

## Correlation between Spiritual Intelligence and Clinical Competency in Students Who Are Children of War Victims

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### Abstract

**Objective:** Providing effective and correct care to patients requires clinical competence. One of the important components in clinical competence is spiritual intelligence the purpose of the study was to consider the correlation between clinical competence and spiritual intelligence in students who are children of victims of war of Hamadan University of Medical Sciences in 2019.

**Method:** The cross-sectional study was carried out on 145 Martyrs' and War Veterans' Students of medical, nursing, midwifery, and paramedical schools. Sampling was done through census of students of operating room, anesthesia, medicine, nursing, midwifery, laboratory science, and radiology. The data collection tools were Kazdin et al's (1986) Spiritual Intelligence questionnaire and Liu et al's (2009) Clinical Competency Assessment questionnaire. Data were analyzed by SPSS 23 software.

**Results:** The results of data analysis showed a direct, positive, and significant linear relationship between spiritual intelligence and clinical competence of all students ( $P < 0.05$ ). According to the students' self-report, the highest mean score of clinical competency of the students was related to medical students with a mean score of 37 and the lowest to the laboratory students with a mean score of 30 ( $P = 0.012$ ). In addition, the results showed that the highest mean score of spiritual intelligence belonged to nursing students with a score of 48 (good spiritual intelligence) and the lowest to radiology students with a score of 39 (moderate spiritual intelligence) ( $P = 0.019$ ).

**Conclusion:** We found that there is a direct and positive correlation between spiritual intelligence and clinical competence, so it seems that promoting spiritual intelligence may be associated with an increase in clinical competence.

**Key words:** *Clinical Competence; Disaster Victims; Intelligence; Student; Veteran*

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### Article Information:

Received Date: 2020/05/14, Revised Date: 2020/12/21, Accepted Date: 2021/02/05



**Q**ualification refers to the set of integrated capabilities in the domain of knowledge, attitude, and skill that is a prerequisite for effective performance and problem-solving in some specialties, organizations, jobs, roles, and professional positions. Clinical performance is defined by the assessment of competence and is defined by the student's ability to demonstrate behavioral performance or specialized skills (1). Clinical competence is a syntax of ethics and values and its reflection on knowledge and skill and honesty, caring, communication skills, and consistency have been identified as signs of individual competence (2). Maintaining and enhancing the level of clinical competence of nurses and paramedics, especially in the workforce, has always been one of the major challenges in nursing management (3, 4). All medical practitioners must possess technical, communication, and creative thinking skills (5). Effective factors in clinical competence include experience, environment, opportunities, motivation, theoretical knowledge, and personal characteristics (6).

Clinical competence is influenced by spiritual intelligence. Clinical competence is a continuous active process that has elements such as awareness of human values, empathy, and the ability to perform appropriate interventions for each client (7). Factors affecting clinical competence include experience, environment, opportunities, motivation, theoretical knowledge, and personal characteristics (6). Clinical competence has been introduced as a powerful force for better adaptation in the face of difficulties (7). Spirituality is recognized as a powerful factor in improving the performance of individuals and organizations. In other words, spiritual intelligence improves clinical competence. (7-11). Spiritual intelligence refers to a set of abilities to utilize religious and spiritual resources to solve problems of meaning and value (12, 13) and also enables them to lead their activities and lives in a profound and meaningful way. Applying spiritual and religious patterns in human daily life can increase human well-being and adaptation (14).

King considers spiritual intelligence as a set of psychic adaptations based on the immaterial aspects of reality that can be developed through effort, search, and practice (15). Noble sees spiritual intelligence as a reflection of a set of human experiences that all people have to varying degrees (16). Spiritual intelligence gives purpose to life and solves problems and has a significant impact on successful and efficient career management (17-19). Spiritual intelligence is also effective in enhancing mental health and reducing job stress (20, 21). Spiritual intelligence encompasses the highest levels of growth in various emotional, ethical, cognitive, interpersonal domains, and helps the individual to adapt to the phenomena around him or her and to achieve an inner and outer complexity (22). Numerous studies have confirmed the relationship between success and

spirituality and the results of the research indicate that spiritual values not only improve the quality of working life but also have the ability to promote the whole organization so that spirituality can be promoted (18, 22, 23). Various researchers, including Dennis, Walt, McEwan, Wang and Young, have shown that people with spiritual tendencies respond to problems when answering questions. They are better at managing the stressful situation and their health (23). Considering the above, clinical competency is one of the important necessities of different medical profession. The lack of this qualification is the basis of social criticism. Therefore, finding effective components of clinical competence and promoting it has always been the focus of the health care system and medical education. War-affected students must not only endure the physical and psychological problems caused by the war in the family, but also meet the expectations of the society (24).

On the other hand, given the allocation of part of the capacity of universities to those who have participated in war or their children, the question may arise whether those who enter the university using the quota are spiritually equal to other students and whether, in terms of clinical competence, they are ready to enter medical centers and provide services (24). Therefore, the study was directed to determine the correlation between clinical competence and spiritual intelligence in students who are children of war victims in Hamadan University of Medical Sciences.

## Materials and Methods

The research was a cross-sectional study that was carried out on 145 students who were children of martyrs or war veterans at Hamadan University of Medical Sciences; they included medical, nursing, radiology, laboratory science, midwifery, and operating room, and anesthesia students.

Samples were selected by stratified random sampling from Martyrs' and War Veterans' Students who had been in hospital for at least 1 year. From 233 total eligible students, 145 were selected through stratified-random-sampling methods, which included medical (n = 62), operating room (n = 11), anesthesia (n = 10), radiology (n = 10), laboratory science (n = 7), nursing (n = 35), and midwifery (n = 10) students. All selected students completed the questionnaires and therefore response rate in this study was 100%. The sample size was calculated as 145 according to the below formula (significance level: 0.05, power: 80%):

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

$$C = 0.5 * \ln \left( \frac{[1 + r]}{[1 - r]} \right)$$

Therefore, the sampling fraction was 62% for each faculty.

### **Data Collection Tools:**

The data gathering tool in this study consisted of 2 standard questionnaires:

1. Spiritual intelligence questionnaire developed by Kazdin et al (1986), consisting of 42 items and four factors (general thinking and critical dimension, ability to cope and interact with problems, addressing moral and self-awareness, and love and interest). The 42 items for each of the five "strongly agree", "agree", "somewhat agree", "disagree", "strongly disagree" options are scored as zero, one, two, three, four, respectively. Cronbach's alpha was used for the reliability of the spiritual intelligence questionnaire. The total reliability of the questionnaire was 0.85 at the national study, indicating acceptable reliability of the questionnaire (25). In this study, we reached 0.79 reliability by Cronbach's alpha.

2. Clinical competency assessment questionnaire developed by Liu et al (2009) was used with 55 items, including seven dimensions (care, interpersonal relationships, law and professional ethics, professional development, education, critical thinking and management) with Likert scale. They were scored as follows: not qualified =one, low qualification =two, somewhat qualified =three, enough qualification =four, and high qualification =five, with a minimum score of 55 and a maximum of 275. The reliability of this questionnaire with Cronbach's alpha coefficient at the national study was 0.97, indicating acceptable reliability of the questionnaire (26). In this study, we reached 0.845 reliability by Cronbach's alpha.

### **Statistical Analysis**

Qualitative data were summarized with frequency and percentage and quantitative variables with mean (SD). The normality distribution of variables was assessed by Kolmogorov-Smirnov test. And both clinical competency and spiritual intelligence had skewed distribution and therefore we used nonparametric methods. Statistical analysis was performed using the Kruskal-Wallis test for comparison of the scores of clinical competency and spiritual intelligence according to students' course and their demographic characteristics. The correlation between clinical competency and spiritual intelligence was assessed by Spearman correlation test. Data were analyzed using SPSS vol 23. Significance level was considered less than 0.05.

### **ETHICAL CONSIDERATION**

The researchers emphasized the anonymity of the questionnaires and the confidentiality of the information and the ineffectiveness of their assessment of competence and provided the necessary explanations and were asked to answer all the information accurately and honestly. Informed consent was obtained from all the participants and they were informed that all data and information were confidential and could be excluded at any time. This study was approved by the ethics committee in research with the number of

### **Results**

Analysis of demographic data showed that 41.1% of the participants were 22-24 years old. Also, 63% of the study population was female and 37% were male. According to the results, 83.4% of the participants were single and 16.6% were married. The results also showed that 63.4% of the students were living in dormitories. There was not found a meaningful difference between the grades of clinical competency and spiritual intelligence according to demographic characteristics of the students ( $P > 0.05$ ) (Table 1).

The results demonstrated that the highest mean grade of clinical competency belonged to medical students (mean score: 37) and the lowest to laboratory students (mean score: 30). The results of Kruskal-Wallis test showed a significant difference between the mean score of clinical competence of the students according to their department group ( $P = 0.012$ ). In addition, the results showed that the highest mean score of spiritual intelligence was in nursing students with a score of 48 (good spiritual intelligence) and the lowest in radiology students with a score of 39 (moderate spiritual intelligence). Kruskal-Wallis test showed that there was a significant difference between the spiritual intelligence of the students according to their department group ( $P = 0.019$ ) (Table 2).

The results also demonstrated a direct, positive, and significant linear relationship between spiritual intelligence and clinical competency in all departments groups ( $P < 0.05$ ). Moreover, in general there was a direct, positive and significant linear relationship between spiritual intelligence and clinical competence of all the students under study ( $P = 0.001$ ) (Table 3).

**Table 1. Frequency Distribution and Percentage of Demographic Information of the Students**

Demographic Information		Frequency	Percentage	Clinical competency Mean(SD)	P.value	Spiritual intelligence Mean(SD)	P.value
Age	Less than 20	33	22.8%	33± 4.7	0.24	42± 3.9	0.33
	22-24	60	41.1%	32± 3.2		43± 3.8	
	Over 24	52	36.1%	33±4.5		42±4.2	
Gender	Female	91	63%	32±2.7	0.09	42± 2.9	0.14
	Male	54	37%	33± 4.3		41±5.3	
Marital status	Married	24	61.6%	32±4.9	0.16	42± 6.1	0.21
	Single	121	83.4%	33± 2.8		41±2.7	
Address	Dormitory	92	63.4%	33± 1.7	0.26	41± 1.9	0.31
	Father's house	41	28.3%	32±3.7		43± 4.1	
	Rental house	12	8.3%	33± 5.1		42±3.8	

**Table 2. Comparison of Mean Clinical Competency and Spiritual Intelligence of the Students**

Students	Clinical competency		Spiritual intelligence	
	Mean ±SD	Kruskal Wallis test	Mean ±SD	Kruskal Wallis test
Medical	37 ± 2.1	Chi-square=26.127 p=0.012	45 ± 1.4	Chi-square=16.138 p=0.019
Nursing	35 ± 7.2		48 ± 2.6	
Midwifery	34 ± 1.4		41 ± 3.3	
Operating room	36 ± 6.1		43 ± 1.7	
Anesthesia	31 ± 4.2		42 ± 2.4	
Laboratory sciences	30 ± 1.2		40 ± 4.1	
Radiology	31 ± 2.1		39 ± 2.5	

**Table 3. Correlation between Spiritual Intelligence and Clinical Competence of the Students**

Variables	Spiritual Intelligence		
	r	p. value	
Clinical Competence	Medical	0.91	0.005
	Nursing	0.83	0.046
	Midwifery	0.87	0.003
	Operating room	0.92	0.001
	Anesthesia	0.85	0.034
	Laboratory sciences	0.90	0.002
	Radiology	0.87	0.024
	Total	0.896	0.001

**Discussion**

According to the study objectives, data analysis results showed that according to students' self-reports, the highest mean grade of clinical competence was dependent to medical students (score=37) (good clinical competence) and the lowest score to laboratory students (score=30) (moderate clinical competence) (P=0.001).

Results also showed that the highest mean score of spiritual intelligence was in nursing students with a score of 48 (good spiritual intelligence) and the lowest in radiology students with score of 39 (moderate spiritual intelligence) (P=0.001).

Few studies have been conducted on the correlation between spiritual intelligence and clinical competence. Like this study, Karimi-Moonaghi et al (2011) conducted a study to determine the correlation between spiritual intelligence and clinical competence of the nurses. In this study, 212 nurses of teaching hospitals in Mashhad were selected through multistage sampling. The results demonstrated a significant positive relationship between nurses' spiritual intelligence and their clinical competence. Also, there was not found a meaningful relationship between job and personal variables with total spiritual intelligence, but there was a significant relationship with the dimensions of spiritual intelligence, such as inner peace, marriage, and patience (27).

Shami et al (2017) conducted a study to determine the correlation between spiritual intelligence and communication skills among nursing students. In this study, 282 nursing students were selected by stratified sampling method. Data were collected using the King Spiritual Intelligence and Barton Communication Skills Questionnaire. The results showed that the degree of correlation between communication skills and spiritual intelligence and its domains were positive (0.149) and significant ( $P < 0.05$ ) (23). The study is in line with our study.

Like our study, Ghaleei et al (2015) conducted a study to determine the relationship of spiritual intelligence with mental health and job stress among nurses. In that study, 160 nurses were selected by simple random sampling. Findings showed a significant direct relationship between spiritual intelligence with mental health, spiritual intelligence with job stress, and mental health with job stress. Overall, it seems that paying more attention to spiritual intelligence and promoting it in nurses is necessary and thus improves the quality of care for their patients (20). Rani et al (2013) also conducted a descriptive study to determine the effect of spiritual intelligence on nurses' job performance and skills. The data collected of 506 female nurses aged 20 to 45 years among nurses from 3 Malaysian provinces. Findings showed that spiritual intelligence has a direct positive effect on nurses' performance. Nurses who have a higher level of spiritual intelligence are healthier and happier and are more successful in communicating and performing activities (25).

Kaur et al (2013) in their study showed that spiritual intelligence, emotional intelligence, psychological ownership, and burnout of nurses play an important role in influencing nurse behavior in nurses. Health care providers should consider the relationships between these factors in curriculum development and nursing education (28). Miri et al (2015) concluded a study to determine the correlation between nurses' spiritual intelligence and quality of nursing care based on nurses' and patients' opinions. Sampling was performed by available method among 200 clinical nurses and hospitalized patients. The results showed a significant

linear positive correlation between spiritual intelligence and the quality of nursing care. The results of the study are the same as the present study (17). Above studies show that spiritual intelligence can be considered as one of the effective factors in promoting clinical competence. The results of the study showed a direct, positive, and considerable linear correlation between spiritual intelligence and clinical competence of all students ( $P = 0.001$ ). Like our study, Bahreini et al (2007) found that the level of clinical competence of nurses in different wards and hospitals varied, although, overall, the level of competency of "good" nurses was reported (29). The results showed that the level of clinical competence and the level of utilization of nurses' skills by the nurses and their supervisors were high. There was a positive correlation between the clinical competency of nurses and the extent of their use (30). Yazdan Parast et al (2014) in a study entitled, "Analysis of Spiritual Care Competence in Students of Ferdows Health and Paramedical School" found a significant difference between the mean scores of spiritual care competency and different academic semesters ( $P = 0.03$ ) (31). Ahmadi et al (1986) concluded that there was found a considerable positive relationship between spiritual intelligence and professional competence of nursing students in the field of spiritual care. Spiritual intelligence can affect nursing students' competence in the field of spiritual care. Therefore, it is appropriate to enhance the students' spiritual intelligence and consequently clinical competence in the field of spiritual care (32). All studies indicate a correlation between spiritual intelligence and clinical competence.

### Limitation

One of the limitations of this study is that Martyr and Veteran students do not want to reveal their identities. These students are ashamed to be known as Martyr and Veteran students.

### Conclusion

The findings of present study showed a considerable positive relationship between clinical competence and spiritual intelligence of all students, as most students with higher spiritual intelligence had higher clinical competence. According to the findings of this study, it is suggested that managers and faculty members of different faculties of medical sciences promote students' clinical competence to educate and enhance their students' spiritual intelligence so that students have higher professional competence and spiritual intelligence in patients' bedside.

### Acknowledgment

We are grateful to the vice-chancellor for Research and Technology of Hamadan University of Medical Sciences, which sponsored the present study's research project (IR.UMSHA.REC.1398.196).

## Conflict of Interest

None.

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