## Original Article

# Moral intelligence and its relationship to resilience among nursing students in Iran

 Hossein Namdar Areshtanab,[1]  Rana Rezvani,[1]  Hossein Ebrahimi,[1]
 Mohammad Arshadi Bostanabad,[2]  Mina Hosseinzadeh[3]

[1]Department of Mental Health and Psychiatric Nursing, Nursing and Midwifery Faculty, Tabriz University of Medical Sciences, Tabriz, Iran
[2]Department of Pediatric Nursing, Nursing and Midwifery Faculty, Tabriz University of Medical Sciences, Tabriz, Iran
[3]Department of Community Health Nursing, Nursing and Midwifery Faculty, Tabriz University of Medical Sciences, Tabriz, Iran

## Abstract

**Objectives:** In the nursing profession, moral intelligence and resilience are essential components for ethical decision-making and coping with stress. The aim of the present study was to examine moral intelligence and its relationship to resilience in nursing students.

**Methods:** A total of 280 nursing students at Tabriz University of Medical Science, Tabriz, Iran, participated in this descriptive correlational study in 2017. The data collection instruments used were a demographic questionnaire, the Lennick and Kiel Moral Competency Inventory, and the Connor-Davidson Resilience Scale. Analysis yielded descriptive statistics and inferential statistics about the data.

**Results:** The mean moral intelligence score of the nursing students was 78.54±8.57 and there was a significant relationship between the total moral intelligence and resilience scores and their respective dimensions (p>0.001). Multiple linear regression analysis revealed that the variables of age and grade point average demonstrated a significant relationship to resilience and moral intelligence and that these variables predicted 43% variance in resilience among the nursing students.

**Conclusion:** Given the importance of resilience in the stressful working environment of nursing and the effects that high moral intelligence can have on resilience, it is suggested that nursing managers emphasize moral intelligence in training, especially for nursing students and new nurses.

**Keywords:** Iran; moral intelligence; nursing students; resilience.

Nurses are the largest group providing professional health-care services. The goal of nursing is to provide knowledge-based and ethical care. In order to achieve this objective, they must have good mental health and well-being.[1] Nurses and nursing students face numerous stressful situations, including patient suffering and death and interactions with patient families,[2] which may affect their mental health and ability to provide care.[1] Clinical education is often challenging for students, and the fear of making errors in the clinical environment is a significant source of stress for nursing students.[3] Resilience is an essential acquired ability for succeeding in the workplace.[4]

Resilience is an important component of mental health. It reflects the ability of an individual to adapt to and recover from adverse conditions. Resilience is derived from a set of genetic, biological, situational, and protective factors;[4] it is dynamic and allows individuals to grow and develop the dimensions of self-esteem, self-control, and the ability to confront and overcome problems.[5] Positive adjustment to life is an outcome of resilience, and reduced resilience is associated with stress, anxiety, depression, and dissatisfaction. Training in skills such as communication, coping, and self-assertion can promote individual resilience and mental health.[6] Good resilience skills facilitate adjustment to the stress encountered in the educational

**What is presently known on this subject?**

• Resilience is a personality trait that helps individuals to cope with personal, educational, and professional challenges.

  Moral intelligence serves as a powerful guide and affects individual behavior.

**What does this article add to the existing knowledge?**

• Nursing students have a high level of resilience and moral intelligence.

  There is a significant relationship between moral intelligence and resilience: high moral intelligence can improve resilience in nursing students.

**What are the implications for practice?**

• Results of the present study suggest that it would be beneficial for nursing managers in universities and hospitals to accentuate moral intelligence as a component of training since it can improve resilience, which will prepare students for challenges in the educational environment and nursing practice.

environment as well as the workplace.[5] For nurses and nursing students to develop resilience, it is necessary to learn realistic means to avoid extreme emotional responses and cultivate problem solving abilities and effective coping strategies. Promoting creativity, flexibility, optimism, and positive emotions is helpful.[7] To provide appropriate interventional plans and strategies to meet students' needs for these skills, it is first necessary to assess their existing level of resilience.[2] The concept of resilience is currently particularly important in the nursing profession due to staff shortages and other challenges. Since today's students are tomorrow's nurses, increasing their self-efficacy and resilience is a practical and valuable mission.[8,9]

Intelligence is an influential factor of resilience. The ability to acquire and apply knowledge to form judgments and opinions based on reason includes dimensions of moral, spiritual, emotional, and rational intelligence.[10] Moral intelligence refers to the capacity to separate right from wrong as defined by universal principles and act according to one's values.[11] Moral intelligence is the ability to consistently apply ethical principles; it provides a framework for behavior.[12] Borba described 7 virtues of moral intelligence: empathy, conscience, self-control, respect, kindness, tolerance, and fairness. Moral intelligence serves as a powerful guide and influences individual behavior.[14] It shapes interpersonal interactions and the approach to problem-solving.[12] The moral requirements rooted in shared values and ethics affect much of human behavior.[14]

Due to the nature of the nursing profession, moral intelligence and resilience are of great importance in nursing education and daily work. The present study was designed to examine moral intelligence and its relationship to resilience in nursing students.

## Materials and Method

### Design and Sampling

This cross-sectional study was conducted using a descriptive correlational method. The research population consisted of all of the nursing students enrolled at the Tabriz University of Medical Science, Tabriz, Iran, during the fall semester (October to December) of 2017. The inclusion criteria were interest in participating in the research, completing the questionnaire, no history of completing similar questionnaires, and being a nursing undergraduate of the Tabriz Faculty of Nursing and Midwifery in the third through eighth semester of the program. The exclusion criteria were completion of an in-service training course on moral intelligence or resiliency, or student withdrawal at the time of the study. Once the criteria had been applied, 280 nursing students were selected using the census method.

### Instruments

A demographic questionnaire was used to collect study data of age, gender, marital status, on-/off-campus residence, religion, economic status, and grade point average (GPA).

The Lennick and Kiel Moral Competency Index (MCI) and the Connor-Davidson Resilience Scale were also administered. The moral intelligence questionnaire consists of 40 questions encompassing 4 components: honesty (questions 1–10), responsibility (questions 11–20), compassion (questions 21–30), and forgiveness (questions 31–40) that are scored using a Likert-type scale of 1 to 5. The initial possible score of 40 to 200 is divided by 2 to obtain a final moral intelligence score of 20 to 100. A score of 90 to 100, 80 to 89, 70 to 79, and 69 and below was classified as very high, high, moderate, and low, respectively.[15] In their study, Arshiha et al.[16] determined a Cronbach alpha reliability score for the questionnaire of .85. Mohammadi et al.[17] confirmed the validity of the questionnaire in another study.

The Connor-Davidson Resilience Scale consists of 25 questions in 5 dimensions scored 0 to 4 to indicate a response of not at all true to true nearly all the time. The first component of personal competence, standards, and tenacity is measured in questions 10,11, 12, 16, 17, 23, 24, and 25; trust in one's instincts, tolerance of negative affect, and view of the effects of stress is assessed in questions 6, 7, 14, 15, 18, 19, and 20; factor 3, the positive acceptance of change and secure relationships with others is quantified in questions 1, 2, 4, 5, and 8; control is gauged in questions 13, 21, and 22; and the element of spirituality is appraised in questions 3 and 9. The sum of all of the responses (0 to 100) is the final score and the cutoff point is a score of 50. Higher scores indicate greater resilience.[18] The validity and reliability of the questionnaire were confirmed in a previous study.[19] However, given the probability of the impact of cultural and other contextual issues, the validity of the questionnaire was also verified by 10 faculty members at the Tabriz University of Medical Sciences who approved the clarity and simplicity of the content.

### Statistical Analysis

Once the questionnaires had been returned and the normality of the data was established, SPSS for Windows, Version 16.0 (SPSS Inc., Chicago, IL, USA) was used to generate descriptive statistics and analyze the results with a t-test, calculate the

**Table 1. Demographic characteristics of the nursing students (n=280)**

| Characteristics | n | % |
|---|---|---|
| Gender | | |
|    Male | 109 | 36.6 |
|    Female | 171 | 64.4 |
| Marital status | | |
|    Single | 239 | 85.4 |
|    Married | 38 | 13.6 |
|    Divorced/widowed | 3 | 1.1 |
| Religion | | |
|    Islam | 277 | 99.6 |
|    Other | 1 | 0.4 |
| Residence | | |
|    On-campus | 162 | 58.1 |
|    Off-campus | 117 | 41.9 |
| Economic status | | |
|    Income less than expenses | 91 | 33.6 |
|    Income equals expenses | 148 | 54.6 |
|    Income more than expenses | 32 | 11.8 |
| Age (years)* 21.92±2.24 GPA* 3.29±0.32 | | |

*Mean±SD. GPA: Grade point average.[1–4]

Pearson correlation coefficient, perform analysis of variance and multiple regression analysis. The mean, SD, number, and percentage were used to describe the demographic characteristics. The Pearson correlation coefficient test was used to measure the relationship between the variables. Multiple regression analysis was also performed to investigate the relationship between demographic variables, moral intelligence, and resilience.

### Ethical Considerations

This study was approved by the ethics committee of Tabriz University of Medical Sciences on October 10, 2017 (no: 544692.D.5). The research goals and procedures, including preserving the anonymity of the information provided, were explained to the respondents, and voluntary participation was emphasized before members of the group provided written, informed consent.

## Results

The majority of the participants were female, Muslim, on-campus residents, and of moderate economic status. The mean age and GPA of the students was 21.92±2.24 years and 3.29±0.32, respectively (Table 1).

Analysis of the moral intelligence dimensions revealed that the highest mean was recorded in the dimension of compassion with a mean of 3.80±0.516 and the lowest mean was observed in the dimension of forgiveness: 3.68±0.52. The mean total moral intelligence score of the participants was

**Table 2. The mean scores of moral intelligence and resilience by dimension**

| Moral intelligence | Mean±SD | Resilience | Mean±SD |
|---|---|---|---|
| Responsibility | 3.79±0.53 | Personal competence | 3.81±0.62 |
| Honesty | 3.76±0.56 | Positive acceptance of change | 3.90±0.66 |
| Compassion | 3.80±0.51 | Control | 3.80±0.71 |
| Forgiveness | 3.68±0.52 | Trust in instincts | 3.70±0.63 |
| Total moral intelligence | 75.53±9.41 | Spirituality | 3.96±0.84 |
| | | Total resilience | 95.51±14.11 |

**Table 3. Relationship between dimensions of moral intelligence and resilience**

| | Personal competence | | Trust in instincts | | Positive acceptance of change | | Control | | Spirituality | | Total resilience | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | p | r | p | r | p | r | p | r | p | r | p | r |
| Nursing students | | | | | | | | | | | | |
|    Honesty | 0.00 | 0.50 | 0.00 | 0.53 | 0.00 | 0.62 | 0.00 | 0.46 | 0.00 | 0.46 | | |
|    Responsibility | 0.00 | 0.50 | 0.00 | 0.59 | 0.00 | 0.62 | 0.00 | 0.52 | 0.00 | 0.51 | | |
|    Compassion | 0.00 | 0.49 | 0.00 | 0.55 | 0.00 | 0.61 | 0.00 | 0.49 | 0.00 | 0.49 | | |
|    Forgiveness | 0.00 | 0.50 | 0.00 | 0.60 | 0.00 | 0.60 | 0.00 | 0.54 | 0.00 | 0.47 | | |
| Total moral intelligence | | | | | | | | | | | 0.00 | 0.66 |

r: Pearson correlation coefficient.

**Table 4. Comparison of moral intelligence and resiliency scores with demographic characteristics**

| Variable | Moral intelligence | | Resiliency | |
|---|---|---|---|---|
| | Mean (SD) | Statistical indices | Mean (SD) | Statistical indices |
| Nursing students | | | | |
| Gender | | | | |
|   Male | 152.55 (19.90) | T=0.44 | 95.24 (14.94) | T=-0.3 |
| | | df=234 | | |
| df=262 | | | | |
|   Female | 150.62 (17/88) | p*=0.77 | 95.85 (13.66) | p*=0.73 |
| Residence | | | | |
|   On-campus | 152.16 (19.0) | T=1.0 | 96.71 (13.75) | T=1.0 |
| | | df=236 | | df=236 |
|   Off-campus | 149.68 (18.61) | p*=0.13 | 93.87 (14.50) | p*=0.13 |
| Marital status | | | | |
|   Single | 151.14 (18.54) | F=1.30 | 96.13 (14.05) | F=1.81 |
|   Married | 152.24 (20.04) | df=2 | 98.75 (13.35) | df=2 |
|   Widowed | 134 (24.26) | P€=0.27 | 85.33 (24.98) | P€=0.16 |
| Religion | | | | |
|   Islam | 150.96 (18.82) | T=0.03 | 96.71 (13.75) | T=1.62 |
|   Other | 150.50 (18.62) | df=234 | 93.87 (14.50) | df=265 |
| | | p*=0.97 | | p*=0.10 |
| Economic status  (income: expenses) | | | | |
|   Less | 152.03 (15.06) | F=3.90 | 91.17 (15.09) | F=6.30 |
|   Equal | 153.58 (18.93) | dF=2 | 96.92 (13.44) | P€=0.02 |
|   More | 146.05(19.47) | df=2 | 99.50(12.33) | p€=0.07 |
| Age | r=0.11 | p**=0.09 | r=0.17 | p**<0.001 |
| GPA | r=-0.10 | p**= 0.11 | r=0.19 | p**=0.04 |

*: T-test; €: One-way analysis of variance; ** Pearson correlation coefficient. df: Degrees of freedom;  GPA: Grade point average.

78.53±9.41. The highest mean resilience dimension was the spirituality component: 3.96±0.84, while the lowest mean was observed in the dimension of trust in one's instincts: 3.70±0.63. The mean total resilience score of the study group was 95.51±14.11 (Table 2). There was a significant relationship between total moral intelligence and resilience scores and their respective dimensions (p<0.001) (Table 3).

Analysis of the sociodemographic characteristics revealed a significant relationship between moral intelligence and both economic status and age, and similarly, between resilience and both age and GPA. (Table 4). The results of multiple linear regression analysis showed that the relationship between resilience and moral intelligence was significant for the confounding variables (age and GPA), and that these variables predicted 43% variance in resilience among the nursing students (Table 5).

## Discussion

This study was conducted to investigate moral intelligence and its relationship to resilience among nursing students at the Tabriz University of Medical Sciences. The mean total moral intelligence score was 78.53±9.41 (range: 20–100), which indicates a good level of moral intelligence in the group. A high level of moral intelligence is a sign of attentiveness to the moral dimension of their profession.[17] These findings are consistent with other recent studies.[16,20] Some studies have reported a moderate or low level of moral intelligence among nursing students;[13,21] however, this difference may be, at least in part, a result of differences in the context of the study or the culture of the participants. In the religious context of Iranian

**Table 5. Results of regression analysis examining the relationship between demographic variables,  moral intelligence, and resilience**

| | B | ß | T |
|---|---|---|---|
| Nursing students' resiliency | | | |
|   Moral intelligence | 0.51 | 0.65 | 15.24 |
|   Age | 0.10 | 0.66 | 0.61 |
|   GPA | 0.14 | 0.08 | 0.76 |
| R²=0.43,  R=0.65, F=77.53 | | | |

ß: Beta coefficient; R²: Adjusted R. GPA: Grade point average.

society, a high level of moral intelligence is not unexpected.

The highest mean dimensional score was observed in the compassion component of the moral intelligence examination, while the lowest mean score was seen in the dimension of forgiveness. The mean of all dimensions of moral intelligence was higher than the midpoint, which signifies value given to ethics. This result was also consistent with recent studies.[13,16]

In the current study, the mean total resilience score was 95.51±14.11 (range: 25–125), which demonstrates a good level of resilience. These findings are similar to those reported in some recent research;[22,23] however, other studies have reported a low level of resilience among nursing students.[24] Given that resilience is a personal and a cultural characteristic,[25] differences in disparate groups and societies may not be surprising. Among the resilience dimensions, spirituality had the highest mean score. This may be a reflection of the religious culture of Iranian society and the belief that spirituality and the application of religious principles increases resilience in the face of adversity.

This study revealed a positive significant relationship between moral intelligence and resilience and the dimensions of each among nursing students. Recent studies have observed similar results.[21,26] Liner regression showed that age, GPA, and moral intelligence score predicted resilience in our group of nursing students. Gillespie et al.[27] also observed a significant relationship between age, nursing experience, and resilience in operating room nurses. It was reported in another study that older nursing students had a higher level of resilience, which was also seen in our findings.[28] A relationship between age and resilience is supported by research noting that moral intelligence and resilience are qualities that often increase over time with age and experience.[18,27]

Although sufficient for the analytical purposes of this study, obtaining our sample from a single city and the exclusion of other factors that could influence resilience are limitations to the interpretation of our results. In addition, the use of self-report instruments and the sensitivity of the topic may have affected the accuracy of the findings.

## Conclusion

Considering the importance of resilience for work in a stressful environment and the effects that high moral intelligence can have on resilience, it is suggested that nursing managers give more emphasis to this topic in their training programs, especially for nursing students and new nurses.

## References

1. Javadi Sharif T, Hosseinzadeh M, Mahdavi N, Namdar Areshtanab H, L Dickens G. Happiness and its relationship with job burnout in nurses of educational hospitals in Tabriz, Iran. Int J Community Based Nurs Midwifery 2020;8:295–304.
2. Thomas LJ, Asselin M. Promoting resilience among nursing students in clinical education. Nurse Educ Pract 2018;28:231–4.
3. Seyedamini B, Mahmoudifar Y, Esmaeillou Y. Effective stressors in clinical education. Int Arch Health Sci 2018;5:104–9.
4. Jackson D, Firtko A, Edenborough M. Personal resilience as a strategy for surviving and thriving in the face of workplace adversity: A literature review. J Adv Nurs 2007;60:1–9.
5. Stephens TM. Nursing student resilience: A concept clarification. Nursing forum: Wiley Online Library 2013;48:125–33.
6. Samani S, Jokar B, Sahragard N. Effects of resilience on mental health and life satisfaction. Iran J Psychiatry Clin Psychology 2007;13:290–5.
7. Cam O, Buyukbayram A. The results of nurses' increasing emotional intelligence and resilience. J Psychiatric Nurs 2015;6:130–6.
8. Oulton JA. The global nursing shortage: An overview of issues and actions. Policy Polit Nurs Pract 2006;7:34S–9S.
9. Taylor H, Reyes H. Self-efficacy and resilience in baccalaureate nursing students. Int J Nurs Educ Scholarsh 2012;9:2.
10. Yousefi P, Heshmati H. Moral intelligence and its position in nursing profession. Development Strategies Med Educ 2015;2:65–73.
11. Sotoodeh H, Shakerinia I, Kheyrati M, Dargahi S, Ghasemi Jobaneh R. Surveying the relationship between spiritual and moral intelligence and the psychological well-being of nurses. Iran J Ethics Med Hist 2016;9:63–73.
12. Flite CA, Harman LB. Code of ethics: Principles for ethical leadership. Perspect Health Inf Manag 2013;10:1d.
13. Rafati S, Mohammad Ahmadi-Vash T, Davati A. A study of ethical intelligence of medical students. Med Ethics J 2014;8:71–91.
14. Beheshtifar M, Esmaeli Z, Moghadam MN. Effect of moral intelligence on leadership. Eur J Econ Finance Adm Sci 2011;43:6–11.
15. Pahlavani F, Azizmalayeri K. The relationship between moral intelligence with organizational development. Int Acad J Organ Behav Human Resource Manag 2016;3:31–8.
16. Arshiha MS, Talari KL, Noghani F, Sedghi Goyaghaj N, Taghavi Larijani T. The relationship between moral intelligence and communication skills among nursing students. J Med Ethics Hist Med 2016;9:44–54.
17. Mohammadi S, Nakhaei N, Borhani F, Roshanzadeh M. Moral

intelligence in nursing: A cross-sectional study in East of Iran. Iran J Med Ethics Hist Med 2013;6:57–66.

18. Connor KM, Davidson JR. Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). Depress Anxiety 2003;18:76–82.

19. Pourafzal F, Seyedfatemi N, Inanloo M, Haghani H. Relationship between perceived stress with resilience among undergraduate nursing students. J Hayat 2013;19:41–52.

20. Raisi M, Ahmari Tehran H, Bakouei S, Jafarbegloo E, Momenuan S, Abedini Z. Evaluation of moral intelligence in nursing and midwifery students of Qom University of Medical Sciences. Educ Ethics Nurs 2016;5:9–16.

21. Darvishzadeh K, Bozorgi ZD. The relationship between resilience, psychological hardiness, spiritual intelligence, and development of the moral judgement of the female students. Asian Soc Sci 2016;12:170–6.

22. Salimi S, Pakpour V, Feizollahzadeh H, Rahmani A. Resilience and its association with the intensive care unit nurses' intention to leave their profession. J Hayat 2017;23:254–65.

23. Shakerinia I, Mohammadpour M. Relationship between job stress and resiliency with occupational burnout among nurses. J Kerman Univ Medical Sci 2010;14:161–9.

24. Chow KM, Tang WKF, Chan WHC, Sit WHJ, Choi KC, Chan S. Resilience and well-being of university nursing students in Hong Kong: A cross-sectional study. BMC Med Educ 2018;18:13.

25. McAllister M, Lowe J. The resilient nurse: Empowering your practice. 1st ed. USA: Springer Publishing Company; 2011.

26. Khademi M, Ghasemian D, Hassanzadeh R. The relationship of psychological resilience and spiritual experiences with psychological well-being among employees. J Psychol Behav Stud 2014;2:105–10.

27. Gillespie BM, Chaboyer W, Wallis M. The influence of personal characteristics on the resilience of operating room nurses: A predictor study. Int J Nurs Stud 2009;46:968–76.

28. Chamberlain D, Williams A, Stanley D, Mellor P, Cross W, Siegloff L. Dispositional mindfulness and employment status as predictors of resilience in third year nursing students: A quantitative study. Nurs Open 2016;3:212–21.