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The relationship between moral reasoning and nurses' professional values in undergraduate nursing students: a descriptive-correlational study

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Abstract

Background Moral reasoning in nursing is crucial in delivering high-quality patient care and fostering increased job satisfaction among nurses. Adhering to professional values is vital to this profession, and nurses must modify their actions to align with these values.

Objective This study aimed to examine the correlation between moral reasoning and professional values among undergraduate nursing students.

Research design A descriptive correlational design was recruited.

Participants and research context The research was conducted at three nursing schools located in Tehran, Iran. The sample was recruited through random stratified sampling, specifically targeting undergraduate nursing students. The data collection tool comprised a three-part questionnaire, including a demographic information form, the Nursing Dilemma Test, and the Nurses Professional Values Scale Revised Questionnaire. The distribution of questionnaires encompassed both face-to-face and electronic methods. The analysis of data was conducted using SPSS 16 software. The data was analyzed using the independent samples t-test, Pearson's correlation coefficient, and linear regression analysis. The *P* value of 0.05 was considered significant.

Ethical considerations The Ethics Research Center of Shahid Beheshti University of Medical Sciences approved the study.

Findings Data analysis showed that moral reasoning was directly correlated to professional values ($r=0.528$, $p<0.001$). The mean scores of Principled Thinking (P.T.), Practical Consideration (P.C.), and Familiarity with similar moral dilemmas of the NDT scale were 42.55 (SD=12.95), 15.72 (SD=6.85), 16.08 (SD=6.67), respectively. Also, the total score of professional values of students was 90.63 (SD=28.80).

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Conclusion The findings indicated that moral reasoning and interest in nursing predict students' professional identity. Thus, any effort to enhance interest in the profession can contribute to developing students' professional identity. This can involve incentivizing, enhancing the professional reputation at the community and university levels, and valuing student preferences and necessities.

Keywords Moral reasoning, Professional values, Nursing students, Nursing ethics

Background

The medical environment of nursing practice has been constantly evolving and becoming more complex. The continuous renewal of science and technology, the change in the disease spectrum, and the aging population have specifically impacted traditional nursing work [1]. On the other hand, the shortage of nursing human resources and the different disease cognition between nurses and patients have often led nurses into an ethical dilemma due to the confusion of roles, moral conflicts, and value conflicts [2–4].

Research findings in various nursing schools suggest a growing disregard among nursing students for ethical considerations in their everyday nursing practices. The nursing curriculum has recently been exposed to its lack of emphasis on ethics. Nursing schools do not explicitly cover the concept of professional ethics in any of their theoretical or clinical courses [5]. So, it seems that compared to professional nurses, nursing students are inexperienced and possess inadequate aptitude and the courage to confront and manage ethical dilemmas in clinical settings [6].

Nursing students face ethical problems in clinical settings, ranging from violating patient's rights and dignity to insecure care delivery [7]. Despite learning about different moral theories and principles during their education, nursing students may find it daunting to apply those principles due to minimal support and guidance in clinical settings [8, 9]. Encountering dilemmas in clinical settings can lead to student emotional distress, affecting their clinical learning and professional development [6, 10]. Thus, strategies are needed to improve nurses' and nursing students' moral reasoning abilities to minimize the likelihood of these problems [7].

Moral reasoning refers to the cognitive process of recognizing an ethical dilemma and selecting the suitable course of action, enabling nurses to make informed decisions [11]. Moral reasoning in nursing necessitates nurses to evaluate and make appropriate decisions to tackle the daily challenges they face in the clinical environment [12].

Kohlberg's research serves as the foundation for most studies on moral reasoning [13]. A classification of ethical development into six stages was suggested to assess advancement in attaining absolute universal justice. Some suggest that individuals' moral reasoning aligns with their advancement in each stage [14].

Kohlberg's model classifies moral reasoning into three levels: pre-conventional, conventional, and post-conventional, each comprising two stages. During the pre-conventional phase, individuals prioritize their interests and engage in actions focused on self-gratification or avoiding unfavorable outcomes. Within the conventional stage, individuals frequently use accepted social rules and principles to make decisions. At the post-conventional stage, individuals consciously align their actions with established ethical principles and prioritize ethical and compassionate decision-making [15].

Professional values are the performance standards accepted by the professional and specialist groups [16]. These values are the basis of nursing performance, the director of the nurses' interaction with the patients, colleagues, other professionals, and the public, and as a guideline for ethical behavior to provide secure and humanitarian care [17, 18]. Values are goals and beliefs that create behaviors and are a basis for decision-making and practice [19, 20]. The acquisition and internalization of professional values are necessary in care settings for professional development, and they provide a common framework for meeting professional expectations and standards [21, 22].

Considering that nursing involves scientific knowledge in addition to human and professional values, students must thoroughly understand these values to provide ethical care and engage in moral reasoning across various scenarios [23]. Professional nursing values play an essential role in shaping nursing professionals' competence. They encompass human dignity, integrity, altruism, and justice and guide nursing standards, practice, and evaluation [24, 25]. Therefore, developing nursing professional values can promote care quality, increase patient understanding, and increase job satisfaction and retention of nursing staff; it also helps the professional socialization process [21, 26].

Prior research has been conducted in this specific domain, and it is worth noting that these studies possess certain limitations. The investigation conducted by Hajilo et al. [27] explored the association between ethical reasoning and professional values in nursing students. The results of their study revealed no significant correlation between the two factors. The researchers highlighted certain limitations in their research conducted amidst the coronavirus pandemic. Hence, they propose that the study be replicated in clinical settings with a larger

sample size and random sampling to ensure better generalizability. Our study seeks to fill the gaps in this research by utilizing a larger sample size and examining and comparing these variables in nursing students from various semesters.

Moral reasoning and professional identity have been the subjects of only a limited number of Iranian studies, which have not fully addressed this topic's various dimensions. Considering the importance placed on moral reasoning and the professional values of nursing students, building upon the hypothesis, if there is a relationship between these variables, promoting moral reasoning can be considered a significant factor in cultivating nursing students' professional values. Thus, this study examined the relationship between moral reasoning and professional identity among nursing students.

Methods

Study design

The present study employed a descriptive-correlational design.

Sample and setting

The research was conducted at three nursing schools located in Tehran, Iran. The sample was recruited through random stratified sampling, specifically targeting undergraduate nursing students. The G*power software was utilized to determine the minimum sample size. The criteria for determining sample size were $\alpha=0.05$, $\text{power}=0.80$, and a correlation coefficient of 0.2 with a 10% drop-out rate. The number of samples allocated to each faculty was computed based on the student population at the time of data collection [28, 29].

$$C=0.5*\ln[(1+r)/(1-r)]$$

$$N=[(z_{\alpha}+z_{\beta})/C]^2+3.$$

Inclusion and exclusion criteria

The inclusion criteria were: (1) undergraduate nursing students who were studying in all semesters and (2) willingness and consent to participate in the study, and the exclusion criteria were: (1) returning incomplete questionnaires and (2) being students of other universities which was not in our inclusion criteria for setting and was transferred to this school.

Measurements

The research methodology involved the utilization of a demographic questionnaire, the Nursing Dilemma Test (NDT) [30], and the Nurses Professional Values Scale-Revised (NPVS-R) [31] as assessment tools. The demographic factors under investigation were determined through a comprehensive review of related studies and by consulting experts in the field.

Nursing dilemma test (NDT)

The NDT was established in 1981 at the University of Minnesota by Patricia Crisham [14]. NDT further examines nurses' moral reasoning, decision-making capabilities, practical considerations, and familiarity with moral dilemmas. The NDT comprises six scenarios that specifically address ethical dilemmas in healthcare. These scenarios cover a range of situations, including (1) dealing with a newborn who has anomalies, (2) the issue of administering medication forcefully, (3) handling an adult's request for assisted death, (4) orienting new nurses, (5) addressing medication errors, and (6) managing the treatment of an uninformed terminally ill adult [32].

Part A of the NDT focuses on the assessment of moral decision-making. In each of the six scenarios, participants are tasked with envisioning themselves as the nurse, and it is recommended that they respond to the question: "What actions should the nurse undertake? The choices for the participants include "Should act," "Cannot decide," or "Should not act." The nurse who acts has made a moral decision. The ethical decision-making of the nurses is shown by the percentage of their chosen actions in each scenario.

The second section provides six statements for consideration when approaching the scenarios, encompassing the ethical dilemma. The participants must select the most significant statement from these six and arrange them according to personal importance. The aim of the responses given in this section of the test is to evaluate the levels of "Principled Thinking" (P.T.) and "Practical Consideration" (P.C.). The possible minimum P.T. score on the test is 18, while the maximum P.T. score is 66. The minimum possible P.C. score achievable on the test is 6, while the maximum P.C. score is 36. The P.T. demonstrates the significance of including moral principles in making ethical decisions within the nursing field. When making ethical decisions, the P.C. considers environmental factors like patient load, resource availability, institutional policies, nurses' perception of administrative support, and doctors' decision-making authority [33].

The assessment tool NDT - Part C measures nurses' Familiarity (F) level with comparable moral dilemmas in each scenario, employing a 5-point scale. Items include: "I have decided in a similar dilemma" (score=1), "I know someone else in a similar dilemma" (score=2), "I do not know anyone in a similar dilemma, but the dilemma is conceivable" (score=3), "It is difficult to imagine the dilemma as it seems remote" (score=4), and "It is difficult to take the dilemma seriously as it seems unreal" (score=5). The scoring system for moral dilemmas in NDT categorizes familiarity as a total score between 6 and 17 and unfamiliarity as a score between 18 and 30 (Table 1).

Table 1 Sections of the NDT scale

Section	Measuring	Scoring
Part A	Moral decision-making	The moral decision-making of the nurses is showed by the percentage of their chosen actions in each scenario.
Part B	Moral reasoning (principled thinking), moral development, and practical considerations	PT: Max=66, Min=18 PC: Max=36, Min=6
Part C	Familiarity (F) with comparable moral dilemmas	NDT categorizes familiarity as a total score between 6 and 17, and unfamiliarity as a score between 18 and 30.

The assessment tool NDT - Part C measures nurses' Familiarity (F) level with comparable moral dilemmas in each scenario, employing a 5-point scale. Items include: "I have decided in a similar dilemma" (score=1), "I know someone else in a similar dilemma" (score=2), "I do not know anyone in a similar dilemma, but the dilemma is conceivable" (score=3), "It is difficult to imagine the dilemma as it seems remote" (score=4), and "It is difficult to take the dilemma seriously as it seems unreal" (score=5). The scoring system for moral dilemmas in NDT categorizes familiarity as a total score between 6 and 17 and unfamiliarity as a score between 18 and 30 (Table 1).

The reliability and validity of the questionnaire have been verified by its author, and it has been widely used by researchers [14, 34–36]. Borhani et al. [37] and Mogadasi et al. [38] reported Cronbach's alpha coefficients of 0.82 and 0.95, respectively, for the Persian version of the NDT.

Nurses professional values scale-revised (NPVS-R)

Weiss and Shank formulated the questionnaire utilized in this study in 2009 [39]. It comprises 26 elements from established nursing professional ethics codes, encompassing caring, trust, professionalism, justice, and activism.

The dimension of caring consists of 9 items, specifically items 16, 17, 18, 20, 21, 22, 23, 24, and 25. In the context of trust, there are five items to consider: 1, 2, 9, 14, and 15. The dimension of professionalism comprises four items, namely 5, 6, 7, and 8. The dimension of justice consists of three items, specifically items 3, 12, and 13. Finally, the dimension of activism encompasses items 4, 10, 11, 19, and 26.

The scoring is established on a five-point Likert scale, encompassing the spectrum from "unimportant" to "most important." The scoring system assigns a score of 1 to the option "unimportant," a score of 2 to "slightly important," a score of 3 to "moderately important," a score of 4 to "important," and a score of 5 to "most important."

The range of scores for this questionnaire spans from 26 to 130, and a higher score signifies a higher level of familiarity among nurses with professional values. When scoring, a score below 43 signifies low-level professional values, between 43 and 86 indicates medium-level professional values, and above 86 represents high-level professional values.

By employing Cronbach's alpha method, Weiss and Shank evaluated the tool's total reliability, revealing a favorable coefficient of 0.92 for the tool [40]. In a study conducted by Parvan et al. 2012, the Persian version of the questionnaire was evaluated for its validity. The validity of the Persian version of the questionnaire was examined by Parvan et al. after its translation, with the results indicating good face and content validity. Moreover, the Persian adaptation of the questionnaire displayed a Cronbach's alpha coefficient of 0.91 [41].

Data gathering

Data gathering lasted from June 1 to November 30, 2023. After securing ethical approval, the researchers presented in three nursing faculties of medical sciences universities. Participants were briefed about the research objectives face-to-face and online and filled out an informed written consent form. Then, participants were asked to complete the paper-based questionnaires. Once filled, researchers collected the questionnaires. Also, to increase the students' participation, an electronic link to the questionnaires was provided to them. Students did not feel coerced into completing the questionnaires because the researchers were not among their teachers.

Statistical analysis

Data analysis was performed using IBM SPSS Statistics 16.0. We used descriptive statistics (frequency distribution, mean, and standard deviation) and analytical statistics, including the analysis of variance (ANOVA), independent t-test, Pearson's correlation coefficient, and linear regression analysis. After screening the data for the assumptions of various parametric tests, correlations between moral reasoning and professional values were explored. Also, Multiple regression analysis was conducted to examine the best explanatory variables of professional values. The maximum alpha bias level for testing the hypotheses was fixed at 0.05.

Results

Participants

Two hundred (83.3%) of the 240 distributed questionnaires were returned from study subjects. The Tehran University of Medical Sciences accounted for 40% of the total sample size, while Shahid Beheshti and Iran universities each held a 30% share.

Table 2 The participating nurses' personal characteristics (N=200)

Variable		Frequency (%)		
Gender, n (%)	Male	111 (55.5%)		
	Female	89 (44.5%)		
	Total	200 (100%)		
Marital status, n (%)	Single	186 (93.0%)		
	Married	14 (7.0%)		
	Total	200 (100%)		
Academic Semester, n (%)	Semester-1	31 (15.5%)		
	Semester-2	20 (10.0%)		
	Semester-3	28 (14.0%)		
	Semester-4	37 (18.5%)		
	Semester-5	20 (10.0%)		
	Semester-6	24 (12.0%)		
	Semester-7	16 (8.0%)		
	Semester-8	24 (12.0%)		
Interested in nursing, n (%)	Total	200 (100%)		
	Yes	143 (71.5%)		
	No	57 (28.5%)		
	Total	200 (100%)		
Variable	N	Minimum	Maximum	Mean (SD)
Age	200	18.00	32.00	21.34 (2.01)

Table 3 Descriptive statistics for major study variables

Questionnaire		Minimum	Maximum	Mean (SD)
NDT	PT	20.00	66.00	42.55 (12.95)
	PC	6.00	35.00	15.72 (6.85)
	F	6.00	30.00	16.08 (6.67)
NPVS-R	Caring	9.00	45.00	31.89 (10.91)
	Trust	5.00	25.00	17.55 (5.85)
	Professionalism	4.00	20.00	16.56 (5.26)
	Justice	3.00	15.00	10.85 (3.58)
	Activism	5.00	25.00	16.56 (5.26)
Total		31.00	130.00	90.63 (28.80)

Abbreviations: NDT, Nursing Dilemma Test; NPVS-R, Nurses Professional Values Scale-Revised; PT, Principled Thinking; PC, Practical Considerations; F, Familiarity

Sample profile

The mean age of participants in this study was 21.34 (SD=2.01). Most of the participants (55.5%) were male, were single (93.0%), and were interested in nursing (71.5%). Regarding the academic semester, the fourth semester had the highest percentage of participants, at 18.5%, whereas the seventh semester had the lowest rate, at 8% (Table 2).

Moral reasoning and professional values

The study's findings showed that the mean scores of Principled Thinking (P.T.), Practical Consideration (P.C.), and Familiarity with similar moral dilemmas of the NDT scale were 42.55 (SD=12.95), 15.72 (SD=6.85), 16.08 (SD=6.67), respectively. Also, the total score of professional values of students was 90.63 (SD=28.80). The

scores of professional values dimensions are presented in detail in Table 3.

According to nursing students' answers to the ethical scenarios of the NDT test, difficulty in decision-making regarding the resuscitation of a child with an anomaly was observed in 18.5% of cases among nursing students. In terms of mandatory drug prescription and providing honest answers to people's questions at the end of life, the corresponding figures were 18% and 19%. The issue with the least amount of uncertainty pertains to the request of an adult to end their life, a situation which students overwhelmingly oppose, with a rate of 86%. In this particular scenario, a mere 9.5% of individuals remained undecided. The details are presented in Table 4.

Correlation between major study variables

Principled thinking (P.C.) was directly correlated to professional value's total ($r=0.528$), caring ($r=0.504$), activism ($r=0.531$), trust ($r=0.515$), professionalism ($r=0.496$), and justice ($r=0.452$), scores. This correlation was all significant ($p<0.01$) and moderate ($0.4<r<0.59$).

Practical consideration (P.C.) had significant, negative, and moderate correlation with professional value's total ($r=-0.539$), caring ($r=-0.521$), activism ($r=-0.527$), trust ($r=-0.546$), professionalism ($r=-0.490$), and justice ($r=-0.450$) scores.

Familiarity (F) with moral dilemmas didn't correlate with the total score of professional value or any other subscales of NPVS-R (Table 5).

Table 4 Answers of nursing students to the first part of the ethical scenarios of the NDT test

Scenarios	Options for each scenario	Participant responses n (%)
Scenario 1: New-born with anomalies	Must resuscitate the child.	115 (57.5)
	Do not resuscitate the child.	48 (24.0)
	Cannot make a decision.	37 (18.5)
Scenario 2: Forcing medication	Should forcefully give the medication.	77 (38.5)
	Should not forcefully give the medication.	87 (43.5)
	Cannot make a decision.	36 (18.0)
Scenario 3: Adult request to die	Should assist with respirations	172 (86.0)
	Should not assist with respirations	9 (4.5)
	Cannot make a decision.	19 (9.5)
Scenario 4: New nurse orientation	Should allocate time for orientation of nurse	95 (47.5)
	Should not allocate time for orientation of nurse	80 (40.0)
	Cannot make a decision	25 (12.5)
Scenario 5: Medication error	Should report the medication error now	142 (71.0)
	Should not report the medication error now	35 (17.5)
	Cannot make a decision	23 (11.5)
Scenario 6: Terminally ill adult	Should answer the patient's question honestly	96 (48.0)
	Should not answer the patient's question honestly	66 (33.0)
	Cannot make a decision	38 (19.0)

Factors influencing professional identity

Multivariate regression (enter method) determined that the practical consideration (P.C.) of the NDT scale is the most effective dimension in predicting the level of professional value of nursing students ($\beta = -0.356, p < 0.001$). The overall predictive value of the P.T., P.C., and F scales

to professional identity was 33.9% ($R^2 = 0.339$, Adjusted $R^2 = 0.329$) (Table 6).

Among the socio-demographic variables, multivariate regression showed that being interested in nursing ($\beta = -0.120, p = 0.045$), marital Status ($\beta = 0.090, p = 0.139$), and sex ($\beta = 0.035, p = 0.564$) respectively, have had the most significant effect on the professional value of nursing students. Of the abovementioned factors, only being interested in nursing significantly impacted professional values. This relationship was indirect, as higher interest was associated with weaker professional values. Together, these factors (P.T., P.C., F, marital Status, interest in nursing, and sex) explained about 36.2% of the variance in the professional value of nursing students (Table 7).

Discussion

Moral decision-making

The initial component of each scenario in the NDT questionnaire assesses students' moral decision-making capacity. Based on our study, it is evident that students demonstrated indecisiveness in fewer than 20% of cases for all six scenarios. The greatest challenge arose in determining the appropriate and truthful approach towards end-of-life patients, with the least complexity encountered when addressing the request for euthanasia by an adult patient. This implies that student nurses can readily decide about euthanasia. As per our results, nursing students rejected the patient's request in 86% of cases. This may pertain to the cultural aspects of euthanasia within the society under examination.

The primary factors linked to positivity and supportiveness stemmed from (a) the patient's experience of extreme and uncontrollable pain, unbearable suffering,

Table 5 The correlation between moral reasoning and nurses' professional values

Correlations			NPVS-R					
			Total	Caring	Activism	Trust	Professionalism	Justice
NDT	PT	Pearson Correlation	0.528**	0.504**	0.531**	0.515**	0.496**	0.452**
	PC	Pearson Correlation	-0.539**	-0.521**	-0.527**	-0.546**	-0.490**	-0.450**
	F	Pearson Correlation	-0.101	-0.095	-0.095	-0.068	-0.118	-0.117

** Correlation is significant at the 0.01 level (2-tailed).

Abbreviations: NDT, Nursing Dilemma Test; NPVS-R, Nurses Professional Values Scale-Revised; PT, Principled Thinking; PC, Practical Considerations; F, Familiarity

Table 6 Results of multiple linear regression analyses of professional identity

Variables	Unstandardized		Standardized	t	P	95.0% CI for B	
	B	SE	β			Lower	Upper
PT	0.660	0.188	0.297	3.521	0.001	0.290	1.030
PC	-1.497	0.361	-0.356	-4.148	0.000	-2.209	-0.785
F	0.428	0.266	0.099	1.610	0.109	-0.096	0.953

$R^2 = 0.339$, Adjusted $R^2 = 0.329$

Note: Multiple linear regression analysis was used to assess the impact of moral reasoning on professional value. The table presents unstandardized coefficients (B), standard errors (SE), standardized coefficients (β), t-values (t), p-values (P), and 95% confidence intervals (CI) for the coefficients

Abbreviations: SE, Standard error; CI, Confidence interval; R^2 , coefficient of determination. NDT, Nursing Dilemma Test; NPVS-R, Nurses Professional Values Scale-Revised; PT, Principled Thinking; PC, Practical Considerations; F, Familiarity

Table 7 Results of multiple linear regression analyses of professional identity

Variables	Unstandardized		Standardized β	t	P	95.0% CI for B	
	B	SE				Lower	Upper
PT	0.559	0.190	0.251	2.946	0.004	0.185	0.933
PC	-1.494	0.358	-0.356	-4.168	0.000	-2.201	-0.787
F	0.513	0.270	0.119	1.901	0.059	-0.019	1.046
Sex	2.004	3.464	0.035	0.579	0.564	-4.828	8.837
Marital Status	10.099	6.791	0.090	1.487	0.139	-3.295	23.493
Interested in nursing	-7.640	3.779	-0.120	-2.022	0.045	-15.094	-0.186

$R^2 = 0.362$, Adjusted $R^2 = 0.342$

Note: Multiple linear regression analysis was used to assess the impact of various socio-demographic factors on professional value. The table presents unstandardized coefficients (B), standard errors (SE), standardized coefficients (β), t-values (t), p-values (P), and 95% confidence intervals (CI) for the coefficients

Abbreviations: SE, standard error; CI, confidence interval; R^2 , coefficient of determination; NDT, Nursing Dilemma Test; NPVS-R, Nurses Professional Values Scale-Revised; PT, Principled Thinking; PC, Practical Considerations; F, Familiarity

or other distressing situations, (b) the legal aspects of euthanasia, and (c) the patient's right to choose their death. The negative and unsupportive attitude of nurses was influenced by various factors, such as religion, moral dilemmas, the role of gender in healthcare, and poor palliative care [42]. The findings of our study in this field have been validated by a recent study conducted in Iran. Additionally, the researchers discovered that nurses with elevated ethical reasoning exhibit a more unfavorable stance on euthanasia [43].

Moral reasoning

Moreover, the outcomes of our study demonstrated that the students possess a remarkable level of moral reasoning, enabling them to effectively navigate and resolve moral difficulties frequently encountered in clinical settings. These findings align with the results of a comparable study in this particular domain. The study revealed that the students' moral reasoning skills exceeded the average level [44]. Similar results were observed in another study on nurses [45].

Our study indicates a significant connection between students' moral reasoning and professional values. Higher professional values were linked to a more favorable level of professional reasoning. This is entirely consistent with the outcomes of comparable research [46, 47]. Nursing students who possess elevated professional values exhibit higher confidence when faced with ethical decision-making [48]. Considering the positive relationship between these two constructs, nursing education can help improve the other by strengthening each. The study's findings prove that moral reasoning can be a significant stimulus for enhancing professional values. Ethical reasoning exercises, such as simulating scenarios in a simulated environment, can help improve professional values. Conversely, there was a study that did not observe any substantial link between moral reasoning and the professional values of students [27].

The average score of practical considerations was at the average level, which indicates the importance of

environmental factors and organizational climate for students' ethical decision-making and clinical activities. One of the factors that can contribute to the influence of the work environment on the ethical decision-making and clinical performance of students is their limited exposure and incomplete familiarity with the work environment's rules. This aligns with the findings of the study conducted by Sari et al. According to their statement, students exhibit less susceptibility to environmental regulations when making ethical decisions than nurses or students of higher semesters [44]. However, it is worth noting that in two separate studies, students' practical considerations were higher than average, presenting a slight disparity with the results obtained in the present study [27, 49].

The current study revealed a significant inverse correlation between practical considerations and students' professional values. Thus, students who can decide and engage in moral thinking independently of the influence of environmental rules and organizational atmosphere uphold higher professional values. This is consistent with the results of a similar study [27].

Familiarity with moral dilemmas

The mean score of students' familiarity with situations shows that students are slightly familiar with different moral challenges. Students' lack of clinical experience and inadequate preparation for ethical dilemmas contribute to this issue. Findings from related research in this field yielded similar outcomes [27]. The findings indicated that students require extensive work experience to comprehensively understand ethical issues in clinical settings, which were inadequately addressed during academic semesters [44].

Professional values

The results obtained from the present study show that the average score of students' professional values was significantly high. Students show a heightened focus on the dimension of patient care and assign considerable importance to it, as per the reported priorities of

professional values. This issue highlights the significance of cautiousness in nursing education programs within college and clinical settings. The results of similar studies have been the same [50–52]. Concerning the dimensions, the research conducted by Poorchangizi et al. emphasized the significance of the caring dimension, aligning with our study. However, their study also highlighted the importance of the justice dimension, which contradicts our findings [51]. Moreover, this study also revealed that students exhibited a notably more positive perception of the significance of professional values than nurses [51].

Predictors of professional values

The main variables, P.C. and P.T., demonstrated acceptable predictive efficacy in predicting the professional value. However, demographic variables make a modest contribution to the prediction. When considering the demographic variables, it is evident that only interest in nursing plays a significant role in predicting professional values. The order of effect is as follows: P.C., P.T., interest in nursing, F, marital status, and sex. This means that the professional values of students are more influenced by the rules of the environment and organizational climate than by their decision-making and moral thinking. One of the notable points in this study is the negative relationship between interest in nursing and professional values. This could be because students who entered this field with interest had more expectations from this field. They wavered about professional values while entering the clinical environment and distancing themselves from the ideals. The findings of previous studies exploring the correlation between main variables and demographics have aligned with the findings of our research [51, 53, 54]. Among all the studies conducted, only Pourchengizi et al.'s research shows a notable association between age and the professional values of students [51].

Limitation

A limitation in correlational studies like this is the inability to demonstrate causation. Future research should be conducted with a larger sample size of nursing students from various faculties and a design that investigates cause-and-effect relationships.

A further restriction of this study concerns the scenarios posed in the NDT questionnaire. The responses and associated interpretations can be subjected to the impact of the cultural context. Generalizing the results of these scenarios to other communities can be challenging. A blended approach was adopted to collect students' data to optimize time and minimize time wastage. This can contribute to the potential response differences between these modes and impact the results.

Despite an in-depth examination of the current literature and consultation with experts in the field, no

specific confounding factors could be determined due to the limited number of relevant studies. Consequently, we analyzed the correlation between demographic characteristics and the main variables of the study. In the regression model, we included only those cases that demonstrated a substantial relationship with the primary variable below the level of 0.02. It is recommended that future researchers strive to identify confounding factors and mitigate their impact on the relationship between the main variables, thereby enhancing the generalizability of the results.

Implications for nursing education

Limited research has been conducted on the influence of educational factors, particularly curriculum, on students' professional identity and moral reasoning. It appears that, given the unique circumstances of the nursing profession, particularly in light of the COVID-19 pandemic, modifying the student curriculum would enhance their circumstances. Nursing educators must be qualified to successfully guide students in cultivating a suitable professional identity.

Conclusion

The findings from our study suggest that nurses showed a high level of moral reasoning and uphold professional values. Also, results revealed a noteworthy correlation between students' moral reasoning and professional values. The predictive value of moral reasoning in determining professional value was satisfactory. When considering socio-demographic variables, an interest in nursing was found to have a significant effect on professional values. Our research findings indicate that enhancing professional identity and moral reasoning can improve students' circumstances. Furthermore, generating interest in the nursing profession can impact the professional identity of these students.

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Author contributions

A.N. and A.Z. wrote the main manuscript text and A.Z. prepared Tables 1, 2, 3, 4, 5, 6 and 7. Statistical analysis was done by V.Y. All authors reviewed the manuscript.

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Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was approved by the Medical Ethics and Law Research Center of Shahid Beheshti University of Medical Sciences (IR.SBMU.RETECH.REC.1402.347). Informed written consent was obtained, and they were

also assured of the confidentiality of their information. In order to maintain confidentiality, participants were clearly told that they do not need to reveal personal information like their name, last name, or any other identifying details.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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