

## Research Paper

# Moral Intelligence of Nursing Students During Covid-19 Pandemic: The Role of Demographic Characteristics



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## ABSTRACT

**Background and Objectives:** Identifying moral intelligence is a fundamental change and need in nursing because becoming a good nurse depends not only on theoretical knowledge and clinical skills but also on the development of moral experiences in the application of moral knowledge and responsibility. Therefore, this study aimed to investigate the level of moral intelligence of nursing students during coronation and the role of demographic characteristics.

**Methods:** The present study was a descriptive correlational study. The statistical population of this study was all students of the Faculty of Nursing and Midwifery in Ghaen city in the academic year 2020-2021, which was selected using the available sampling method and using the Krejcie and Morgan table. The sample size was estimated to be 180 people and they answered the demographic information and Lennick and Kiel's Moral Intelligence Standard Questionnaires online through social networks. Mean, standard deviation, and one-sample t-test, multivariate analysis of variance was used to analyze the data using SPSS software v. 25.

**Results:** The results showed that the moral intelligence of nursing and midwifery students was at a high level. There was no significant difference between the components (honesty,  $P=0.762$ ), (responsibility,  $P=0.952$ ), (compassion,  $P=0.318$ ), (forgiveness,  $P=0.469$ ) of moral intelligence of male and female students ( $P<0.05$ ), but there was a significant difference between students' moral intelligence in terms of marriage and age ( $P<0.01$ ).

**Conclusion:** The results of the study require more attention from managers and health planners in the field of moral intelligence because it can help them in ensuring the health of their patients.

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## Introduction

**T**raining competent and capable nurses with moral competence and desirable profession is one of the main goals of nursing education [1]. Students working in clinical education settings, in addition to clinical competencies, must also have appropriate mental and emotional characteristics and desirable moral values [2]. The study of moral intelligence is one of the categories that can be a good test to measure the moral ability of nurses, because moral intelligence is the ability to understand correctly, to have strong moral beliefs, and to practice them, the possession of which will lead to the constant coordination of actions with beliefs and values [3].

The ability of individuals to place superior criteria that affect effectiveness at the center of individual reactions is called moral intelligence [4]. Lennick and Kiel believe that moral intelligence includes four main dimensions, including honesty (creating harmony between beliefs and actions of individuals), responsibility (accepting actions and their consequences and mistakes and failures), forgiveness (knowing the faults and mistakes and forgiving oneself and others) and compassion (paying attention to others) [5] and ten sub-categories, including continuous behavior towards the principles, values, and beliefs of truthfulness, standing for the right, keeping the promise, taking responsibility for personal decisions, admitting mistakes and failures, accepting responsibility to serve others, caring for others (kindness), understanding the ability to forgive one's own mistakes, and the ability to forgive the mistakes of others [6].

The role and position of moral intelligence and its importance in softening and improving interpersonal relationships and social relations, and especially in jobs related to the field of medical sciences and nursing that deal directly with people and their lives, have more appearance [7]. Nurses who have high moral intelligence can recognize the suffering of others, control cruelty and temptation, listen impartially, accept differences and realize various human values, reject immoral choices, empathize, fight injustice, understand others, and treat them with respect [8].

Regarding the level of students' moral intelligence and demographic factors, different results have been reported; for example, Raisi et al. showed that the mean of total moral intelligence of nursing and midwifery students in Qom was moderately high and there was a statistically significant relationship between age, gender, marriage, and moral intelligence [9]. Another study showed that there was no significant difference between the mean

scores of moral intelligence of medical and nursing students of [Mashhad Azad University](#) in terms of age, gender, and marriage [10]. The results of Rafatinejad et al. showed that the moral intelligence indices of medical students of [Tehran University of Medical Sciences](#) were not satisfactory and the results of the correlation test indicated a positive and significant relationship between age and moral intelligence [11]. In this regard, Saied et al. showed that the moral intelligence of most nurses was moderate. There was also a statistically significant relationship between gender and moral intelligence of intensive care unit nurses, but there was no statistically significant relationship between age and marital status [12].

With the outbreak of COVID-19, various crises occurred in different parts of the world, affecting different aspects of all human life [13]. One of the most important groups was students who faced a lot of anxiety and tension [14]. Given the severe moral dilemmas posed by the COVID-19 outbreak and related care, it is important to examine and analyze these moral tensions and dilemmas [15]. Among these, the performance of nursing and midwifery students is of special importance due to their human nature and professional ethics [9], because their moral performance plays an important role in the quality of care provided, patients' recovery, and also, achieving goals. Therefore, paying attention to the dimension of moral intelligence in nursing and midwifery students as an ethical guide for their performance is of particular importance and can be important in their attitudes and views towards the observance of ethical standards in their performance [16]. On the other hand, studies that have examined the psychological effects of the emerging phenomenon of COVID-19 and the type of psychological services are few and limited, and this is one of the innovative aspects of the present study. Therefore, this study aimed to investigate the level of moral intelligence of nursing students at the time of COVID-19 and also the role of demographic characteristics (age, gender, and marital status).

## Method

The present study was a descriptive correlational study. The statistical population of this study was all students of the Faculty of Nursing and Midwifery in Ghaen city in the academic year 2020-2021. Using the available sampling method and using the Krejcie and Morgan table [17], 180 students were selected and completed the questionnaires online. Inclusion criteria included interest in participating in research and studying at the undergraduate level, and exclusion criteria included refraining from continuing cooperation and incomplete completion of

questionnaires. The researcher used the following questionnaires to collect information:

#### Demographic information questionnaire

This questionnaire assessed age, gender, and marital status.

#### Moral Intelligence Questionnaire

In 2007, Lennick and Kiel designed the Moral Intelligence Questionnaire, which consists of 40 closed-ended questions on a five-point Likert scale (never, rarely, sometimes, often, and always) that are given a score of 1, 2, 3, 4 and 5, respectively. This questionnaire measures moral intelligence in four main components of honesty, responsibility, compassion, and forgiveness. In this questionnaire, each respondent receives a total score of at least 40 and at most 200. In the end, the scores 90 to 100 indicate excellent, 80 to 89 very good, 70 to 79 good, and 69 and poor moral intelligence. In the study by Lennick and Kiel, the optimal content validity coefficient and reliability coefficient by Cronbach's alpha method was 0.84 [3]. In Iran, Siadat et al. confirmed the validity of the scale by four-component factor analysis. The results of factor analysis of moral intelligence components showed honesty with a factor load of 0.64, responsibility 0.81, compassion 0.84, and forgiveness 0.83 with 80% subscription, and the total reliability of this test was obtained using Cronbach's alpha coefficient of 0.94 [18].

In this study, the principles and rules of ethics in the research, including informed consent, privacy, the anonymity of respondents, and confidentiality of information about the subjects were observed. Also, for analysis of data, mean, standard deviation and after examining statistical assumptions, one-sample t-test, multivariate analysis of variance at the significance level of  $\alpha=0.01$  were used using SPSS software v. 25.

## Results

Based on the results obtained, out of 180 people in the study, 62 people were 19 years old (34.5%), 49 people were 20 years old (27.2%), 32 people were 21 years old (17.8%), 27 people were 22 years old (15 %), and 10 people were 23 years old (5.5%). Also, 102 cases were female (56.7%) 78 were male (43.3%), 116 were single (65.5%), and 64 were married (34.5%).

A one-sample t-test was used to assess the moral intelligence of nursing students. Based on this test, the mean scores obtained were compared with the theoretical mean (mean value 3). Mean scores that are significantly higher than the mean value of 3 are considered as high moral intelligence and mean scores that are significantly lower than this value are considered as low moral intelligence. Scores that do not differ significantly from the mean value of 3 are considered moderate moral intelligence. Based on the results obtained from Table 1, the mean score of moral intelligence was higher than the mean value of 3; thus, it was concluded that the moral intelligence of nursing and midwifery students was at a high level.

Multivariate analysis of variance was used to compare moral intelligence according to gender, age, and marital status. Before performing the analysis, the assumption of normality was examined using the Kolmogorov-Smirnov test, the homogeneity of the covariance matrix was examined using the Mbox test, and the homogeneity of the variance of the dependent variables was examined using the Luben test, which due to the lack of violation of the aforementioned assumptions, the use of multivariate analysis of variance is permitted (Table 2).

According to the results presented in Table 3, the obtained F value was not significant for any of the components of moral intelligence ( $P<0.05$ ) and there was no significant difference between the moral intelligence of male and female students.

**Table 1.** Results of one-sample t-test to evaluate the level of moral intelligence of nursing students

Level of Moral Intelligence	Theoretical Mean	Observed Mean	t	P
Honesty	3	3.53	5.608	0.001
Responsibility	3	3.69	12.687	0.001
Compassion	3	3.91	16.789	0.001
Forgiveness	3	3.58	11.110	0.001
Overall moral intelligence score	3	3.68	15.862	0.001

**Table 2.** The statistical description of moral intelligence scores by gender, age, and marriage

Demographic Variables		Mean±SD					MANOVA
		Honesty	Responsibility	Compassion	Forgiveness	Moral Intelligence	
Gender	Girl	3.55±1.012	3.69±0.704	3.86±0.634	3.61±0.705	3.68±0.521	Wilks' lambda=0.989 F=0.472 P<0.001
	Boy	3.50±1.497	3.70±0.748	3.97±0.805	3.53±0.667	3.67±0.617	
Marital status	Married	3.89±0.957	3.92±0.801	4.12±0.639	3.81±0.675	3.94±0.467	Wilks' lambda=0.882 F=5.667 P<0.001
	Single	3.34±1.339	3.57±0.651	3.80±0.730	3.46±0.666	3.54±0.565	
Age (y)	19	3.53±1.082	3.63±0.620	4.0±0.843	3.59±0.814	3.69±0.598	Wilks' lambda=0.927 F=6.797 P<0.001
	20	3.61±1.715	3.70±0.663	3.82±0.728	3.57±0.567	3.67±0.606	
	21	3.47±0.922	3.85±0.767	3.82±0.566	3.73±0.540	3.72±0.416	
	22	3.61±1.026	3.56±0.861	3.96±0.521	3.43±0.751	3.64±0.531	
	23	3.12±1.016	3.86±1.024	3.89±0.657	3.47±0.651	3.58±0.692	

According to the results presented in [Table 4](#), the value of F obtained was significant for all components of moral intelligence at the alpha level of 0.01 ( $P<0.01$ ). Therefore, it is concluded that there was a significant difference between the moral intelligence of single and married students. Comparing the mean scores of the two groups, it is concluded that the moral intelligence of married students was higher than single people.

According to the results presented in [Table 5](#), the value of F obtained was significant for each of the components of moral intelligence ( $P<0.01$ ) and there was a significant difference between the moral intelligence of students of different ages.

## Discussion

This study aimed to investigate the level of moral intelligence of nursing students during the outbreak of COVID-19 and also the role of demographic characteristics (age, gender, and marital status). The results showed that the mean scores of moral intelligence were higher than the average; thus, it can be concluded that the moral intelligence of nursing and midwifery students was at a high level. The obtained result is in line with the results of previous studies in this field [9, 10]. As an example, Raisi et al. showed that the mean of moral intelligence of nursing and midwifery students of [Qom University of Medical Sciences](#) was moderately high [9]. Bayattork et al. showed that the moral intelligence score of medical and nursing students of Islamic [Azad University of Mashhad](#) was at a good level [10]; however, it is inconsistent with the results of Rafatinejad et al. and Saied et al. [11, 12]. Rafatinejad et al. showed that the moral intel-

**Table 3.** Inter-subject effects test to compare the components of moral intelligence of male and female students

Variables	Source	Total Squares	Degree of Freedom	Mean Squares	F	P
Honesty	Inter-group	0.144	1	0.144	0.092	0.762
	Error	270.834	173	1.566		
Responsibility	Inter-group	0.002	1	0.002	0.004	0.952
	Error	90.673	173	0.524		
Compassion	Inter-group	0.514	1	0.514	1.005	0.318
	Error	88.445	173	0.511		
Forgiveness	Inter-group	0.250	1	0.250	0.527	0.469
	Error	81.876	173	0.473		

**Table 4.** Inter-subject effects test to compare the components of moral intelligence of single and married students

Variables	Source	Total Squares	Degree of Freedom	Mean Squares	F	P
Honesty	Intergroup	11.840	1	11.840	7.904	0.006
	Error	259.138	173	1.498		
Responsibility	Intergroup	4.764	1	4.764	9.593	0.002
	Error	85.910	173	0.497		
Compassion	Intergroup	4.017	1	4.017	8.181	0.005
	Error	84.941	173	0.491		
Forgiveness	Intergroup	4.676	1	4.676	10.445	0.001
	Error	77.450	173	0.448		

ligence indices of medical students of [Tehran University of Medical Sciences](#) were not satisfactory [11]. In this regard, Saied et al. showed that the moral intelligence of most nurses was moderate [12]. Moral intelligence that people acquire gradually and in the face of the environment can be an important criterion in recognizing the correct moral actions, and it can be said that people with higher moral intelligence are less likely to make moral mistakes and also more effective with moral challenges. This ability is especially important in supportive professions, including nurses who deal with people and their lives, and will be directly reflected in their actions [19].

The results showed that there was a significant difference between the moral intelligence of students of different ages. The above finding is consistent with the other studies [16, 20]. Mohammadi et al. showed that there is a significant positive relationship between moral intelligence and nurses' age [16]. Also, Arašteh et al. [20] reported a positive and significant relationship between age and moral intelligence. However, it is inconsistent with the results of Saied et al. who showed that there was no statistically significant relationship between age and

moral intelligence of intensive care unit nurses [12]. It can be said that moral intelligence changes during the life of individuals. Considering that moral intelligence is based on principles, values, and beliefs, the more mature the values and beliefs of individuals, the higher the moral intelligence will be. This maturity will also be achieved in the path of increasing age [11].

The results showed that there was a significant difference between the moral intelligence of single and married students. Comparing the mean scores of the two groups showed that the moral intelligence of married people was higher than single people. These findings are in line with the results of previous studies in this field. Amini and Rahimi's study on engineering students showed that there was a significant difference between students' moral intelligence in terms of marital status [21]. Also, in another study, it was shown that there was a statistically significant relationship between students' moral intelligence and marriage [9]. Jahanian et al. showed that the level of moral intelligence of married students was higher than single students [22]. On the other hand, the obtained results are inconsistent with

**Table 5.** Inter-subject effects test to compare the components of moral intelligence of students of different ages

Variables	Source	Total Squares	Degree of Freedom	Mean Squares	F	P
Honesty	Intergroup	2.403	4	10.080	6.380	0.01
	Error	268.575	170	1.580		
Responsibility	Intergroup	1.760	4	3.577	6.841	0.01
	Error	88.914	170	0.523		
Compassion	Intergroup	1.186	4	3.908	7.574	0.01
	Error	87.772	170	0.516		
Forgiveness	Intergroup	1.362	4	3.190	6.717	0.01
	Error	80.764	170	0.475		



the results of Wimalarisi who concluded that the level of education and gender do not affect the moral intelligence of individuals [23]. In explaining this finding, Borba et al. believe that moral growth is an evolving process in people's lives [19]. Also, given that moral intelligence is a heterogeneous issue that is affected by several variables, undoubtedly many hereditary, psychological and social factors play a role in its occurrence and aggravation, and this has led to differences in the relationship between demographic characteristics, including morally intelligent marriage to be observed. The results showed that there was no significant difference between the moral intelligence of male and female students.

Consistent with this result, Raisi et al. showed that there was no significant relationship between demographic variables, such as gender and the level of moral intelligence of faculty members and staff of the [University of Medical Sciences](#); however, it is inconsistent with the results of previous studies [9, 22], which found that there was a statistically significant relationship between age and students' moral intelligence [24]. Also, Rucinski and Bauch, in their study concluded that the levels of moral intelligence between men and women are significantly different, which is inconsistent with our findings [25]. In explaining the obtained result, it can be said that moral intelligence is acquired and can be acquired by both genders; therefore, it can be said that the dimensions of moral intelligence are more influenced by personality traits [26].

Student life is an exciting and challenging time for students. During this course, all students, especially students of the Department of Nursing and Midwifery, due to facing more stressors, such as the weight of courses, long duration of the study, and the need for proper adaptation, should have more mental health and self-reliance to be able to achieve greater success in education and, ultimately, in their profession. Also, the challenges of student life, such as COVID-19, can provide them with sources of stress and endanger their health, and researching such circumstances is one of the strengths and innovative aspects of the present study.

The limitations of this research include self-reporting of research tools and lack of appropriate and coordinated access to conduct research work. Also, another limitation of the present study was the lack of relevant studies and duration of the study, which is suggested to study the role of these two factors in future studies. Also, because moral intelligence is an acquired ability and can be developed; the relevant universities and educational institutions, while strengthening the current situation, should pay special attention to the education and pro-

motion of students' moral intelligence using incentive methods to preserve moral values, as well as holding conferences and courses. It is suggested that future studies be conducted to strengthen the results and further generalizability with the approach of structural equations (the moderating role of demographic variables) in different student groups.

## Conclusion

Nursing and midwifery students during COVID-19 had higher than average moral intelligence, which can be effective in maintaining their health. This attracts more attention from managers and planners because students, as the future workforce with high dimensions of moral intelligence, play an effective role in building a moral and healthy society.

## Ethical Considerations

### Compliance with ethical guidelines

This research has the ethics code IR.BUMS.REC.1399.426 from the research ethics committee of [Birjand University of Medical Sciences](#).

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### Authors' contributions

Methodology: Nadia Shabib Asl, Writing – original draft: Morteza Ghorbani; Conceptualization and Supervision: Omid Mirzaei Fandakht; Data collection and Data analysis: Shiva Alinaghi Lou.

### Conflict of interest

The authors state that there are no conflicts of interests in this study.

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