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Assessing the Relationship between the Role of Professional Identity and Spiritual Intelligence in the Level of Drug Addiction in Students of Birjand University of Medical Sciences

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Abstract

The growing prevalence of drug use among university students presents a significant public health challenge, adversely affecting their academic performance, mental well-being, and professional roles. Professional identity and spiritual intelligence are key factors that may influence susceptibility to substance use. Investigating these constructs can provide valuable insights into the mechanisms behind drug addiction. Such insights are crucial for developing effective prevention strategies in academic environments.

The purpose of this study was to investigate the correlation between professional identity,spiritual intelligence and the prevalence of drug addiction among students of Birjand University of Medical Sciences.

The present study is a descriptive, analytical, correlational investigation. The statistical population included undergraduate medical students at Birjand University of Medical Sciences during the 2021-2022 academic year, with a sample size of 170 participants. After obtaining informed consent, participants completed the following measures: the King's Spiritual Intelligence Scale, the Jim Crossley Doctors' Professional Identity Questionnaire, and the Drug Orientation Questionnaire, along with a demographic information form. Data analysis was performed using SPSS software version 22, applying descriptive statistics (measure of central tendency and dispersion) as well as inferential statistical tests, including Spearman's correlation, the Mann-Whitney U test, and Kruskal-Wallis test.

The study revealed mean scores of 25.71±1.46 for professional identity, 36.09±6.62 for spiritual intelligence, and 39.71±3.66 for drug addiction. The results demonstrated no statistically significant correlation between spiritual intelligence and drug addiction ($P<0.05$). However, professional identity showed a significant negative correlation with drug addiction severity ($P=0.02$) with a correlation coefficient of -0.6. This inverse relationship indicates that higher level of professional identity are associated with lower degrees of drug addiction.

These findings suggest that a strong professional identity among medical students reduce their susceptibility to drug use. Consequently, medical education curricula should prioritize on the development of professional identity. Although the study did not find a significant association between spiritual intelligence and drug addiction, the observed negative correlation highlights the potential value of incorporating spiritual intelligence development, particularly within medical ethics education, as a preventive strategy.

Keywords: Professional identity, Spiritual Intelligence, Drug Addiction, Medical Student

Introduction

Drug addiction is a chronic condition that leads to deterioration in an individual's physiological, social, and personal functioning. As a significant global issue, drug abuse continues to rise serious concerns (1). Substance abuse affects every country without exception, making it a worldwide challenge. . According to United Nations research, approximately 246 million peoples (5.2% of the global population aged 15-64) used drugs in 2013 (2). Opioid addiction, in particular, poses a major public health concern causing severe social and physical damage (3). Iran has a long standing history of drug misuse, which approximately 5% of its population currently using drugs. Other estimates suggest that by the year 1400, Iran's number of drug addicts will exceed 12 million, including 5 million long-term users (4). Notably, Iran has the highest consumption rates of two classical narcotics: heroin and opium (5).

In recent years, drug consumption among college students has risen significantly, leading to concerns among specialists on public health. Our country has one of the world's youngest populations, with around 50% of its inhabitants being young individuals. The increase in students' inclination towards drug use can be attributed to several factors, including frequent social interactions and separations, inadequate parental s, insufficient oversight in educational institutions such as universities, schools, and dormitories, and the absence of cultural activities that serve as deterrents against drug use (6). Meanwhile, students living in dormitories perceive drug use as a way to cope with the challenges of being away from their families and feeling homesick. As a result, they are more likely to use drugs compared to their peers. On the other hand, Iran's location along the drug transit route is a factor that may encourage people to use drugs (7).

Recently, various factors have been suggested as predictors and protectors against substance abuse. These include the acquisition of life skills, strong bonds and positive communication between students and families, parental monitoring of children's travel and socializing, limited access to substances, strong religious and spiritual beliefs, academic, occupational, and social achievements, and the availability of services, support, counseling, and treatment systems (8). Meanwhile, spiritual intelligence and professional identity have gained significant recognition in the realm of mental health due to their roles as valuable assets in both individual and societal aspects of life (9). Moreover, they gradually evolve into the foundation of overall well-being. Over the past decade, researchers have determined that, in addition to general intelligence (IQ) and emotional intelligence (EQ), there exists another distinct and exclusive facet of human intelligence. Currently, it is widely acknowledged that IQ and EQ alone do not provide comprehensive solutions and are not very effective. There is a growing recognition of the importance of a third dimension known as spiritual intelligence or SQ. Spiritual intelligence encompasses certain qualities and attributes. The fundamental attributes, include the capacity to achieve elevated mental states, employ metaphorical thinking, and develop a comprehensive understanding of life experiences. These qualities can be easily distinguished from other forms of intelligence (10). Individuals with high levels of spiritual intelligence have the ability to recognize a meaningful purpose in their daily experiences. Individuals have the capacity to establish a purpose for their existence, generate significance, assist others in confronting difficult situations, and can be successful in reducing their dependence on narcotics (8).

Research indicates that individuals who possess normative and informational processing styles tend to have a more robust and well-defined sense of self-identity compared to those with a confused style. Lower levels of personal courage and responsibility, along with higher

levels of despair, are associated with weaker commitments. Individuals with a confused-avoidant style are more likely to find themselves in a vulnerable position because they lack a strong and definite commitment (11). Furthermore, numerous studies indicate that individuals with a confused communication style exhibit problematic behaviors and encounter issues in various areas, such as education, psychological well-being, depression, and drug abuse, in comparison to those with normative and informative styles. In medical students, the experience of developing an identity leads to increased self-confidence, a sense of belonging to the profession, and improved interpersonal communication (12). Professional identity refers to a specific social identity that is formed through one's professional role. It involves a combination of professional, educational, and social skills, along with attitudes, values, and beliefs. These elements enable individuals to interact with others who belong to the same professional group, distinguishing them from other professional groups (13). Professional identity encompasses the core principles and convictions held by a physician, which shape their cognition, behavior, and engagement with patients. Currently, increased public awareness and technological advancement have resulted in a greater demand for high-quality healthcare. As a result, there is a significant need for dedicated and skilled doctors who are committed to their professional responsibilities (14). Research findings indicate a strong and favorable correlation between experiencing an identity crisis and the inclination to engage in drug usage (15). Professional identity influences the selection of substances, the frequency and manner of their use, and the perception of what is considered normal.

Objectives

Given the limited number of studies and conflicting results in this field, the aim of this study was to investigate the population of medical students at Birjand University of Medical Sciences in 1400-1401.

Methods

The current study is a descriptive, analytical, and correlational research study. The statistical population the study included students enrolled in the general medical program at Birjand University of Medical Sciences during the academic year 2022-2023. A total of 175 intern students were included in the research, representing a census. Excluding ten individuals who declined to participate, the final sample for the study consisted of 170 participants. The eligibility criteria for this study included general medical students in their 8th semester or higher, as well as students who agreed to participate. The conditions for study withdrawal included discontinuation of participation for any reason and cessation of the student's educational pursuits.

King's Spiritual Intelligence Questionnaire: This questionnaire consists of 24 statements and evaluates abilities related to spiritual intelligence across four primary dimensions: existential critical thinking capacity, personal meaning generation, transcendental awareness, and expansion of the state of consciousness. The answer scale consists of five Likert alternatives, ranging from 0 (absolutely false) to 4 (absolutely true). This questionnaire demonstrates favorable characteristics in terms of both reliability and validity. The overall reliability of the questionnaire was assessed using Cronbach's alpha, which yielded a value of 0.92. Furthermore, the internal consistency of its subscales has been reported as follows: existential critical thinking ($\alpha = 0.88$), personal meaning production ($\alpha = 0.87$), transcendental awareness ($\alpha = 0.89$), and expansion of consciousness ($\alpha = 0.94$).

Jim Crosley's Professional Identity Questionnaire for doctors: The Professional Identity Questionnaire by Jim Crossley includes nine items divided into three subscales: profession-specific tasks, generic attributes, and

interpersonal tasks. A Persian validation study was conducted among 175 Iranian medical students to confirm its psychometric properties. Content validity was established with CVI values above 0.79 and CVR above 0.75. Categorical Confirmatory Factor Analysis indicated a good model fit (RMSEA = 0.055, CFI = 0.996, TLI = 0.994). The Cronbach's alpha for the total scale was 0.873, and for the subscales, it was 0.762, 0.622, and 0.747 respectively, demonstrating acceptable internal consistency (16-18).

Drug Orientation Questionnaire: This 16-item instrument assesses the tendency towards substance use across three domains: individual, social, and environmental. Each item is rated on a five-point Likert scale ranging from 1 (very little) to 5 (very much), with total scores ranging from 16 to 80. Higher scores indicate a greater tendency towards addiction. The questionnaire's internal consistency has been reported with varying Cronbach's alpha coefficients in different studies: 0.60 by Mousavi, Doostgharin, and Roshanfekr Dezfuli (1999; as cited in Abdolmaleki et al., 2015), 0.87 by Fathi et al. (2015), and 0.638 by Abdolmaleki, Farid, Habibi Kalibar, Hashemi, and Ghadousi-Nejad (2015). Subscale-level alpha coefficients have not been reported separately. In terms of validity, Mousavi et al. reported a coefficient of 0.65, while Abdolmaleki et al. later reported a validity of 0.792. These findings confirm acceptable psychometric properties for the tool in Iranian samples (19-22).

The code of ethics for this study was obtained from the ethics committee of Birjand University of Medical Sciences (IR.BUMS.REC.1402.088). Upon entering the research environment and obtaining informed consent from the participants, the students completed the King's Spiritual Intelligence Scale, as well as a demographic information questionnaire. Additionally, the students completed Jim Crossley's Physician Professional Identity Questionnaire. They also filled out the drug orientation questionnaire. The data was analyzed using SPSS software version 22 and descriptive statistical methods. This included central and dispersion indicators such as mean, standard deviation, and frequency distribution. Furthermore, when conducting the Kolmogorov-Smirnov test to assess the normality of the data, it was determined that none of the variables had a normal distribution. Consequently, Spearman's test was used to examine the correlation between intelligence, meaning, professional identity, and drug addiction. The Mann-Whitney and Kruskal-Wallis tests were used to assess the mean score of drug addiction based on demographic data. A significance level of $p < 0.05$ was considered for all statistical analyses.

Results

A total of 170 medical students, with an average age of 26.02 years and a standard deviation of 1.46, participated in this study. Among these participants, 52.4% (89 individuals) were male and 47.6% (81 individuals) were female. The largest proportion of participants (61.8%) were single. In terms of their academic progress, 58 individuals (34.1%) were in their 12th semester, 73 individuals (42.9%) were in their 13th semester, and the rest of the participants were in their 14th semester. Regarding income, 39 individuals (22.9%) reported their income as high, 74 individuals (52.4%) reported their income as average, and 34 individuals (20.0%) reported their income as low according to Table 1.

A significant proportion of both female and male respondents indicated that their income was at an average level. Specifically, 67.1% of respondents were in their 13th semester, while 46.2% were in their 14th semester. Among men, 24.7% indicated that their income was poor, whereas only 14.8% of women reported the same.

Table 1. Descriptive characteristics of the participants in the study

Variable Name	Category	Count	Percentage (%)
Gender	Male	89	52.4
	Female	81	47.6
Marital Status	Single	105	61.8
	Married	65	38.2
Academic Term	12^{th}	58	34.1
	13^{th}	73	42.9
	14^{th}	39	22.9
Age	Mean ± SD	26.02 ± 1.46	

The study found that the mean score for professional identity was 25.71±1.46, spiritual intelligence was 36.09±6.62, and drug addiction was 39.71±3.66. Table 2 shows that the critical existential thinking component had the greatest average of 10.25 ± 2.89, while the ability to generate personal meaning component had the lowest average of 7.75 ± 2.70 among the subscales of spiritual intelligence. Furthermore, while considering the various aspects of drug addiction, it was discovered that the societal component had the highest average score of 17.91 ± 2.47, while the individual component had the lowest average score of 2.10 ± 9.89.

Table 3 presents the results of the Kolmogorov-Smirnov test, indicating that none of the variables -professional identity, spiritual intelligence, and drug addiction- exhibit a normal distribution. This deviation from normality may be attributed to the ordinal nature of the variables, which arises from the use of a Likert scale. Therefore, Spearman's test was utilized to investigate the correlation between intelligence, sense of purpose, and professional identity in relation to drug addiction. The data in Table 4 indicate that the correlation between the spiritual intelligence variable and drug addiction is relatively small. Specifically, the total spiritual intelligence score had a Spearman correlation coefficient of r = -0.09, with a p-value = 0.198 and a 95% confidence interval of (-0.250, 0.057). These results indicate that the impact of spiritual intelligence on drug addiction is not statistically significant. This weak and nonsignificant correlation may be influenced by specific situational conditions or other uncontrolled variables. The variable of professional identity exhibits a strong inverse correlation with the level of drug addiction, as indicated by a Spearman correlation coefficient of -0.6 and p=0.02. This suggests that as professional identity increases, the level of drug addiction tends to decrease. The variable of professional identity exhibits a strong inverse correlation with the level of drug addiction. According to Table 4, this relationship is represented by a Spearman correlation coefficient of r = -0.60, a p-value = 0.02, and a 95% confidence interval of (-0.961, -0.149). This suggests that as professional identity increases, the level of drug addiction tends to decrease significantly.

Based on the findings presented in Table 5, and according to the results of the Mann-Whitney U and Kruskal-Wallis tests, it is evident that there is no statistically significant difference in the mean score of drug addiction across all demographic variables (p > 0.05). Additionally, the effect sizes were calculated using Cohen's d to provide a standardized interpretation of group

differences, despite the non-normal distribution. All values were ≤ 0.1, which, according to Cohen's criteria, indicates a small effect (d < 0.2: small; 0.2–0.5: medium; > 0.5: large).

Table 2. Descriptive indices of research variables

Variable	Minimum	Maximum	Mean± SD
Professional Identity	15	34	25.71± 1.46
Spiritual Intelligence			
Critical Existential Thinking	4	19	10.25± 2.89
Personal Meaning Production	0	15	7.75± 2.70
Transcendental Awareness	3	20	10.09± 3.58
Expansion of Consciousness	2	14	8.01± 2.48
Total	20	55	36.09± 6.62
Tendency to Substance Abuse			
Environmental	7	18	11.91± 2.15
Personal	5	16	9.89± 2.10
Social	12	25	17.91± 2.47
Total	28	50	39.71± 3.66

Table 3. Normality Assessment of Research Variables

Variable	Statistic Value	p-value
Spiritual Intelligence	0.077	0.015
Professional Identity	0.074	0.024
Tendency to Substance Abuse	0.078	0.013

Table 4. Correlation Between Spiritual Intelligence and Professional Identity with Tendency to Substance Abuse Among Medical Students

Variable		Tendency to Substance Abuse		
		Correlation Coefficient	p-value	Confidence interval
Spiritual Intelligence	Critical Existential Thinking	-0.06	0.419	(-0.215,0.093)
	Personal Meaning Production	-0.00	0.958	(-0.159,0.151)
	Transcendental Awareness	-0.13	0.090	(-0.280,0.025)
	Expansion of Consciousness	-0.04	0.566	(-0.198,0.111)
	Total	-0.09	0.198	(-.250,0.057)
Professional Identity		-0.60	0.020	(-0961, -0.149)

Table 5. Mean Score of Tendency to Substance Abuse Based on Demographic Characteristics

Variable	Mean± SD	Test statistic	Effect size	p-value
Gender				
Male	40.07± 3.81	3145.00	0.110	*0.157
Female	39.31±3.47			
Marital Status				
Single	39.89±3.65	3251.00	0.039	*0.603
Married	39.42± 3.67			
Academic Term				
12	39.21± 3.64	1.45	0.054	**0.484
13	40.02± 3.74			
14	39.87± 3.55			
Income				
Good	40.43± 3.01	2.89	0.070	**0.236

Average	39.66± 3.82			
Poor	38.85±3.94			

*Mann-Whitney U Test
**Kruskal-Wallis Test

Discussion and Conclusion

This chapter presents the results of the research. The first chapter of the study discusses the investigation of the correlation between professional identity and spiritual intelligence with the prevalence of drug addiction among medical students. This section aims to evaluate the research findings and compare them with other studies. The interpretation and discussion of the findings will be guided by the inferential goals outlined in this section.

An essential and pivotal aspect of the hidden curriculum for medical students is the cultivation of a professional identity within them (23). The present study found that the average professional identity score of medical students was 25.71 ± 1.46. Since the highest score on the questionnaire is 54, these students' professional identity score is considered typical based on our results from the study conducted by Pirzadeh et al. The professional identity of medical students has been found to range from moderate to high (24). This indicates that the development of professional identity is prioritized in the medical science education program due to the ethical concerns inherent in the field of medicine. Additionally, the training includes a hidden curriculum. Mohammadi's research in 1400 identified three main categories that contribute to the professional identity of medical students. These categories include identity related to professional processes (such as adherence to medical ethics, affiliation with the medical profession, and career motivation), identity related to professional outcomes (such as learning development, improvement, and resilience), and identity related to professional competences (such as professional and clinical competence). These categories serve as the framework for understanding the professional identity of medical students. They have the potential to either enhance or diminish the level of professional identity among these students (25). The findings of Nasiri et al.'s study indicate that the formation of professional identity during the fundamental sciences phase is influenced by various factors, such as educational, socio-economic, individual, and familial aspects. Furthermore, the personal component received the highest ranking, followed by socio-economic, educational, and family aspects (26).

Another factor examined was spiritual intelligence, with an average score of 36.09 ± 6.62. The maximum possible score on the questionnaire used was 96. In the study, it was found that the students had a low level of spiritual intelligence. Spiritual intelligence refers to a way of adapting and beavering that helps individuals achieve harmony with their surroundings, improve their well-being, enhance their performance, foster creativity, and so on (27). In contrast to our research findings, Dadres et al. conducted a study at Gonabad University of Medical Sciences using King's questionnaire. The study revealed that the spiritual intelligence level of the medical students examined was 73.97, indicating a high level of spiritual intelligence (28). The disparity may arise from individual traits, mental states and psychological situations, during the completion of the questionnaire. In a study conducted by Chenarani et al., it was shown that the majority of students had above-average levels of spiritual intelligence (29). Given that medical students will be dealing with health and sickness in the future, it is advisable to focus on strategies to enhance the spiritual intelligence of these students.

The study found that the average score for medical students' inclination towards drug use was 39.71 ± 3.66, indicating the typical level of this inclination. The prevalence of substance dependence has been increasing in society, affecting all segments including students. This trend has detrimental consequences for their

academic achievements, social engagements, and future professional prospects (18). A study in this sector found a significant inclination among medical professional students, with 33% of them showing a strong preference (30). The study suggests that universities, as educational hubs, should implement health education programs focused on drug prevention that begin in schools and extend into colleges. Based on our study, we have found a correlation between gender and the inclination towards drug use. Therefore, when designing health education programs for prevention, it is crucial to consider both the gender and the age at which individuals begin using drugs. These programs should ideally start during school years and continue throughout university (31).

The main goal of this research was to investigate the correlation between professional identity and spiritual intelligence in relation to the prevalence of drug addiction among general medical students. The findings of this study indicate a significant association between spiritual intelligence and drug addiction. In a separate study within this domain, greater attention has been given to emotional intelligence. It has been highlighted that emotional intelligence, rather than spiritual intelligence, is associated with the extent of drug addiction. The researchers have deemed the influence of spiritual intelligence to be limited, which somewhat aligns with the findings of our own study (32). Contrary to our research findings, Akbari et al.'s study reveals a significant correlation between drug addiction and spiritual intelligence (33). This discrepancy may be due to differences in sample size and the diverse areas of study among the students.

A strong and inverse relationship was observed between professional identity and drug addiction, indicating that as professional identity increased, drug addiction decreased. A study conducted by Niki Kiepek and colleagues demonstrates that social identity and professional identity significantly influence students' inclination towards drug use (34). In a separate study, clear evidence was presented indicating that a low level of professional identity among medical students can contribute to their vulnerability to addiction (35).

Based on the findings of this study, the development of a professional identity among medical students over time during their education leads to a reduction in their inclination towards to use drugs. Medical science education planners play a crucial role and are considered an integral part of medical education. Furthermore, although the research did not find a significant association between spiritual intelligence and drug addiction, the inverse correlation coefficient suggests that it is crucial to enhance this aspect of intelligence in medical students when discussing ethics in medicine. To enhance the professional identity and spiritual intelligence of medical students, it is recommended to conduct a study with a larger sample size and intervention.

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