Comparison of Emotional Intelligence between Medical and Non-Medical Students

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Abstract

Background: Emotional intelligence is considered as one of the significant aspects of person-environment adaptation and one of the important factors of individual differences. As students of each society are the human resources and the constructors of its future, and their physical and mental health is of great importance, the present study aimed to compare emotional intelligence in medical and non-medical students of Hormozgan University of Medical Sciences.

Methods: This descriptive cross-sectional study was conducted on 483 students of Hormozgan University of Medical Sciences who were selected through stratified sampling in 2018. The data collection tool was the Goleman's standardized emotional intelligence questionnaire. Chi-square and independent t-test were used for statistical data analysis by SPSS version 20. The significance level was considered 0.05 in all the tests.

Results: The mean and standard deviation of emotional intelligence in medical and non-medical students were 81.79 ± 8.45 and 84.03 ± 7.71, respectively. The independent t-test showed that there was a significant difference between the mean score of emotional intelligence and the field of study ($P=0.003$).

Conclusion: The results of this study showed that the mean score of emotional intelligence in non-medical students was higher than that of medical students. Hence, it is suggested that educational managers of universities should have special financial investments in emotional self-awareness, while holding training courses and using human resource educators for conducting emotional intelligence promotion workshops.

Introduction

Emotional intelligence is a type of intrapersonal intelligence which can help the individuals achieve successes.[1-3] People with high emotional intelligence have a higher degree of satisfaction with life, enjoy family environments, get involved in others' feelings, and are usually regular, warm, successful, motivated and optimistic.[4-6] Individuals with high emotional intelligence can use all their existential capacities, turning limitations into opportunities and reaching career success.[7] Intelligence is considered as one of the significant aspects of individuals' adaptation with the environment and an important factor in individual differences. Emotional intelligence means the capacity to perceive, express, recognize, apply and manage emotions in one and others.[8, 9]

Students in each community are its human resources and future creators, and their physical and mental well-being is of great importance.[10] Researchers from the University of Kentucky studied emotional intelligence changes in a group of medical students at the University of Kentucky, USA, and found out that the changes were negligible and the

university's educational processes had little impact on the students' intelligence, while emotional intelligence could be improved by proper education.[11] Researchers from the University of Washington, USA, concluded that surgical assistance students had much higher emotional intelligence than others.[11]

As to emotional intelligence, improvement in the performance of students requires special attention, and due to the limited research in this field, further studies are needed.[12] The information in this research highlights the necessity of holding educational programs for improving emotional intelligence of the groups in need of interventions, so that emotional intelligence of the students will be increased during their internship, causing them to do their responsibilities better and have more academic achievements.[13]

Research indicated that students had significant signs of stress and showed more anxiety than the general population.[14] Besides, medical students experienced great stress and impulsion during clinical courses, especially during the internship. They showed more symptoms of depression and anxiety at this stage of their education, and were less satisfied with becoming doctors.[14] The degree of emotional intelligence has a positive correlation with several abilities sought by the new medical curriculum (e.g. patient-physician communication skills, strong sympathy, ability to resist stressful situations and strong emotions, teamwork skills and communications, stress management, and constructive leadership and participation).[15]

Emotional intelligence is a key to success in various areas of life such as education, occupation, social environment and mental health; however, it seems that in most medical schools of our country, educational goals as well as teaching and assessment methods are still based on memorization of a large volume of contents in pamphlets and textbooks, and analysis, thinking, reasoning, interpersonal relationships and impulsion control are less taken into account.

Based on the above-mentioned statements, the importance of emotional intelligence ,lack of attention to this issue in the students' curriculum, the performance of the educational systems, and lack of sufficient evidence on the comparison of emotional intelligence and its changes in medical and non-medical students, the present study aimed at evaluating and comparing emotional intelligence in medical and non-medical students in Hormozgan University of Medical Sciences.

Materials and Methods

Study Population

This cross-sectional study was conducted in Hormozgan province in 2018. The study population consisted of 2363 students studying in Hormozgan University of Medical Sciences during 2017-2018.

Inclusion Criteria

The inclusion criteria were having a bachelor's or higher degree, having passed at least two semesters, and being willing to participate in the research project.

Exclusion Criteria

The exclusion criteria were the lack of willingness to participate in the study at any stage and incomplete questionnaires.

Sample Size

Sample size: Based on Akbari's study[16] and the sample size formula with a confidence interval of 95%, it was estimated to have 403 participants, but 483 individuals were selected for higher reliability.

$$n = \frac{z^2 \cdot s^2}{d^2}$$

Sampling Method

The sampling was done through the two-stage stratified method. First, each medical school and then each field of study were considered as a class, and the number of samples was then determined proportionate to the number of students in each school and to each field of study. Next, the samples were randomly selected using the list provided by the university.

Data Collection Tool

The data collection tools in this study were a demographic questionnaire (on age, field of study, gender, marital status, etc.) and the Goleman's Emotional Intelligence Questionnaire (2001). The latter consisted of 22 items that measured four dimensions as follows: self-awareness (3 questions), self-management (7 questions), social awareness (empathy and cognition) (7 questions), and relationship management (social skills) (5 questions). The questions were scored based on the 5-point Likert scale as always (5), usually (4), sometimes (3), rarely (2), and never (1), and questions 8, 11 and 15 were reverse scored.[17] The questionnaire was validated in the study by Mafi et al. (2014) on nurses, and its Cronbach's alpha was obtained 87%.[14] In the present study, the Cronbach's alpha for self-awareness, self-management, social awareness (empathy and cognition), relationship management (social skill), and total emotional intelligence was 0.91, 0.90, 0.89, 0.93, and 0.90, respectively.

Statistical Analysis

The data were analyzed using the SPSS 20

software. To this end, the data normality was first measured using the Kolmogorov–Smirnov test. Then, the Chi-square and independent t-test were used for data analysis. The significance level in all the tests was considered to be 0.05.

Ethics Approval Code

The present study was approved by the Ethics Committee of Shiraz University of Medical Sciences with the code of ethical code: IR.SUMS.REC. 95-01-04-13103.

Results

The mean age and standard deviation of of medical and non-medical students were 22.89±2.86 and 22.54±2.65, respectively. The results of the independent t-test showed no significant difference between the two groups (P=0.25). The demographic characteristics of the subjects studied are shown in Table 1. The Chi-square test results showed no significant difference between medical and non-medical students in terms of gender (P=0.48). The Chi-square test also indicated that there was a significant difference between medical and non-medical students in terms of marital status (P=0.48).

The mean and standard deviation of emotional intelligence in medical and non-medical students were 81.79±8.45 and 84.03±7.71, respectively. The independent T-test showed a significant difference between the mean scores of emotional intelligence in terms of the field of study (P=0.003). Also, the independent t-test showed that there was a significant difference between the mean scores of social awareness (P=0.003) and relationship management (P=0.02) and the field of study (medicine and other related majors) (Table 2).

The independent T-test results showed that there was a significant difference between the mean score of emotional intelligence and marital status (P=0.02). The test also showed that there was a significant difference between the mean score of emotional intelligence and marital status of non-medical students (P=0.01). (Table 3)

Discussion

The present study was conducted to compare emotional intelligence among medical and non-medical students at Hormozgan University of Medical Sciences in 2018. The results of this study showed that the mean and standard deviation of emotional intelligence in medical and non-medical students were 81.79±8.45 and 84.03±7.71, respectively. Considering that the highest score of

Table 1: Demographic information of the study participants

Variable		Medical	Non-medical	P value
Gender	Female	156(54.7 %%)	113(57.9%)	*0.48
	Male	129(45.3%)	82(42.1%)	
Marital status	Married	21(7.4%)	30(15.4%)	*0.00
	Single	264(92.6%)	165(84.6%)	

* Chi-square test

Table 2: Results of emotional intelligence components in medical and non-medical groups

Emotional Intelligence Components	Minimum-maximum score	Field of study	Mean±SD	P value*
Self-awareness (3 questions)	3-15	Medical	12.09±1.49	0.17
		Non-medical	12.29±1.55	
Self-management (7 questions)	7-35	Medical	25.24±3.48	0.14
		Non-medical	25.68±2.87	
Social awareness / empathy and cognition (7 questions)	7-35	Medical	25.42±3.52	0.003
		Non-medical	26.38±3.18	
Relationship Management / Social Skills (5 questions)	5-25	Medical	19.02±2.92	0.02
		Non-medical	19.67±3.10	
Emotional Intelligence (Total)	22-110	Medical	81.79±8.45	0.003
		Non-medical	84.0±7.71	

*Independent T-test

Table 3: Comparison of emotional intelligence mean scores in terms of demographic variables in medical and non-medical students

Variable		Emotional intelligence					
		Medical		Non-medical		Total	
		Mean±SD	P value	Mean±SD	P value	Mean±SD	P value
Gender	Female	81.35±8.44	0.34	83.34±7.78	0.14	82.19±8.21	0.12
	Male	82.31±8.46		84.98±7.55		83.35±8.20	
Marital status	Married	79.28±9.52	0.15	80.39±7.47	0.01	80.25±8.33	0.02
	Single	81.99±8.34		84.60±7.64		82.99±8.17	

emotional intelligence in this questionnaire was 110, the results indicated that the medical students' emotional intelligence scores were higher than average. This finding is consistent with the results of the studies by Haghani et al.[18] in Isfahan University of Medical Sciences and Namdar et al.[19] in Tabriz University of Medical Sciences. However, it was not consistent with the results of the studies by Keshavarz et al.[20] Adib et al.[21] Beauvais et al.[22] Tehrani et al.[23] and Miri et al.[24] In all the above-mentioned studies, the authors stated that emotional intelligence of the students at medical schools was at the average level or lower. To justify this statement, it can be said that, as emotional intelligence is somewhat acquired and influenced by education, it might be attributed to such factors as the ways of admission to universities, the types of tests and evaluations in universities, teaching methods and fields of study in universities. Thus, different educational systems and evaluation methods in universities seem to be effective in making a difference in emotional intelligence in various studies.

The results of this study showed that non-medical students had higher emotional intelligence than medical students. This was inconsistent with the results of the studies by Yavarian et al.[25] and Tamadon et al.[26] and consistent with those of Abdollahpour et al.[27] As stated, due to their difficult major, medical students experience a lot of psychological stress during their education, especially during clinical courses and internship. Being usually busy, they are less likely to seek social skills; therefore, development and promotion of emotional intelligence, which includes all the previously-mentioned components, can lead to better adaptation and better performance of medical students in their education, optimum learning, increased educational outcomes, and proper professional performance in future.

According to the results of this study, of all the components of emotional intelligence, social awareness and relationship management scores of non-medical students were higher than those of medical students. This was consistent with the results of the study by Abdollahpour et al.[27] Given that emotional intelligence has a direct relationship with individual skills, self-awareness, and social skills, medical students are less likely to seek social skills because they are so busy and have no free time, and this can justify the obtained result.

In the present study, there was no significant difference between male and female students' emotional intelligence. This was consistent with the results of the studies by Austin et al.[28] Doherty et al.[29] and Palmer et al.[30] and inconsistent with those of Wang et al. in China,[31] Gujjara et al.[32] and Mehdizadeh et al.[33] The differences in the results might be due to different environmental, social and cultural conditions in the studied communities, as research suggests that

emotional intelligence-based behaviors vary in men and women, and the extent and nature of the differences are basically influenced by cultural factors.

The results of this study showed that there was a significant difference between married and single individuals in terms of emotional intelligence, with single ones having higher emotional intelligence. This was not consistent with the results of the studies by Moghadam et al.[34] and Zahir et al.[35] who found out in their studies that married people had higher emotional intelligence than single ones. To explain this finding, it can be said that emotional intelligence is a set of abilities that help a person make friendly and help-oriented relationships in his/her life (for example when communicating with his/her spouse), and is a capability that profoundly influences other abilities and facilitates them. On the other hand, the couples' relationships are formed based on four major elements: emotional relationships, cognitive (mental) relationships, economic relationships, and marital relationships. Hence, it is natural that married people have higher emotional intelligence than single ones.

Study Limitation

One limitation of the present study is that, considering the statistical population selected in Hormozgan province and taking the cultural and attitudinal differences into account, the results of this leading research cannot be generalized to other communities.

Conclusion

The results of this study showed that the mean emotional intelligence score of the studied students was higher than the average. However, the mean score of medical students' emotional intelligence was significantly lower than that of non-medical students. Thus, it is suggested that educational managers of universities have special financial investments in emotional self-awareness, while holding training courses and using specialized human resource educators for conducting emotional intelligence promotion workshops. It is also necessary that the educational system aims at developing and enhancing the students' emotional intelligence, so that in future academic years and during internship, apprenticeship and clinical periods when students have more responsibilities and their success in such environments may require special characteristics and skills, they will acquire necessary competencies and capabilities. In this way, appropriate and useful performance of medical specialists in their future career will be provided. The results of this study are also useful for medical students, medical universities in order to enhance the emotional intelligence in medical students.

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