

## Article

# The mediating role of spiritual intelligence in the relationship between media literacy and tendency to addiction in nursing students

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## Abstract

**Background:** Drug abuse among students is a widespread issue that can have negative consequences on their psychological well-being and academic performance.

**Objectives:** This study aims to investigate the mediating role of spiritual intelligence in the relationship between media literacy and tendency to addiction in nursing students in 2022.

**Methods:** The research involved 139 undergraduate nursing students from Zanjan and Abhar School of Nursing and employed non-random quota sampling. Data were collected using questionnaires assessing addiction tendency, media literacy, and spiritual intelligence. The analysis, conducted in SPSS 24, included Pearson's correlation coefficient and regression analysis following Baron and Kenny's mediation method.

**Results:** The results revealed significant negative correlations between addiction tendency and both media literacy ( $r=-0.33$ ) and spiritual intelligence ( $r=-0.36$ ). Mediation analysis demonstrated that spiritual intelligence played a significant mediating role in the relationship between media literacy and addiction tendency. The path from media literacy to spiritual intelligence was significant ( $\beta=0.28$ ), as was the path from spiritual intelligence to addiction ( $\beta=-0.36$ ). Furthermore, the total effect of media literacy on addiction ( $\beta=-0.16$ ) and the direct effect of media literacy on addiction with the inclusion of spiritual intelligence in the model ( $\beta=-0.21$ ) were both significant, confirming the mediating role of spiritual intelligence.

**Conclusion:** this study underscores the mediating role of spiritual intelligence in the relationship between media literacy and addiction among nursing students. These findings emphasize the importance of incorporating media literacy and spiritual intelligence into nursing education to potentially reduce the risk of addiction among students.



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### Application of Study Results in Preventive Care in Nursing and Midwifery:

1. Curriculum Enhancement: Nursing and midwifery education programs can integrate media literacy and spiritual intelligence training to empower students with tools for making informed and resilient decisions, reducing their susceptibility to addiction.
2. Holistic Patient Care: Nurses and midwives, equipped with an understanding of the mediating role of spiritual intelligence, can provide more comprehensive and empathetic care, addressing not only the physical but also the emotional and psychological aspects of addiction in their patients.
3. Health Promotion: Nurses and midwives can play a crucial role in health promotion and addiction prevention by leveraging their knowledge to educate patients and communities about the importance of media literacy and spiritual well-being in maintaining a healthy lifestyle and preventing addiction.

## Introduction

Nursing students are considered productive forces in society [1]. However, documents indicate that this influential segment of society is not immune to dangers and is threatened by high-risk factors such as a propensity for substance abuse [2]. Addiction tendency can have a significant impact on students, both personally and professionally. Nursing students who have a higher tendency towards addiction may be more likely to engage

in substance abuse, which can lead to a range of negative consequences [3].

In terms of personal impacts, addiction can result in physical and mental health problems, strained relationships with family and friends, financial difficulties, and legal issues. It can also impair academic performance, leading to lower grades and an increased likelihood of dropping out of nursing school [4].

Professionally, addiction can jeopardize a nursing student's ability to provide safe and effective care to patients. Substance abuse can impair judgment, motor skills, and cognitive function, which can increase the risk of medical errors and patient harm. It can also lead to disciplinary action by the nursing school or state licensing board, potentially limiting future job opportunities [5].

It is important for nursing schools to provide resources and support for students who may be struggling with addiction or substance abuse. This can include access to counseling services, addiction treatment programs, and education on the risks and consequences of substance abuse. Additionally, nursing schools may implement policies and procedures to identify and address substance abuse among students to ensure patient safety and promote overall well-being among students [6].

Research indicates that approximately 12 percent of medical university students experience academic failure and mental-psychological issues during their studies due to various factors, including a propensity toward addiction. According to a survey, the prevalence of drug abuse among Tehran University students is 37.5%, and among Tehran University of Medical Sciences students, it is 33%. At the same time the use of media and technology has become an integral part of our daily lives, affecting our behavior, attitudes, and beliefs. With the increasing availability of various media platforms, concerns have been raised regarding their impact on individuals' addictive behaviors, particularly among young adults. Nursing students, in particular, face high levels of stress and pressure, making them more vulnerable to addictive behaviors [7-9].

In recent years, media literacy has become an essential skill in navigating the modern world, especially in the era of digital media. However, with the increasing exposure to various media platforms, the risk of addiction has also increased. Furthermore, media literacy has recently attracted the attention of many researchers as a factor related to addiction among students [10, 11]. Media literacy is the capacity to access, analyze, evaluate, and transmit information and media messages that can be presented in both print and non-print formats. According to the studies, interaction and media literacy can

mitigate addiction. Based on this, a study found that students with a higher level of media literacy were less prone to addiction, which indicates that media literacy has a negative and significant relationship with the tendency to addiction and can predict student dependence. In addition, the results of a study revealed that the internet addiction score of students who were taught media literacy was more balanced than that of the control group, indicating that this variable was significantly affected [12,13].

In addition to media literacy, other psychological factors such as spirituality and religion have been found to play a crucial role in preventing drug abuse and addiction. The relationship between religion and addiction has been a subject of interest, and promising results have been obtained [14,15]. Spiritual intelligence, a cognitive-motivational factor, has been shown to facilitate goal attainment through its adaptive skills, self-control, and problem-solving resources. It goes beyond the student's physical and cognitive connections with their surroundings, entering the realm of their intuitive and transcendental worldview. This intelligence allows students to interpret and frame their experiences in a more meaningful and personal way, adding value to their data and experiences [16,17].

Based on existing research, the potential impact of media literacy on addiction propensity is noteworthy. Similarly, a negative correlation has been found between spiritual intelligence and addictive behavior. It is suggested that spiritual intelligence and media literacy are significant factors in mitigating addiction and academic challenges among students. Nonetheless, a research gap exists as there is a lack of investigation that encompasses all three variables and evaluates the mediating effect of spiritual intelligence on the relationship between media literacy and addictive tendencies. Therefore, this study aimed to examine the mediating effect of spiritual intelligence on the association between media literacy and addiction propensity among nursing students.

## Methods

This descriptive correlational study aimed to examine the relationship between the risk of addiction, health literacy and spiritual intelligence among nursing students of Zanjan University of

Medical Sciences. The statistical population for the study comprised 530 students from the Zanjan School of Nursing and Midwifery and Abhar School of Nursing. Using a non-random quota sampling method, 162 people were initially selected to ensure adequate representation of each stratum. The participants included nursing students aged 18-35 years enrolled in Zanjan University of Medical Sciences, who voluntarily agreed to participate and provided informed consent. Sampling was conducted during the second semester of the 2022 academic year.

However, individuals with a history of bipolar disorder, schizophrenia and schizoaffective disorder, addiction, as well as those who had undergone prior psychological interventions or psychotherapy were not included in the study. Incomplete questionnaires were also excluded from the analysis. After applying the exclusion criteria and eliminating 23 incomplete or ineligible questionnaires, a total of 139 complete and eligible questionnaires were taken into account for the final analysis (Table 1).

**Table 1: Quota sampling summary table of university entrance year and size**

Year of University Entrance	Population Size	Proportion	Desired Margin of Error	Sample Size
1398	143	0.27	0.05	37
1399	132	0.25	0.05	35
1400	123	0.23	0.05	32
1401	132	0.25	0.05	35
Total	530	-	-	139

Data collection tools included standard questionnaires for identifying students at risk of addiction, media literacy, and spiritual intelligence.

Questionnaire for identifying people at risk of addiction was developed by Anisi & et.al in 2013 at the Behavioral Sciences Research Center of Baqiyatullah Medical University. There are 75 questions and four factors. The range of possible survey scores is between 0 and 225. Anisi used Cronbach's alpha coefficient of 0.97 to determine the test's validity, and the correlation between the test and Zuckerman's scale of depression, anxiety, stress, and excitement was found to be 0.78. To interpret the scores of the Anisi questionnaire, a higher total score indicates a higher risk of addiction. However, it is essential to note that the Anisi questionnaire is a screening tool and not a diagnostic tool for addiction. Therefore, the scores should be interpreted cautiously and in conjunction with other clinical evaluations. In terms of the cutoff point of the questionnaire, it was not specified in this study. However, previous research has suggested that a total score of 80 or higher on the Anisi questionnaire indicates a high risk of addiction [18]. The reliability of the Anisi questionnaire in this study was assessed using Cronbach's alpha, which measures internal consistency. The results showed that the Anisi

questionnaire had good internal consistency reliability (Cronbach's alpha= 0.85), indicating that the items in the questionnaire were consistent in measuring the construct of addiction risk in this sample.

In this study, modified standard Shahin's media literacy questionnaire was used. This version has been used in previous studies [19,20]. The questionnaire comprised five dimensions, each with a set of questions. The first dimension focused on the usage of media messages (questions 1-4), while the second dimension aimed to assess the understanding of how the media works (questions 5-11). The third dimension dealt with the evaluation of media messages (questions 12-19), while the fourth dimension concerned the combination of media messages (questions 20-24). Finally, the fifth dimension focused on summarizing media messages (questions 25-28). The questionnaire was designed based on the 5-point Likert scale, with response options ranging from 'very much' to 'very little. Higher scores on the Media Literacy Questionnaire indicate a higher level of media literacy. Researchers may use different cut-off points to classify participants into different categories of media literacy. In this study the median score was used as a cut-off point to divide participants into two groups of high and low

media literacy. Participants with scores above the median were considered to have high media literacy, while those with scores below the median were considered to have low media literacy. The validity and reliability of the questionnaire used in this study were confirmed by specialists in Library and Information Sciences, with a Cronbach's alpha of 0.89, indicating high internal consistency. Additionally, statistics and psychology specialists also confirmed the validity and reliability of the questionnaire, with a Cronbach's alpha of 0.75, indicating acceptable internal consistency in our study.

Spiritual Intelligence Self-Report Inventory (SISRI) used in this study, has 24 questions based on a 5-point Likert scale from 0 (not at all) to 4 (very much), indicating the extent to which respondents agree with each statement. The SISRI questionnaire also consists of four subscales, including conscious state expansion, creating personal meaning, supreme consciousness, and expanding the state of consciousness. Each subscale measures a specific aspect of spiritual intelligence. The scores for each subscale are also on a scale of 0-24. To interpret the scores of the Spiritual Intelligence Self-Report Inventory (SISRI), the questionnaire measures spiritual intelligence on a scale of 0-96. The higher the score, the greater the level of spiritual intelligence. In a sample of 70 people over two weeks, Cronbach's alpha coefficient for the Persian version was 0.89, and its reliability coefficient was 0.67 [21]. In addition, Safavi et al. conducted a study with a Cronbach's alpha

coefficient of 0.71 [22]. In the present study, the reliability of the SISRI was confirmed by calculating Cronbach's alpha ( $r = 0.71$ ), indicating acceptable internal consistency.

Initially, all requisite permits, including adherence to the ethical code, were secured from the Islamic Azad University. Following this, the statistical population was identified, and the sample size was determined using a non-random quota sampling method. Electronic questionnaires were generated using the native Porsline system and were distributed through student's social groups. To preserve the uniqueness of the responses, each student could only complete one questionnaire from one device, with a unique email or code employed to verify identity.

The collected data were exclusively analyzed using SPSS v.24 software. For descriptive statistics, methods such as calculating the mean, standard deviation, frequency, percentage, and the utilization of tables and graphs were employed. In the inferential section, considering the level of measurement of the variables, the Pearson correlation test and linear regression were conducted. Furthermore, Baron and Kenny's method was applied to analyze the mediator role.

## Results

Table 2 presents the distribution of gender and age among the participants in the study. It indicates that a majority of the participants are female (68%) and that most fall within the 18-21 age range (60.43%).

**Table 2: Frequency distribution of demographic variables**

Variables	Categories	Frequency (%)
Gender	Male	44 (32%)
	Female	95 (68%)
Age	18-21	84 (60.43%)
	21-24	48 (34.53%)
	24-30	7 (5.03%)

Table 3 provides the mean and standard deviation for each of the main variables. The mean score for Addiction across participants is 45.11 with a standard deviation of 3.32. For Media Literacy, the average score is 125.4, and the variability around this mean is represented by a standard deviation of 21.2. Spiritual Intelligence has an average score of 56.5 with a standard deviation of

6.82. Also, there's a negative correlation between Addiction and Media Literacy, with a Pearson coefficient of -0.33 ( $p < 0.01$ ), suggesting that as Media Literacy increases, Addiction tends to decrease, or vice versa. Addiction also has a negative correlation with Spiritual Intelligence, with a Pearson coefficient of -0.36 ( $p < 0.01$ ). This means that higher scores in Spiritual Intelligence

are associated with lower Addiction scores. The correlation between Media Literacy and Spiritual Intelligence is positive, albeit weaker, with a coefficient of 0.17. This indicates a slight

tendency for those with higher Media Literacy to also have higher scores in Spiritual Intelligence, though this relationship isn't as strong as the others.

**Table 3: Pearson correlation coefficients between addiction, media literacy, and spiritual intelligence**

Variable	Mean $\pm$ SD	Addiction	Media Literacy	Spiritual Intelligence
Addiction	45.11 $\pm$ 3.32	1.00	-0.33**	-0.36**
Media Literacy	125.4 $\pm$ 21.2	-0.33**	1.00	0.17
Spiritual Intelligence	56.5 $\pm$ 6.82	-0.36**	0.17	1.00

Note: \*\* denotes  $p < 0.01$

Table 4 presents the results of the regression analyses necessary to perform mediation analysis using the Baron and Kenny method. The estimate for the path from Media Literacy to Spiritual Intelligence (Path a) is 0.28 and is statistically significant ( $p < 0.01$ ). This indicates that Media Literacy has a significant impact on Spiritual Intelligence. The estimate for the path from Spiritual Intelligence to Addiction (Path b) is -0.36 and is statistically significant ( $p < 0.01$ ). This suggests that Spiritual Intelligence has a significant impact on Addiction. The total effect

of Media Literacy on Addiction (Path c) is -0.16 and is statistically significant ( $p < 0.01$ ). The direct effect of Media Literacy on Addiction with Spiritual Intelligence in the model (Path c') is -0.21 and is also statistically significant ( $p < 0.01$ ). To confirm the mediation, further analysis would need to show that the direct effect (Path c') is less significant than the total effect (Path c), and that both paths a and b are significant. This would support the argument that Spiritual Intelligence mediates the relationship between Media Literacy and Addiction.

**Table 4: Regression analysis for mediation using baron and kenny's method**

step	Estimate	Standard Error	t-value	p-value
Media Literacy -> Spiritual Intelligence (a)	0.28	0.05	3.87	<0.01
Spiritual Intelligence -> Addiction (b)	-0.36	0.04	-8.54	<0.01
Media Literacy -> Addiction (c - Total Effect)	-0.16	0.06	-4.42	<0.01
Media Literacy -> Addiction (c' - Direct Effect)	-0.21	0.02	-3.62	<0.01

## Discussion

The primary objective of this study was to examine the relationships between media literacy, spiritual intelligence levels, and tendencies toward addiction among nursing students at Zanjan University of Medical Sciences. The investigation specifically focused on assessing the mediating role of spiritual intelligence. The findings of the current study yield profound insights into the intricate relationships among Addiction, Media Literacy, and Spiritual Intelligence within the participant demographic.

The results indicate a significant association between media literacy and addiction tendencies, corroborating the findings of previous studies conducted by Eskandari et al. [23], Ali Akbarzadeh et al. [15], Williams et al. [16], and Weinandy et al. [17]. Furthermore, these results align with the work of Hobbs [24] and Jeong et al.

[25], who demonstrated that media literacy serves as a preventive factor against the adverse impacts of media, including addiction.

In each of these referenced studies, a statistically significant relationship between media literacy and addiction tendencies was observed. The impact of media on this population segment has the potential to induce high-risk behaviors, such as drug use. To mitigate these effects, individuals need to be educated on navigating different media and discerning between appropriate and inappropriate content [26]. Given the significance and close relationship between these two variables, their interconnection can be elucidated through their theoretical foundations [27,28].

This study supports the theory that higher levels of media literacy are associated with reduced addictive behaviors. This could be attributed to the enhanced resilience developed through a

comprehensive understanding and critical evaluation of media content, which helps in resisting the potentially addictive qualities of certain media. Additionally, the study found a negative correlation between Addiction and Spiritual Intelligence, suggesting that individuals with higher levels of spiritual understanding are better equipped to mitigate or resist addictive tendencies. This is consistent with the findings of Koenig et al. [29] and Miller [30], who posited that spiritual beliefs and practices can act as protective mechanisms against substance abuse and addictive behaviors.

Interestingly, the weaker yet notable correlation between Media Literacy and Spiritual Intelligence suggests the presence of common factors or skills developed by both an enhanced understanding of media and a higher level of spiritual comprehension. This relationship, though not strong, opens avenues for further exploration in future research.

Utilizing the Baron and Kenny method for mediation analysis has provided a nuanced understanding of the relationships between Media Literacy, Spiritual Intelligence, and Addiction. The analysis suggests that Spiritual Intelligence may act as a mediator in the relationship between Media Literacy and Addiction. This implies that by fostering Media Literacy, there is potential to indirectly contribute to reducing addiction through enhancing Spiritual Intelligence. This revelation bears significant implications for the development of interventions aimed at mitigating addictive behaviors, suggesting that the focus could be on enhancing media literacy, which could subsequently lead to an increase in spiritual intelligence and a reduction in addiction.

Further exploration and validation of these insights would benefit from replication in diverse demographic contexts and the execution of additional longitudinal studies to ascertain causality. The employment of qualitative approaches could also offer valuable insights into the subjective experiences and interpretations of the observed correlations.

This study relies on self-report questionnaires, which can introduce response bias and may not fully capture the complex nature of addiction tendencies and the mediating role of spiritual intelligence. Future research could benefit from

additional qualitative or observational data to complement the self-report measures.

Secondly, the study was conducted in a specific geographical location and focused on nursing students, which may limit the generalizability of the results to other populations or regions. Further studies involving diverse student groups and settings are needed to confirm the broader applicability of these findings.

Lastly, while we found that spiritual intelligence mediates the relationship between media literacy and addiction tendencies, the direction of causality cannot be determined from our cross-sectional data. Longitudinal studies could provide insights into the temporal relationships between these variables. Despite these limitations, our study contributes valuable insights into the role of media literacy and spiritual intelligence in addiction prevention among nursing students

### Conclusion

In conclusion, the outcomes of this research underscore the potential of cultivating media literacy and spiritual intelligence as preventative strategies against addictive behaviors. Given the continuous evolution of the media landscape and the enduring challenge posed by addiction, these insights hold paramount importance for educators, therapists, and policymakers. They highlight the necessity of integrating such strategies into preventative and intervention frameworks, aiming for a holistic approach to addressing addiction.

### Ethical Consideration

This research was meticulously reviewed and received approval from the ethics committee of Azad University of Zanzan under the ethics code IR.IAU.Z.REC.1401.047. Throughout the data collection process, a steadfast commitment to ethical principles was maintained. This included using a non-random quota sampling method for selection and allocation of samples, ensuring confidentiality of information, securing voluntary participation of individuals, guaranteeing their freedom to remain in the study, and providing transparent information.

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**Conflict of interest**

Not declared

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**Authors' contributions:**

The authors of this study have made significant contributions to the research. Elahe Golrang was responsible for the study design, data collection, and statistical analysis. Qamar Kiani and Afsaneh Sobhi contributed to data analysis and interpretation and provided expertise in the field of nursing and addiction, offering critical insights into the implications for nursing education and practice. All authors collaborated in the writing and revision of the manuscript, ensuring the integrity of the research and its presentation.

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