

Original Article

Moral intelligence and aggression in studentsMarziyeh Raisi¹, Hoda Ahmar Tehran^{2*}, Sareh Bakouei¹, Somayeh Momenuan³¹ Spiritual Health Research Center AND Department of Midwifery, School of Nursing and Midwifery, Qom University of Medical Sciences, Qom, Iran² Spiritual Health Research Center, Qom University of Medical Sciences, Qom, AND Department of Medical Education, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran³ Department of Biostatistics, School of Paramedical Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran

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ABSTRACT

Background & Aim: Moral intelligence is one of the dimensions of intelligence that can provide a framework for the proper function of the individual. Nursing and midwifery students' performance is of great importance because of the moral and humanistic nature of their profession. Therefore, the present study aimed to assess the relationship between moral intelligence and aggression among nursing and midwifery students.**Methods & Materials:** This cross-sectional study was conducted on 210 nursing and midwifery students. Participants were selected through census method. Data were collected by Lennick and Kiel's moral intelligence questionnaire and Buss-Perry aggression questionnaire. Data analysis was performed using SPSS software.**Results:** The results showed that the mean scores of students' ethical intelligence was (73.2 ± 8.2) with a range of 32 to 100, and the mean scores of students' aggression was (69.3 ± 17.8) with a range of 38 to 143. Moral intelligence had a meaningful and moderate negative correlation with aggressiveness ($r = -0.150$, $P = 0.040$).**Conclusion:** Regarding the findings of this research which shows the relationship between moral intelligence and students' aggression, it is suggested that efforts be made to strengthen students' ethical values.**Introduction**

Morality is defined as a set of principles that are often used as a guideline (1). In fact, moral concepts represent forms of human life and describe beliefs and values guiding the human beings in their decisions. Nowadays, many educational and psychological experts and researchers pay more attention to moral intelligence, due to the vast influence it has on

other areas. Moral intelligence is the ability to differentiate right from wrong as defined by universal principles. Moral intelligence in the present modern world works as a compass guiding the future acts. In other words, moral intelligence directs other forms of human intelligences to do something worthwhile (2).

The term moral intelligence was first introduced in psychology by Borba (3). He defines moral intelligence as the capacity and ability to understand right from wrong, to have strong ethical convictions, to act based on them, and to behave in a right and honorable way. Moral intelligence acknowledges the fact that we are not inherently born moral or immoral.

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We just learn how to be moral. Borba introduces seven essential virtues for moral intelligence: conscience, empathy, self-control, respect and attention, kindness, tolerance, and fairness (3).

Moral intelligence has different aspects. Lennick and Kiel believe that moral intelligence consists of four main dimensions including integrity, responsibility, forgiveness, and compassion (empathy), and 10 subcategories including acting consistently toward principles, values, and beliefs, telling the truth, standing up for what is right, keeping promises, taking personal responsibility, admitting mistakes and failures, embracing responsibility for serving others, caring about others (kindness), the ability to forgive one's own mistakes, and the ability to forgive other's mistakes (4, 5).

On the other hand, sociologists and psychologists have approached behavioral disorders from various aspects to identify the causes, underlying contexts, and coping strategies to prevent and treat them. Moreover, researchers have been interested in investigating the effect of behavioral problems on academic and social performance, and also analyzing the effect of factors such as gender or socioeconomic status on behavioral disorders such as aggressive behavior among different groups. Causes and conditions such as genetic or inherited issues, disorganized families, anti-social and violator parents, communication with delinquent peers, living in over-crowded neighborhoods filled with crime, and lack of religious beliefs are of the most important factors helping the formation of wrong behaviors like aggression (6). Psychologists more often have defined aggression as any intentional harm inflicted upon one's own, others, or objects (7). Aggression is usually a behavior intended to inflict physical or emotional harm to others or to destroy others' property. Aggression might be displayed in different ways. Hostility refers to the cognitive aspect of aggression, and anger refers to the emotional aspect. Further, the behavioral aspect of aggression takes the form of verbal and physical action (8).

To predict and prevent behavioral disorders like aggression, analyzing the hazardous factors and strengthening protective factors seems

necessary. Developing and improving moral intelligence can be considered as one of the protective factors, because two of the main virtues in moral intelligence are responsibility and empathy (3-5); while empathy is in fact the key to enhance non-aggressive and pro-social behaviors (9). Studies indicate positive relationships between pro-social behavior, empathy, self-efficacy, and responsibility, and negative relationships between anger and aggressiveness and empathy (10).

Universities are one of the most important humanistic sources in each society, and the most important task of higher education is to teach advanced and professional skills and knowledge. In addition, conveying and promoting ethical values, enhancing personal and social capabilities, and improving personality, emotional, behavioral, and mental development are of the other important tasks of universities (1). Thus, the university requires an atmosphere in which staff, faculty, administrators, and students become responsible, caring, honest, and in general, ethical.

Medical students, including nursery and midwifery students, are exposed to different kinds of stress and work pressure due to their sensitive and stressful jobs and workplaces. This situation may lead to some negative behaviors such as aggressiveness. Therefore, one of the tasks of the universities must be improving the protective factors against such aggressive behaviors among these students. Due to the fact that, based on our investigations, no studies in Iran or abroad have been done on moral intelligence and aggression, the present study focuses on the relationship between moral intelligence and aggression among nursing and midwifery students in Qom University of Medical Sciences, Qom, Iran.

Methods

This sectional, descriptive, and analytical study was conducted to identify the relationship between moral intelligence and aggressiveness among the students of Qom University of Medical Sciences in 2014. The statistical population included all of the nursing and

midwifery students of Qom University of Medical Sciences, participating in the study through census method. For data gathering, we used surveys including demographic characteristics of the participants' questionnaire, Lennick and Kiel's questionnaire of moral intelligence, and Buss-Perry aggression questionnaire. 23 out of the total 233 questionnaires were not returned. Thus, the results were based on the remaining 210 questionnaires. In order to keep the confidentiality and fulfill research ethics, we assured the participants that their information would be fully confidential, and their responses would be used only for the research purposes and recognition of students' attitudes. To identify the relationship, mean and standard deviation (SD) were used for the quantitative variables, and frequency and percentage tables, independent t-test, analysis of variance (ANOVA), Pearson correlation, and multiple regression analysis were used for qualitative variables. Data were analyzed using SPSS software (version 18, SPSS Inc., Chicago, IL, USA). The significance level was set at less than 0.05.

Moral intelligence questionnaire: This questionnaire was designed by Lennick and Kiel in 2005 (11), and consists of 40 questions to look into 10 sub-scales of moral intelligence. Each aspect consists of four questions and these 10 sub-scales are divided into four general categories: integrity (with four subcategories), responsibility (with 3 subcategories), forgiveness (with 2 subcategories), and compassion or empathy (with one subcategory).

Respondents answered each question on a 5-point scale (from never to always), and the options were to be awarded a score of 1 to 5, respectively. Accordingly, in each sub-scale of moral intelligence which has four questions, each respondent will have a score of 4-20, and considering the total 40 questions, he/she will have a score of 40-200. After calculating the scores, in order to turn them into a maximum of 100, the score of each sub-scale (which is a number between 4 and 20) was multiplied by five, and the total score (which is a number between 40 and 200) was divided by two. Ultimately, scores between 90 and 100 were considered as excellent, and scores 80-89, 70-79,

and scores less than 69 were evaluated as very good, good, and poor, respectively. The score of each general dimension of moral intelligence was obtained from the mean score of its sub-scales (1). Martin and Austin have confirmed the reliability and validity of this instrument (12). This questionnaire has been standardized in Iran by Arasteh et al. in 2011. They calculated 0.897 Cronbach's alpha for the questionnaire (13). In other studies, Bahrami et al. (1) and Eskandari et al. (14) calculated Cronbach's alpha of 0.894 and 0.838, respectively. The questionnaire's validity type is face validity.

Buss-Perry aggression questionnaire: This 29-item questionnaire gives the participants a choice along a five-point continuum (from 5 which is totally right to 1 which is totally wrong). This questionnaire identifies four dimensions of aggression: physical aggression, verbal aggression, anger, and hostility. The total score of aggression is calculated by the sum of all sub-scale scores resulting in a score from 29 to 145. Higher scores indicate higher levels of aggression (15). Samani has determined the validity and reliability of this questionnaire in Iran and has approved it as properly valid and reliable for the use of Iranian researchers and scholars (16). The reliability of the main version of this questionnaire is calculated by its designers and it is equal to 0.80 for physical aggression, 0.76 for verbal aggression, 0.72 for anger, and 0.72 for hostility. Using test-retest method, Samani calculated the correlation coefficient of this method as 0.78 (16).

Results

Of 210 students participating in this study, 122 students were female (58.1%) and 88 ones were male (41.9%). The average age of participants was 23.37 ± 5.28 . Among all the students participating in this study, 85.2 percent were undergraduate nursing students and 14.8 percent were non-continuous bachelor midwifery students. 75.6 percent were single and 22.2 percent had a job. Considering the participants' fathers' education, elementary level was the most frequent (26.4%) and master's degree or higher was the least frequent (4.8%).

Table 1. Mean scores and status of the sub-scales of individuals' moral intelligence

Variable	Minimum	Maximum	Mean	SD
Acting consistently toward principles, values, and beliefs	30	100	74.3	11.5
Telling the truth	35	100	76.1	10.0
Standing up for what is right	30	95	68.6	10.7
Keeping promises	30	100	75.6	11.4
Taking responsibility for personal choices	25	95	73.5	10.1
Admitting mistakes and failures	35	100	73.3	10.0
Embracing responsibility for serving others	35	100	71.7	11.8
Showing compassion to others	30	100	74.2	12.2
Letting go of your own mistakes	35	100	73.1	10.3
Letting go of others' mistakes	30	100	71.4	11.6
Total moral intelligence	32	100	73.2	8.2

SD: Standard deviation

Considering the participants' mothers' education, elementary level was the most frequent (42.0%) and seminary education (2.0%) was the least frequent. Being self-employed was the most frequent job among the participants' fathers (46.1%), and being a housewife was the most frequent for their mothers (92.8%). In relation to the financial condition, most of the students (64.7%) had stated that their family had an average income. Average mean score of the students during their university years was 15.83 ± 1.48 . The mean and SD of total score of the moral intelligence questionnaire was 73.2 ± 8.2 with a range between 32 and 100. The total moral intelligence score of 117 participants was at a good level (55.7%). Among the different dimensions of moral intelligence, standing up for the rights had the lowest mean score (68.6%), and telling the truth had the highest mean score (76.1%) (Table 1). The mean and SD of the total score of the aggression questionnaire was 69.3 ± 17.8 with a range between 38 and 143 (Table 2). Pearson correlation test showed that the mean score of overall moral intelligence with mean of total aggression score has a significant negative and moderate relationship ($r = -0.15$, $P = 0.040$) (Table 3). In other words, higher levels of moral intelligence indicate lower levels of aggression. Among the dimensions of moral intelligence,

only "taking responsibility to serve others" had a significant negative correlation with overall aggression ($r = -0.200$, $P = 0.006$), physical aggression ($r = -0.200$, $P = 0.004$), anger ($r = -0.200$, $P = 0.030$), and hostility ($r = -0.190$, $P = 0.009$). The dimension "taking responsibility for the personal decisions" had a statistically significant negative correlation with aggression ($r = -0.160$, $P = 0.030$). Also, there was a significant negative correlation between "loyalty to covenant" and physical aggression ($r = -0.150$, $P = 0.030$), and only the dimension "persistence to the right" had a significant negative correlation with verbal aggression ($r = -0.200$, $P = 0.001$). Except the dimensions of "persistence for the right" and "caring about others", all the other dimensions of the moral intelligence had a significant negative correlation with hostility ($P < 0.050$). To investigate the relationship between each demographic variable with moral intelligence and aggression, independent t-tests, ANOVA, and Pearson correlation coefficient were used. The results of single-variable tests showed that among all the different variables, gender, marital status, and field of education had a correlation with moral intelligence ($P < 0.050$). Specifically, female, married, and midwifery students had a higher level of moral intelligence, respectively.

Table 2. Mean scores and status of the sub-scales of individuals' aggression

Variable	Minimum	Maximum	Mean	SD
Physical aggression	9	91	19.3	7.9
Verbal aggression	6	24	12.8	3.3
Anger	8	31	18.1	4.8
Hostility	8	34	18.5	5.9
Total aggression	38	143	69.3	17.8

SD: Standard deviation

Table 3. The correlation coefficient between each dimension of moral intelligence and the total score of aggression

Moral intelligence dimensions	Total score of aggression	Correlation coefficient	P-value
Acting consistently toward principles, values, and beliefs		-0.140	0.055
Telling the truth		-0.050	0.400
Standing up for what is right		0.007	0.900
Keeping promises		-0.140	0.058
Taking responsibility for personal choices		-0.160	0.030
Admitting mistakes and failures		-0.080	0.200
Embracing responsibility for serving others		-0.200	0.006
Showing compassion to others		-0.090	0.200
Letting go of your own mistakes		-0.100	0.100
Letting go of others' mistakes		-0.100	0.100
Total moral intelligence		-0.150	0.040

Moreover, age and the educational average score of the students had a significant positive correlation with moral intelligence ($r = 0.200$, $P < 0.050$). None of the demographic variables had a significant relationship with aggression ($P > 0.050$). Multiple regression analysis was also undertaken simultaneously in order to investigate the relationship between all demographic variables and moral intelligence and aggression. In this test, none of the variables were significant in the presence of each other ($P > 0.050$).

Discussion

The present study showed that the students with higher moral intelligence score have lower aggression score. Researchers could not find any studies on the relationship between moral intelligence and aggression. However, each of the variables alone has been studied, and also there have been studies on the relationship between some of the dimensions, like empathy and forgiveness, and aggression. Accordingly, Faramarzi et al. have found a significant negative correlation between all the dimensions of moral intelligence and mental and emotional disorders among students. In other words, the higher the moral intelligence score in all dimensions, the lower the mental and emotional disorders (17). Khademi et al. have also found a positive relationship between psychological resilience and moral intelligence with psychological wellbeing (18). Farhan et al. found that all the subscales of moral intelligence positively correlate with psychological wellbeing. They also found a significant positive

relationship between controlling anger and psychological wellbeing (19). Moghadas and Khaleghi found a significant relationship between moral intelligence and distress tolerance (20). Some other studies confirmed the effect of moral intelligence on improving communication skills and interpersonal relationship (14, 21, 22).

In the present study, among all the subscales of moral intelligence, only two subscales of "taking responsibility for personal choices" and "embracing responsibility for serving others" had a statistically significant negative correlation with aggression. In other aspects, no correlation was observed. Whereas some studies pointed out a negative correlation between empathy (one of the aspects of moral intelligence) and aggression, and showed that an increase in empathy would result in a lower aggression (6, 9, 23), some other studies have found a significant negative correlation between patience (one of the principles of moral intelligence) and aggression (24, 25). The other areas of focus have been the effect of forgiveness on physical and mental health (26, 27), and the relationship between compassion and mental health and decreasing emotional discomfort (28, 29). Lennick and Kiel concluded that, in general, moral intelligence increases life expectancy and health of individuals (4, 5). The reason behind the difference between our findings and other studies might be the difference in our statistical populations.

In the present study, the overall score of moral intelligence and its dimensions among the students was at a good level. The findings of some other studies have been consistent with our

findings, suggesting that moral intelligence among students, nurses, staff and faculty members has been at a favorable level (1, 13, 30, 31). However, Rafati et al. have claimed that the moral intelligence of medical students of medical sciences universities in Tehran, Iran, was below the average level (32). For our society which is religious and inclined to humanistic and spiritual values, desirable level of moral intelligence in students and other groups of society is expected.

We also observed the relationship between moral intelligence and age, educational average score, gender, marital status, and field of study. According to our findings, women, married people, and midwifery students had the highest levels of moral intelligence, respectively. In addition, age and educational average scores had a significant positive relationship with moral intelligence. These findings are in accordance with some studies and in contrast with some others. Arasteh et al. have found a relationship between moral intelligence and age and education of students. But they have not found any statistically significant relationship between other demographic factors and moral intelligence (13). Other researchers discovered a relationship between moral intelligence and age, education, and marital status, but no relationship between moral intelligence and gender (30, 32).

Consistent with the above mentioned studies, Danesh et al. did not find any relationships between moral intelligence and students' field of study and gender (33). Nor Hafizah et al. also have discovered that there were no significant differences between the Malaysian girls and boys, in terms of the different dimensions of moral intelligence (34). Regarding the relationship between age and moral intelligence, according to Borba, and Lennick and Kiel, it seems that educational enhancement would result in an improvement in the moral intelligence, too (3, 5).

The correlation of students' field of study and moral intelligence in the present study, might be due to different numbers of students in nursing and midwifery, and also the heterogeneity of the groups (in the field of midwifery, only women are allowed to attend).

Moreover, the midwifery students were non-continuous bachelors and mostly married, and also older than nursing students. Given that moral intelligence is a heterogeneous matter influenced by several variables, hereditary, psychological, and social factors undoubtedly have a role in the development and improvement of that, and this has caused differences in the relationship between demographic characteristics with moral intelligence.

In the present study, the total score of students' aggression was lower than the average score, and none of the demographic factors had a correlation with aggression. In accordance with our findings, Gini et al. found no difference in the moral disengagement and aggression among girls and boys (35). Similarly, Rahimi et al. have found no difference in aggression between girls and boys (36). Some studies consider the physiological factors to be effective in aggression. Gender has been considered as a crucial factor in aggression among human beings and animals. It is believed that physical aggression is more frequent among men than women (37, 38). Moreover, the research conducted by Abasiubong et al. showed that about 45 percent of the art students and 35 percent of medical students displayed aggressive behavior more than the usual level. It also showed differences among male and female students (39). Sharma has indicated that the factors related to aggression are different among male and female students (40). Tremblay et al. showed that male students, comparing to female students, represented more aggressive behaviors (41). Finally, in a study focused on Spanish students, Munoz-Rivas et al. reported a high level of aggression, in which gender was an effective factor (42).

Considering the relationship between aggression and gender, the difference between our findings and some other studies can probably be due to differences in the number of men and women in the samples. In our study, most of the sample population were female students.

Students (who were all young) formed the sample of this research. Thus, generalizing its findings to other groups with different demographic characteristics might not be easy. We

would suggest a more inclusive population with different groups of people in future studies. Moreover, we propose further studies on the effects of necessary interventions (such as educating moral intelligence and empathy within religious courses) to improve moral intelligence and to reduce behavioral disorder among students.

Conclusion

According to our findings which indicated the relationship between moral intelligence and aggression, and considering the importance of students' mental health for the society, and universities as well, the use of proper and continuous training on moral intelligence, and some programs to improve moral values among students are widely suggested. Hence, we would be able to picture a bright and successful future for the people of the society, and specifically for the students. Finally, considering the important role of medical students to sustain a healthy society, it is suggested that the authorities and medical educators pay specific attention to this area.

Conflict of Interests

Authors have no conflict of interests.

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