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Comparison of Maslow's hierarchy of needs, decision–making, and attention control in individuals with sex addiction and normal people

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Abstract:

BACKGROUND AND PURPOSE: Sexual addiction as a neglected disorder requires investigation and exploration as it affects various aspects of individual's personal and social lives. Therefore, the current research purpose was to examine the afflicted individuals from the standpoints of Maslow's hierarchy of needs, decision-making styles, and the function of attention.

MATERIALS AND METHODS: The research population of this study included all students of Isfahan University during the academic year January 2020 to February 2021, and after the screening, a total of 200 individuals were selected as a research sample and divided into two groups: the group with sexual addiction and the healthy group. Subsequently, both groups completed questionnaires related to Maslow's Hierarchy of Needs Questionnaire (MHNQ), General Decision-Making Style Questionnaire, and Attention Control Scale (ACS).

FINDINGS: The results of multivariate analysis of variance showed significant differences between two groups, normal and abnormal, in the needs for safety and the need for respect from Maslow's hierarchy of needs, decision-making styles (intuitive, dependent, and spontaneous), and the focus maintenance of attention in attentional functioning ($P < 0/001$). The variables of physiological needs, belongingness, and self-actualization in Maslow groups, normal and abnormal, decision-making styles, and the subscale of attention switching in attentional functioning did not show any significant difference in the two groups.

CONCLUSION: Overall, it appears that fixing (stabilization) in one category and returning (regression) in the stages of Maslow's hierarchy of needs, attention deficits including excessive or hyper-focused attention, malfunctioning in the decision-making process, and an impulsive, desire-driven approach, may significantly account for the difference observed between the two groups in these variables.

Keywords:

Attention control, behavioral addiction (sex addiction), decision-making, needs assessment

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Introduction

Addiction is a type of chronic psychological disorder that results in numerous motivational disorders and defects in behavior control.[1] A disorder that impacts every facet of one disorder and results in numerous motivational disorders significantly accounts for individuals in their immediate surroundings. Affected people frequently exhibit tardiness in their workplace to acquire the addictive substance and exhibit inadequate or malfunction performance. They also often face significant challenges in their family roles, which can lead to isolation and economic hardships. Various types of addiction have these features in common, and the addict's main priority will be the addictive substance, and the person will be oblivious to the main needs and values of his life. Sexual

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addiction is one of the types of addiction that has attracted the attention of mental health professionals due to its psychological consequences, and numerous studies have focused on examining its underlying mechanisms.[2] Determining precise statistics for sexual addiction statistics is challenging, in part because it was previously overlooked. However, it is estimated that approximately 6–8% of US adults can be classified as sex addicts. It can reach up to 24 million people, as the rate of sexual addiction may be increasing due to the widespread availability of sexual content, including pornography, dedicated communication apps, and online platforms addressing sexual content. One study revealed that 4.7 million American adults spend over 11 hours per week watching pornography online.[3] People often wonder whether only men are affected by sexual addiction, but while it is more common in men, women can also become addicted. Women may face greater challenges in seeking help due to stigma.[4] Accurate statistics on sexual addiction in Iran have not been reported by the Iranian Statistics Centre.

In this regard, sexual addiction is considered a disease associated with physical and psychosocial problems; so far, numerous research studies have sought to investigate its etiology and underlying factors.[5] There are many theoretical differences and intellectual conflicts regarding the definition of sexual addiction. Generally, sexual addiction is recognized as sexual behavior that is compulsive in nature and characterized by hyperactive sexual behaviors. Like other types of addiction, people with addiction have generally made many unsuccessful attempts to control or quit the addictive behaviors, often unsuccessfully. Sexual addiction is a compulsive and detrimental behavior that has multiple cognitive and emotional consequences for the affected individual.[6]

It appears that one of the most influential variables in sexual addiction is the concept of need satisfaction, which has been investigated and analyzed in a hierarchical manner in Maslow's theory[7]. In other words, according to Maslow's theory, sexual need is placed at the bottom of the pyramid of needs and is defined in the category of basic and physiological needs There is limited research that specifically examines Maslow's hierarchy of needs in people with sexual addiction. However, it seems that appropriate explanations can be obtained by researching this variable to understand and interpret sex addiction. One factor that seems to significantly contribute to the stagnation of sexual addicts is the first step of Maslow's hierarchy of needs in people with sexual addiction. However, it seems that appropriate explanations can be obtained by researching this variable to understand and interpret sex addiction. One factor that seems to significantly contribute to the stagnation of sexual addicts at the first step of Maslow's hierarchy of needs is the functions related to attention. In other words, excessive attention to sexual stimuli and sexual topics can provide a suitable explanation for the cause and mechanisms of engagement in physiological needs in sex addicts. Several research studies on attention control have shown that the reduction in attention control plays a fundamental role in the individual tendency toward addiction.[8] Therefore, it seems that examining this function in sex addicts will have important guidelines.

The way of preferring sexual topics combined with the intensity and persistence of addiction can have roots in pathological choices and tendencies, which will be examined scientifically in the introductions of decision-making research. Studies have demonstrated that the decision-making styles in addicted individuals are impaired, and this disorder is not caused by neuropsychological defects.[9] Decision-making styles can show how people act in situations that require analysis and interpretation and what their decision-making pattern is like. Identifying the way of decision-making of sexual addicts can help in clarifying the causes and factors associated with addiction. Comprehensive analysis and study are required to better understand the traits and issues of sexual addiction and the failure of therapeutic measures to quit. One of the main areas in the study of needs, especially sexual need, is Maslow's hierarchical approach. In other words, in this theory, Maslow explores human needs from the most animalistic to the highest and, by explaining the human place among them, is able to derive important guidelines for treatment. Exploring the relationship between Maslow's hierarchy of needs and sexual addiction provides expert insight into what causes people with the disease to stabilize at a certain stage and not meet them adequately. It can also reveal how to help people progress toward self-actualization. Defective capabilities that play a role in this stabilization and lack of progress can be assumed to some extent; attentional functions and decision-making style are able to explain how people pay attention to sexual issues and become involved in multiple relationships, how to decide on this matter, and what the problem associated with it is.

A significant determinant of their behavior is the function of attention in humans and other animals. All animals and humans (as sexual partners) undertake mating procedures based on some qualities while neglecting others. The examination of the stimulating coordinates that exist in the environment and the sexual object (potential sexual partner) is obviously the fundamental element of any sexual relationship. Investigating how attention works in people with sexual addiction and in the general population will shed light on numerous difficulties and tremendously assist therapists

in providing therapeutic methods to enhance attention to prevent addiction by treating it.[10]

Making decisions about having sex is always challenging. Most people prefer to be in a relationship with an individual they have a long-standing, intense bond with in a respectful, safe setting. Investigation and research are needed to understand how the mechanism of sex addiction incorporates multi-relationships with different persons in the person's decision-making system. Treatment for sexual hyperactivity (sex addiction) in affected individuals will be considerably more effective if their decision-making style is recognized and explained because addiction cannot develop when there are no wrong decisions.[11] The purpose of this study is to determine whether the Maslow hierarchy of needs exhibits a distinct and significant pattern in those who suffer from sexual addiction and to determine what the condition of people suffering from in other levels of the pyramid is and how it is different from that of healthy people. In this way and in the following, the variable mechanism of attention control in sex addicts will be examined to determine whether there is a dysfunction of attention control in sex addicts, and as a result, their position in the hierarchy of needs shifts or causes them to choose and move toward particular situations.

Materials and Methods

Study design and setting

In this study, descriptive causal comparison or ex-post factor was the methodology utilized. It should be noted that the coronavirus disease 2019 (COVID-19) outbreak required that the questionnaires be sent to the participants in the form of an online link and with advance coordination. Following the provision of the necessary explanations via virtual communication, the participants then completed and sent the questionnaires. In the data analysis, social science statistical tools were used.

Study participants and sampling

This study was conducted on a sample population including all the undergraduate, master, and PhD students at Isfahan University during the academic years of 2020–2021. In the beginning, a questionnaire on sexual addiction was distributed to 243 students of Isfahan University for screening purposes. Of them, 100 individuals were identified as sexually addicted, while 100 individuals were selected as the control group, meeting the inclusion criteria for entering the study. A total of 243 questionnaires were distributed for screening purposes; however, 23 questionnaires were found to be incomplete and 20 individuals did not meet the inclusion criteria, resulting in a final sample size of 200 participants for the study. Subsequently, both groups completed Maslow's Hierarchy of Needs Questionnaire (MHNQ), General Decision-Making Style Questionnaire (GDMS), and Attention Control Scale (ACS).

Data collection tools and techniques

The Revised Sexual Addiction Screening Test (SAST-R):

This test consists of 45 yes–no questions and comprises a main section of 20 initial questions and two subscales. The first subscale includes four subscales related to Internet-based sexual addiction, male-specific scale, female-specific scale, and gay-specific scale. The second subscale consists of research-based subscales used for identifying and differentiating the main components of sexual addiction, including cognitive preoccupation, lack of control, relationship impairment, emotional distress, and associated features. The validity of this tool is reported as 0.67, and its reliability is determined as 0.81. Researchers in Iran have obtained a validity of 0.75 and a reliability of 0.92 for the questionnaire.[12]

MHNQ:

The questionnaire consists of 50 translated questions that are organized into five sets of 10 questions each.[13] Each set of questions represents the measurement of a specific need. The questionnaire components include physiological needs, safety needs, belongingness and love needs, esteem needs, and self-actualization needs. The questionnaire is scored on a 5-point Likert scale, with the following scores: strongly disagree,[1] disagree,[2] neutral,[3] agree,[4] and strongly agree.[5] The reliability of the questionnaire in the Iranian sample is 0.86, and its validity is 0.61.[12]

GDMS:

With the aim of measuring individuals' decision-making styles, researchers have developed the decision-making style questionnaire.[14] This questionnaire comprises 25 questions that assess five distinct decision-making styles: rational, intuitive, avoidant, dependent, and spontaneous. To evaluate each decision-making style, five specific questions have been assigned. The scoring range for this questionnaire is from 25 to 125. The questions have been designed using a five-point Likert scale, ranging from completely disagree to completely agree, with a scoring range of 0 to 4. Each decision-making style is represented by a set of five questions. The tool demonstrated a reliability of 0.83 within the Iranian sample, while its validity was determined to be 0.63.[15]

ACS:

The ACS has been developed to measure attention control.[16] This self-report questionnaire consists of 20 items that assess attention control along two dimensions: attention focus, which pertains to the ability to sustain attention on a given task, and

attention shifting, which refers to the ability to redirect attention to a new task or effectively engage in multitasking. The items are scored on a 4-point scale ranging from (1) "almost never" to (4) "always." The scale has demonstrated satisfactory internal consistency reliability in the Iranian context, with Cronbach's alpha coefficient of 0.87[17] Moreover, the internal consistency reliability in this research was 0.88 and satisfactory. Both the content and construct validity of the scale have been confirmed through rigorous empirical examination by researchers.

Furthermore, the ACS exhibits a significant positive correlation with positive affective traits, such as extraversion (r = 0.40), while demonstrating an inverse correlation with negative affective traits, such as trait anxiety (r = -0.55).

The questionnaire has been translated into Persian by researchers and has undergone a thorough validation process to ensure both content and face validity.

Ethical consideration

This research study has been assigned an ethical code number R.IAU.KHUSISF.REC.1400.267 by the Ethics Committee of the Islamic Azad University, Isfahan (Khorasgan) Branch. The study adhered to the ethical guidelines and regulations set forth by the committee to ensure the protection of participants' rights, privacy, and confidentiality.

Results

The findings obtained from the statistical analysis of the data indicate that the null hypothesis regarding the normality of score distributions in both the normal and abnormal groups has been confirmed ($P < 0/05$). Additionally, the assumption of equal variances and the assumption of equal covariances or relationships between dependent variables in the groups have been confirmed for all research variables ($P < 0/05$).

Based on the statistical findings presented in Table 1, there is a significant difference in the mean scores of at least one of the hierarchical variables of Maslow's needs, decision-making styles, and attention control between two groups: individuals with sexual addiction or abnormality and normal individuals ($P < 0/001$). The results indicate that nearly 18.5% of the individual differences in the research variables are attributed to the group difference across all four tests. A statistical power of 99.8% has been attained, demonstrating the satisfactory accuracy of the test in examining hypotheses and the adequacy of the sample size for hypothesis testing.

The results of Table 2 indicate that there is a significant difference in the mean scores of safety needs and respect needs between the normal and abnormal groups ($P < 0/001$). The group membership or the difference between the two groups has an impact of 3.5% and 3.7% on safety needs and respect needs, respectively. However, the results show no significant difference between the two groups in the dimensions of physiological needs and self-actualization.

The results of Table 3 indicate a significant difference in the mean scores of imaginative, attachment, and impulsive decision-making styles between the normal and abnormal groups ($P < 0/001$). Group membership or the difference between the two groups has a respective impact of 3.6%, 3.7%, and 2.1% on imaginative, attachment, and impulsive decision-making styles. However, the results show no significant difference between the two groups in rational and avoidance decision-making styles.

The results of Table 4 indicate a significant difference in the mean scores of concentrations and sustained attention between the normal and abnormal groups ($P < 0/001$).

Table 1: Results of the multivariate analysis of variance (MANOVA), hierarchical needs variables, decision-making styles, and attention control variables

Source	Coefficient	*F*	Degrees of freedom	Degrees of freedom for error	Significance	Effect size	Statistical power
Pillai's trace	0/185	3/88	11	188	0/0001	0/185	0/998
Wilks lambada	0/815	3/88	11	188	0/0001	0/185	0/998
Hotelling's trace	0/227	3/88	11	188	0/0001	0/185	0/998
Roy's largest root	0/227	3/88	11	188	0/0001	0/185	0/998

Table 2: Results of univariate analysis within groups

Dimensions	Sum of squares	Degrees of freedom	Mean squared	*F*	Significance	Effect size	Statistical power
Physiological needs	74/420	1	74/420	2/521	0/114	0/013	0/352
Safety needs	210/125	1	210/125	7/082	0/008	0/035	0/754
Belongingness and affiliation needs	2/205	1	2/205	0/185	0/668	0/001	0/071
Esteem needs	386/420	1	386/420	7/572	0/006	0/037	0/782
Self-actualization needs	2/880	1	2/880	0/105	0/746	0/001	0/062

Table 3: Results of univariate analysis within groups

Dimensions	Sum of squares	Degrees of freedom	Mean squared	*F*	Significance	Effect size	Statistical power
Physiological needs	10/580	1	10/580	1/087	0/298	0/005	0/179
Safety needs	99/405	1	99/405	7/457	0/007	0/036	0/776
Belongingness and affiliation needs	85/805	1	85/805	7/692	0/006	0/037	0/788
Esteem needs	20/480	1	20/480	1/255	0/264	0/006	0/200
Self-actualization needs	67/280	1	67/280	4/281	0/040	0/021	0/540

Table 4: Results of univariate analysis of attention control dimensions within groups

Dimensions	Sum of squares	Degrees of freedom	Mean squared	*F*	Significance	Effect size	Statistical power
Focus–attention maintenance	84/5	1	84/5	7/24	0/008	0/035	0/764
Attention switching	14/4	1	14/4	0/857	0/356	0/004	0/152

The group membership or the difference between the two groups has an impact of 3.5% on concentration and sustained attention. However, the results show that there is no significant difference between the groups in the attentional shifting dimension.

Discussion

Based on the data analysis, it was observed that there is a significant difference in the average scores of at least one of the variables in Maslow's results, which show that there is no significant difference between the groups in attention, but the average scores for the needs for safety and the need for respect differ significantly between the two groups. However, there was no significant difference in physiological needs and self-actualization between the two groups. As previously mentioned, these findings have been implicitly replicated in other studies.[12,18] Additionally, researchers have indicated in a study the role of social support and self-esteem as components of the need for respect among individuals with sexual addiction. They have demonstrated that individuals with higher self-esteem and societal support are less susceptible to sexual addiction. This observation signifies that the elements of respect and a sense of worthiness in society are fundamental variables in elucidating the mechanisms of sexual addiction.[18]

To elucidate the findings, it is essential to highlight the connection between the sense of safety and trust and commitment in relationships. In other words, individuals whose safety needs have been satisfied and fulfilled do not perceive the necessity for their satisfaction through extramarital or casual sexual encounters. Consequently, they are less prone to engaging in extramarital affairs or indulging in premeditated sexual activities. On the contrary, these relationships tend to exacerbate feelings of insecurity, even among individuals with sexual addiction, leading to enduring changes in their capacity for intimacy and profound interpersonal connections.

Conversely, individuals who have achieved a sense of security are more inclined to remain within the confines of their established and secure framework, prioritizing long-term intimate relationships and family formation over superficial and transient connections. Security serves as a significant determinant in elucidating this distinction and amplifies the risk of sexual addiction as a means to fulfill internal security, merge with another, and attain acceptance.

Sexual addiction serves as a means to obtain desired objects and, to a greater extent, acts as evidence of an individual's need for self-validation. Individuals who have a strong need for respect strive to flourish by advancing in the identification of their discovered talents and abilities, rather than reverting to physiological needs. It appears that by gaining respect from both society and important individuals in their personal lives, the risk of succumbing to sexual addiction is reduced, as their needs are channeled through regulated methods and strategies. Conversely, individuals who do not experience appropriate fulfillment of respect undergo a regression or, in the worst case, remain trapped in the stages of their primal needs. In accordance with research findings, it has been demonstrated that individuals afflicted with sexual addiction often lack desirable and respectful interactions within the family setting. One of the contributing factors leading to their involvement in multiple relationships is the loss of respect or recurrent parental humiliation.[19]

Furthermore, it appears that by incorporating the element of respect into sexual relationships, the acceptance and prevalence of infidelity and corruption in those relationships can be minimized. This implies that individuals who have attained a sufficient level of self-respect regard sexual intercourse and acts with their partners as expressions of mutual respect, human dignity, and honor, rather than engaging in multiple relationships solely for sexual gratification. In this way, satisfying the need for respect serves as a powerful

deterrent against sexual addiction. Consequently, receiving and fulfilling the need for respect manifest itself in the sexual relationship with the desired partner, thereby fostering a healthy and progressive connection in the individual's hierarchy of needs. The findings of the research, based on univariate analysis, indicate a significant difference in mean scores for intuitive, attachment, and impulsive styles between the two groups, while rational and avoidant styles did not exhibit a significant difference. These results have been replicated in other studies.[20,21] Although the implications of decision-making and satisfaction with it can be another research topic, considering individuals' status in the hierarchy of needs, it does not seem to entail dynamism and growth in such decisions. Conversely, it places individuals in a vicious cycle of multiple dysfunctional relationships and impedes their growth and flourishing. Research has indicated a negative correlation between the speed of decision-making and its accuracy and validity. In other words, individuals who score higher in impulsive decision-making also tend to make a higher number of wrong decisions.[22,23] It should be noted that decision-making deficiencies are strong predictors of clinical outcomes and weaknesses in addiction treatment. Individuals who exhibit flaws in their decision-making process are more likely to relapse into their addiction, rendering treatment less effective for them. Studies have demonstrated that training in goal-oriented management enhances reward-based decision-making. Consequently, it appears that teaching rational and adaptive decision-making significantly contributes to individuals' avoidance of being engulfed in needs and addiction. When individuals take a moment to reflect before making a decision, they are more likely to make better choices.[20]

The valuation and selection of individuals, their dependency on an addictive object (in this case, sexual relationships), and their ability to obtain it are strong predictors of susceptibility to addiction. As the findings of the present research demonstrate, individuals with addiction tend to make intuitive and impulsive decisions, indicating deficiencies and dysfunction in the decision-making process and a lack of management and rationality before making a decision. Such decision-making, due to its disregard for consequences and outcomes, increases the risk of addiction in individuals. Furthermore, the data from the current study revealed a significant difference in mean scores of concentration–attention maintenance between the two groups, while no significant difference was observed in attentional switching scores. These results have been replicated in other studies as well.[24,25] As mentioned earlier, individuals with sexual addiction exhibit impairments and dysfunction in the concentration–attention maintenance scale compared with healthy individuals. It appears that the primary cause of decision-making difficulties in individuals with addiction is their inability to remain focused on the coordinates of a decision and draw conclusions based on inattentiveness or incomplete attention. These circumstances lead to decisions as mentioned earlier. Attention to problems can result in disregarding obstacles and the consequences of achieving a desired object. If an individual fails to properly evaluate the challenges and mechanisms of satisfying a need, decisions are made in a way that places the individual in a cycle of reward acquisition and repetition. An interesting point to note is that lack of focus appears to be associated with impulsive and intuitive decision-making. In both cognitive functions, individuals with inadequate attention and concentration make decisions that lead to immediate and strong rewards ultimately becoming addictive in the long term.

Various research studies have demonstrated that significantly higher levels of addiction are accompanied by poorer episodic memory, problem-solving skills, basic reading skills, written expression skills, and clinical attention. Moreover, significantly higher levels of addiction are associated with worse problem-solving and attention. In general, studies have indicated that attention, memory, processing speed, spatial–visual organization, sustained sequential processing, working memory, problem-solving, and verbal expression skills are inferior in individuals with addiction compared with healthy individuals.[26]

Research has also shown that selective attention to information related to substances can contribute to the maintenance of addiction. In a nonclinical sample, it was found that alcohol misuse was associated with difficulties shifting attention away from alcohol-related cues. Additionally, individuals diagnosed with alcohol or cannabis addiction demonstrated a greater attentional bias toward substance-related cues, suggesting that increased attention to such cues may be linked to addictive substance use.[26] Overall, research has highlighted attention deficits in individuals with addiction. In individuals with sexual addiction, situations that potentially remind them of pairing and, consequently, sexual relationships can disrupt attention, making it one-dimensional and keeping the individual solely focused on sexual attractiveness and the anticipated reward. The reinforcement obtained after sexual encounters will be powerful enough to result in heightened attention and decreased concentration in similar situations, thus influencing decision-making and choice.

The findings revealed that there was no significant difference in the attentional shift scale between the

two groups. In other words, the present study does not consider this scale to have a meaningful role in predicting the transition from a state of health to addiction. It appears that individuals with sexual addiction, similar to healthy individuals, are capable of redirecting their attention to different environmental factors. Additionally, if a stimulus proves unresponsive, they can become more attentive to stimuli that are more appealing. However, it should be noted that the focus on attractive stimuli poses a flaw and does not lead to the logical fulfillment of needs, considering cultural and societal norms. Therefore, it does not result in satisfactory outcomes.

Limitation and suggestions

As a result, the research findings suggest that emphasizing Maslow's hierarchy of needs can significantly assist researchers and scholars in understanding and elucidating the process of sexual addiction in individuals. Furthermore, the obtained findings from the attention control variable can be utilized as therapeutic guidelines to bring about behavioral changes in addiction patterns. The sensitivity of the research topic in terms of cultural considerations and individuals' willingness to cooperate has limited and complicated the sampling process. Additionally, due to the research being conducted in Isfahan City, the generalizability of the results to other regions within the province and the country might be limited due to cultural diversity. Based on the research findings, it is recommended that researchers take action to empower individuals at risk of sexual addiction by identifying unmet needs and enhancing problem-solving, decision-making, and rehabilitative abilities to address attention deficits. Moreover, it is important to note that the present study did not provide psychological services to patients, so psychological services specifically focused on sexual addiction can offer a fresh understanding of the interplay between the variables examined in this research.

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Conflicts of interest

There are no conflicts of interest.

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