research seems to be necessary in this area.

Working in environments such as the emergency room and critical care (as opposed to the pediatrics ward) and working the night shift was directly related to the nurses' PMC. The critical condition of patients increases the incidence of life-threatening and end-of-life events, and nurses need more moral courage to make ethical decisions in these situations (36, 42). As these stressful events are common in the emergency and critical care environments and during night shifts, having more courageous nurses in these situations can promote the quality of ethical nursing practice. Moral reasoning and moral courage initially develop in the undergraduate and graduate nursing curriculums, but current nursing education programs cannot adequately equip nurses to deal with ethical dilemmas in stressful environments (9). As knowledge and training can help nurses to cope with moral dilemmas in ethically distressing situations (43), adequate education is needed to promote the moral courage of nurses working in these clinical environments.

One positive feature of this study was that it was the first study to focus on nurses' moral courage and moral reasoning using a multivariate model. Many factors including nurses' demographic and work characteristics, their moral reasoning, familiarity with moral dilemmas, and clinical considerations were studied as the predictors of moral courage for the first time. Another strength of this study was the random sampling and high response rate which led to less biased sampling. However, a cross-sectional study does not offer a study of the cohort effects, and it is therefore recommended to conduct a study on how these factors develop over time. It should also be mentioned that although we recruited nurses in all hospitals, the sample may not be representative of the nursing population throughout the community and/or outpatient clinics.

Conclusion

Most participating nurses made the decision to act in situations involving moral dilemmas and were therefore in the post-conventional level of moral development. They had a moderate level of moral reasoning, practical considerations, and familiarity with moral dilemmas. They also demonstrated a reasonable degree of professional moral courage. The nurses' moral courage was positively associated with moral reasoning, and negatively with practical considerations. However, more moral courage was found in nurses who had never been married, had graduated from a public university, had been employed in the emergency room and critical care ward, and had worked the night shift.

There are shortcomings in the undergraduate nursing curriculum as well as the continuing professional development in terms of moral courage and moral reasoning education. The role of nursing leaders is to boost and support professional moral courage and enhance nurses' powers of clinical reasoning and promote these professional values, which will consequently improve the ethical

environment of the health-care institution as well. Development of the organization's ethical environment, respectful communication among members of the health-care team, and a suitable supportive system could promote moral courage in clinical practice.

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