A Comparative Examination of Maladaptive Schemas in Sex Addicts and Normal Individuals

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Ebrahim Soltani Azemat[1], Abolfazl Mohammadian[1], Nasrin Heydari Dolat Abadi[2], Parvaneh Mohammadkhani[3*]

1. Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
2. Department of Psychology, Faculty of Humanities and Social Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran.
3. Social Welfare Management Research Center, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran

ABSTRACT

Objective: Sexual addiction is a psychiatric disorder with unpleasant personal, inter-personal, legal, social, and physical outcomes for the patients. The cycle of this disorder is based on a false belief system known as early maladaptive schemas. This study aimed to examine and compare maladaptive cognitive schemas in sex addicts and normal people.

Methods: In the present study, a causal-comparative research method was undertaken. A total of 30 male sex addicts were selected using a snowball sampling method from the population of sex addicts in Tehran, Iran. Also, 30 normal men form the general population were selected as the control group. Control participants were matched with the patients with regard to demographic characteristics. Participants first completed the sexual addiction screening test-revised form and then the Young schema questionnaire (YSQ). The data were analyzed using the multivariate analysis of variance and stepwise discriminant analysis. All analyses were conducted using SPSS.

Results: The results indicated that sex addicts scored on the YSQ significantly higher than participants in the control group (P<0.001). Discriminant analysis revealed that 5 schemas, including dependency, mistrust, subjugation, vulnerability, and emotional deprivation were the best predictors of being a member of sexual addiction or non-sexual addiction groups (P<0.001).

Conclusion: Sex addicts have more and stronger early maladaptive schemas than normal people, so they can be distinguished from normal people according to the schemas of dependency, mistrust, subjugation, vulnerability, and emotional deprivation.

1. Introduction

The concept of sexual addiction was developed in the last 2 decades to describe the mental disorder of those who are obsessively looking after sexual experiences, and exhibit behavioral disturbances if they cannot satisfy their sexual impulses (Kaplan & Sadock, 2015). Traditionally, the term "addiction" has been used to describe substance and alcohol abuse. But, recently it has been suggested that it should not

* **Corresponding Author:**
Parvaneh Mohammadkhani, PhD
Address: *Social Welfare Management Research Center, University of Social Welfare and Rehabilitation Sciences, Koodakyar Ave., Daneshjoo Blvd., Evin, Tehran, Iran.*
Tel: *+98 (21) 22180045*
E-mail: *parmohamir@yahoo.com*

be limited to illegal drugs and alcohol, and must include intensified and excessive behaviors such as gambling, eating, exercise, and sexual activity. In this way, it is called behavioral addiction. The term "sexual addiction" belongs to this category (Juhnke & Hagedorn, 2013).

The term "sexual addiction" is neither used in DSM-IV, nor generally acknowledged. However, some people devote their whole life, activities, and behaviors seeking sexual relationships. These people spend a lot of time for this kind of behavior, and often make unsuccessful efforts to stop it. They make increasing and repeated efforts to have sexual relationship, and get annoyed if they fail. Currently, there is a tendency among researchers to create a new diagnostic category for this disorder in DSM (Kaplan & Sadock, 2015). Manely (1999) believed that addiction-like sexual relationship is a chronic and progressive illness, characterized by patterns of compulsive sexual behaviors, which despite its destructive consequences, occurs as a response to internal pain, suffering, and anger. Some of the symptoms of sexual addiction are as follows: 1) Out of control sexual behavior, 2) Serious legal, medical, and inter-personal consequences of sexual behavior, 3) Repeated efforts to stop sexual behavior, 4) Obsessions and sexual imaginations, and 5) Sexual behavior interfering with general and social functioning (Kaplan & Sadock, 2015).

The professional recognition of sexual addiction started with the works of the psychologist, Patrick Carnes (1980). However, lack of empirical data prevented "sexual addiction" to be accepted as a real problem (Levine & Troiden, 1988). Although, the concept of sexual addiction is not accepted by all researchers, and there is no generally accepted definition of sexual addiction, many researchers agree on a definition of sexual addiction, proposed by WHO. It defines sexual addiction as an impairment in intimate relationships, characterized by compulsive episodes of mental preoccupations and rituals, sexual behaviors, lack of appetite, extreme and excessive control over sexual behaviors, as well as frustration and hopelessness about controlling sexual behavior (Adams & Kenneth, 2001).

Most researchers state that sexual addiction is rooted in childhood problems and unpleasant experiences, as well as the parent-child relationship. They believe that parental performance significantly affects the formation of thoughts, behaviors, and emotions in children (Adams & Kenneth, 2001). Based on the stress-vulnerability model in psychopathology, many studies have examined the role of family factors as predisposing factors in a person's vulnerability (Harris & Curtin, 2002). Piaget and Bowlby

believed that parental performance would create and extend patterns, called schemas, in the cognitive structure of a person. These schemas act as lenses in the life of a person, and influence the way he or she interprets, selects, and evaluates experiences (Gunty & Buri, 2008).

Early maladaptive schemas are the earliest cognitive components, and sometimes they are formed even before a child learns to speak (preverbal schemas). They often have a subliminal influence on the information processing system and enter a person's thoughts automatically (Dozois et al., 2014). Schemas are formed during childhood experiences and control a person's responses to environmental events. Although Young believed that factors related to society, school, and peers are important in the formation of schemas, their effect is not as extensive and persistent as family factors (Torres, 2002).

According to Young, child has 5 basic emotional needs: 1) Secure attachment to others, 2) Autonomy, competence, and identity, 3) Freedom to express healthy needs and emotions, 4) Spontaneity and play, and 5) Realistic limits and self-restraint (Young, Klosko, & Weishaar, 2003). Frustration or overindulgence of basic needs, and identification with parents, lead to formation of maladaptive schemas in the child (Young et al., 2003). Young believed that every psychopathological symptom was related to one or more of the early maladaptive schemas (Delattre et al., 2003).

Research studies on early maladaptive schemas and psychopathology have always indicated the importance of schemas in the formation of psychopathological symptoms (Pinto-Gouveia, Castilho, Galhardo, & Cunha, 2006). For example, relationships between maladaptive schemas and symptoms have been shown in social phobia, obsessive compulsive disorder, personality disorders, eating disorders, substance abuse, narcissism, impaired interpersonal relationships, and sexual addiction (Mohammad Beigi, Eghlidi, & Arab Ahmadi, 2014). Although there are few studies about the relationship between sexual addiction and maladaptive schemas, it is assumed that the maladaptive cognitive schemas, which are formed following childhood traumas, are responsible for people's problems (Calvete, 2014). Stephens (2001) proposed a schema-based developmental cognitive model of addiction-like relationships, in which the important components of this issue (genetic, temperament, development of instinctive tendencies, and culture) are examined.

In this model, culture, instinctive tendencies, temperament (such as shyness), early childhood experiences (such as traumas and attachment problems) and the like

lead to formation of schemas, primary beliefs, and expectations. In turn, these schemas lead to the use of coping strategies such as addiction-like sexual and romantic behaviors, and these behaviors are intensified in the presence of sexual stimuli. Switzer (2006), confirming the effect of schemas on sexual performance, stated that maladaptive schemas can influence a person's perception of different situations, including sexual settings.

Although there are many studies on issues related to sex, there is a shortage of studies on sexual addiction and some important issues such as maladaptive schemas that are rooted in childhood experiences and parent-child relationships. Studying maladaptive schemas is of high clinical importance and helps clinicians to improve maladaptive schemas in sex addicts, let alone provides researchers with useful information to take appropriate measures to protect children in case of traumas. Sexual addiction creates numerous problems for a person. It is a destructive disorder, which ruins marriages and family relationships. It also makes addicts vulnerable to AIDS and other sexually transmitted diseases, and creates multiple social and job problems. The goal of the present study was to examine and compare early maladaptive schemas in male sexual addicts and normal participants.

2. Methods

A causal-comparative research design was used in this basic research. The population included all male sex addicts in Tehran, Iran. In causal-comparative studies, the sample must include at least 30 individuals; therefore, we selected 30 men with sexual addiction, and 30 normal men as the control group.

The sample were selected using a snowball sampling method from those who had been diagnosed with sex addition by a psychiatrist. One of the researchers was introduced to one of the samples, then he introduced some others and this trend continued. The researcher who gave the questionnaires was blind to the samples. Furthermore, the identity of samples was kept completely confidential. According to these facts, they fill the questionnaire cooperatively and comfortably.

Participants in the control group were matched to the patients in terms of demographic characteristics. Participants first completed the sexual addiction screening test-revised (SAST-R) form, and then the Young schema questionnaire (YSQ). The inclusion criteria were as follows: having sex addition and passed at least 5th grade of elementary school. The exclusion criteria were having comorbid disorders, especially substance and al-

cohol abuse. The ethical issues such as confidentiality, obtaining written consent of participants, and avoiding additional interventions were all carefully considered.

The sexual addiction screening test-revised (SAST-R) (Carnes, Green, & Carnes, 2010) has 45 items with "yes" or "no" answers. It has a main section (including the first 20 items) and 2 categories of subscales. The first category has 4 subscales of internet items, men's items, women's items, and homosexual men's items. The second category includes research subscales, which are used for diagnosis and differentiation of the main components of addiction (Carnes et al., 2010). The Cronbach α coefficient of male heterosexuals has been reported to be 0.82 (Carnes et al., 2010). Zahedian and Samani (2011) examined the validity of the SAST-R for the Iranian population in a sample consisting of 70 male and female participants, by calculating the Pearson correlation coefficient between dependent variables, in a 3-week interval. He found a value of 0.92. Several experts confirmed the face validity of the questionnaire. Correlations between the main subscale and other 4 subscales of the SAST-R, and the total score has demonstrated as 0.72, in 70 participants.

Young schema questionnaire-short form (YSQ-S3,) is a 75-item questionnaire developed by Young (Young, 1998) to evaluate 15 early maladaptive schemas, including emotional deprivation, mistrust/abuse, social isolation/alienation, defectiveness/shame, failure, dependency/incompetency, vulnerability to harm and illness, enmeshment/undeveloped-self, subjugation, self-sacrifice, emotional inhibition, unrelenting standards, entitlement/grandiosity, and insufficient self-control/self-discipline. Items are rated on a 6-point Likert-type scale, ranging from totally incorrect (1) to totally correct (6). In this questionnaire, every 5 items assess a particular schema. The validity and reliability of the YSQ-S3 have been approved in many studies (Shahamat & Rezvani, 2010). The psychometric properties of the YSQ-S3 was evaluated by Ahi (2006) at Tehran University. The internal consistency of the YSQ, using the Cronbach α coefficient was found as 0.97 in a female sample and 0.98 in a male sample. In the next section, the descriptive and inferential findings are presented. The study hypotheses were analyzed using a multivariate analysis of variance (MANOVA) and discriminant functional analysis. All analyses were conducted using SPSS 16.

3. Results

Demographic information This research is presented in Table 1. In the present study, the mean age of the patients

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and controls were 30.31(SD=3.2) and 29.50(SD=2.43) years, respectively. The patients and controls had educational background of 14.10 and 13.50 years, respectively.

The Kolmogorov–Smirnov test indicated the homogeneity of the data. An independent samples t-test showed no significant differences between 2 groups with regard to the mean age (P=5.37, t=0.62) and education years (P=0.37, t=0.88). The descriptive and analytical data are presented here. Table 2 shows the mean and standard deviation of the scores of YSQ-S3 in both groups of participants. MANOVA showed a difference between 2 groups with regard to early maladaptive schemas (F_{44}=12.21, P<0.001) (Table 3). The results of Wilks' lambda test indicated that the group effect was significant (P<0.01), i.e. the mean of early maladaptive schemas between 2 groups was significantly different. The results of a univariate analysis of variance indicated a significant differ-

Table 1. Demographic characteristics of participants in the study and control groups (n=30).

Variable		Sexual addict		Normal individuals	
		n	%	n	%
Marital status	Single	15	50	17	56
	Married	5	15	8	26
	Divorced	10	35	5	15
Job	Unemployed	7	23	10	35
	Employed	23	76	20	66
Education	Primary education	12	40	10	34
	Diploma	18	60	20	66

Table 2. Mean and standard deviation of the scores of the YSQ-S3 in both groups of participants.

Variables	Patient group		Normal group	
	Mean	Standard deviation	Mean	Standard deviation
Emotional deprivation	3.46	0.970	2.92	1.09
Abandonment/Instability	4.36	1.40	3.20	1.39
Mistrust/Abuse	3.77	0.843	2.60	1.55
Social isolation/Alienation	2.80	0.723	2.32	1.39
Defectiveness/Shame	2.85	0.665	1.88	1.07
Failure	3.27	1.53	1.65	0.746
Dependence/Incompetence	3.76	1.02	2.47	1.19
Vulnerability	3.36	0.691	2.34	1.18
Enmeshment	3.20	0.903	2.45	1.15
Subjugation	3.45	1.09	2.41	1.01
Self-sacrifice	3.64	1.42	4.04	0.674
Emotional inhibition	3.12	1.16	2.15	1.24
Unrelenting standards	4.17	1.16	3.79	0.973
Entitlement	2.95	0.816	2.99	0.923
Insufficient self-control	3.73	0.793	2.53	1.33

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Table 3. Multivariate analysis of variance for early maladaptive schemas in 2 groups.

Effect	Index	Value	F	df hypothesis	df error	P	Chi eta
Group	Wilks' lambda	0.878	21.12	15	44	0.000	0.878

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Table 4. Summary of the univariate analysis of variance for scores of the YSQ in 2 groups.

	Scale	df	Sum of squares	Mean square	F	P
	Emotional deprivation	1	4.48	4.48	4.17	0.046*
	Abandonment/Instability	1	20.18	20.18	10.13	0.002**
	Mistrust/Abuse	1	20.65	20.65	13.13	0.000**
	Social isolation/Alienation	1	3.45	3.45	2.80	0.099
	Defectiveness/Shame	1	14.11	14.11	17.61	0.000**
	Failure	1	39.36	39.36	27	0.000**
	Dependence/Incompetence	1	24.96	24.96	20.13	0.000**
Group	Vulnerability	1	15.81	15.81	16.76	0.000**
	Enmeshment	1	8.58	8.58	7.99	0.006**
	Subjugation	1	16.24	16.24	14.55	0.000**
	Self-sacrifice	1	2.36	2.36	1.90	0.173
	Emotional inhibition	1	14.11	14.11	9.69	0.003**
	Unrelenting standards	1	2.16	2.16	1.87	0.178
	Entitlement	1	0.024	0.024	0.032	0.860
	Insufficient self-control	1	21.72	21.72	18.06	0.000**

**P<0.01, *P<0.05.

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Table 5. Characteristics of the variables entering the prediction equation.

Step	Variable	Tolerance factor	F exit	Wilks's lambda
1	Dependence/Incompetence	1	20.13	
2	Dependence/Incompetence Mistrust/Abuse	0.109 0.310	58.08 11.43	0.806 0.476
3	Dependence/Incompetence Mistrust/Abuse Subjugation	0.088 0.209 0.516	83.54 29.68 22.35	0.708 0.433 0.396
4	Dependence/Incompetence Mistrust/Abuse Subjugation Vulnerability	0.055 0.135 0.276 0.355	82.80 47.91 46.16 10.30	0.525 0.390 0.383 0.245
5	Dependence/Incompetence Mistrust/Abuse Subjugation Vulnerability Emotional deprivation	0.040 0.067 0.194 0.268 0.315	111.34 63.91 67.13 20.18 11.75	0.525 0.372 0.383 0.232 0.205

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Table 6. Summary of the results of eigenvalue analysis.

Function	Eigenvalue	Variance%	Canonical correlation
1	4.98	100.0	03.91

Table7. Summary of the results of an evaluation of the discriminant function.

Function	Wilks lambda	Chi-square	df	p
1	0.167	97.52	7	0.001

ence between 2 groups with regard to 12 early maladaptive schemas; and no significant difference in 4 schemas, including social isolation, self-sacrifice, unrelenting standards, and entitlement was seen. Therefore, it confirmed the study hypothesis that there are more early maladaptive schemas in sex addicts (Table 4).

In the next step, a stepwise discriminant analysis was conducted in order to determine the predictive power of early maladaptive schemas in distinguishing sex addicts from normal individuals. Before conducting the analysis, an examination of the first assumption of the stepwise discriminant analysis, i.e. the Box's M-test for testing homogeneity of covariance matrices (P=0.40, M=27.41) indicated that the data were good for the analysis. In the stepwise discriminant analysis, variables were feed into the prediction equation based on the correlations between every independent variable and criterion variable. Table 5 shows that 5 schemas, including dependence, mistrust, subjugation, vulnerability, and emotional inhibition entered the discriminant analysis equation and the other variables were removed. The Wilks' lambda coefficient is an index used to differentiate between 2 classes. The lower the coefficient, the lower the discriminatory power. Therefore, when the next schemas entered the equation, the lambda coefficient reduced. The remaining findings of the analysis were examined to determine how much the function formed by the 5 aforementioned variables could explain the criterion variable. Eigenvalue shows that how much a discriminant function can differentiate between classes. As you can see in Table 6, the function is significant at 0.001 level. This means that the function can significantly predict the placement of participants in each group. Based on exponentiation of the canonical correlations, the function can explain 83% of the criterion variable.

In the next step, the predicted placements based on the mean of standard scores from the discriminant function were compared to the real placements (sex addicts and normal participants) to determine the accuracy of the

discriminant function. The results indicated that the standard scores from the discriminant function had 100% sensitivity for sex addicts and 90% sensitivity for normal participants. This means that the function can correctly predict the placement of 100% of sex addicts and 90% of normal participants. Therefore, the specificity of the function is equal to zero i.e. there is 0% probability that the function incorrectly classify sex addicts as normal individuals. We can say that the function correctly predicts real sex addict groups and normal individuals in 100% of cases (Tables 6 and 7).

4. Discussion

The goal of the present study was to examine and compare early maladaptive schemas between sex addicts and normal individuals and to determine what schemas better predict sexual addiction. This study showed that sex addicts compared to normal individuals have more maladaptive schemas. Some of these schemas are of high importance in understanding the cognitive vulnerabilities of sex addicts, and they can be used to distinguish sex addicts form normal people. The study findings revealed that it is possible to predict sexual addiction based on early maladaptive schemas.

The results of the present study are consistent with the results of the studies conducted by Gomes and Nobre (2012), Stephens (2001), and Haghighatmanesh, Aghamohammadian Shaerbaf, Ali Ghanbari Hashemabadi, & Mahram (2010). Gomes found that individuals with sexual dysfunction compared to those without dysfunction have more salient early maladaptive schemas. Stephens in his study on fundamental beliefs in men with sexual addiction, found that men with addiction-like relationships have higher levels of unhealthy core beliefs regarding the disconnection/rejection domain. Haghighatmanesh et al. (2010) also found that individuals with a history of sexual deviation compared to non-

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deviant individuals have more early maladaptive schemas and the schemas are more salient in them.

According to the study results, sex addicts seem to have distorted thoughts and cognitions that make their understanding of sex-related situations different from normal individuals (Switzer, 2006). They use sexual relationship as a way of attracting attention and a tool to manipulate and exploit others (Harding, Burns, & Jackson, 2012).

These findings are in line with the theory of early maladaptive schemas (Young et al., 2003) and Young's model of cognitive-behavioral therapy. In these theories, deviant sexual behavior are assumed to result from early maladaptive schemas. Individuals interpret and act through these schemas (Burn & Brown, 2006).

The study results indicate that 5 schemas, including dependence/incompetence, mistrust/abuse, subjugation, vulnerability, and emotional deprivation are the best predictors of sexual addiction. In other words, in sex addicts compared to normal individuals, beliefs regarding mistrust/abuse are more maladaptive. Therefore, they see the world as a place filled with cruelty and injustice in which people need to harm others and exploit them to fulfill their interests and needs (Polaschek & Ward, 2002). People with a dependence schema have expectations of themselves and the world around them that impair their ability to distinguish themselves form parents and act independently. These people are unable to set specific goals and acquire needed skills. Therefore, in their adulthood, they act like a child in terms of competence and efficiency (Young et al., 2003).

Apparently, they try to compensate for their schema and show their competence and separation from family by engaging in sexual relationships. In this way they feel strong and show that their goals and standards are different from family. The subjugation schema is also experienced by ex-addicts. Those who have this schema in their childhood are likely to excessively compensate for it in their adulthood and show disobedience to authority. In fact, a reckless and uncontrolled sexual behavior is considered as an excessive compensation for the subjugation schema (Noferesty, 2013).

In addition, those with a vulnerability schema, try to harm others to avoid a possible harm that might happen to themselves. People with an emotional deprivation schema, (because their desires and needs regarding emotional support have not been answered by others) avoid intimacy in their adulthood. Sex addicts also try to avoid intimacy in relationships, and this is one of the most evi-

dent characteristics of these patients. It is also important in the definition of the disorder (Noferesty, 2013).

This study like other studies in the field of humanities had some limitations. The first limitation was its small sample, because of difficulty in finding this group of patients. Therefore, it is suggested that future studies use a larger sample to increase the generalizability of the results. With regard to the role of mediator variables such as social and family support, we suggest that future studies examine the effect of mediator variables in the occurrence and prevention of maladaptive schemas in sex addicts. It is also suggested that future studies compare schemas between female and male sex addicts.

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Conflict of Interests

The authors declared no conflict of interests.

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