

## Standardization and Normalization of the Changes in the Sexual Functioning Questionnaire in Male Addicts and a Comparing Male Addict's Sexual Functioning with Normal People

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### Abstract

The present study aimed to validate the Changes in the Sexual Functioning Questionnaire Short-Form (CSFQ-14) and compare male addict's sexual functioning to that of normal people. In this study, a causal-comparative design was used. A total of 101 men addicted to one or more substances, from addiction treatment centers in Semnan, and a total of 101 normal men from the staff of Semnan's Universities were selected using a convenience sampling method. The instrument used in this study was the CSFQ which is a 14-item questionnaire. All the study data were analyzed using SPSS software. An exploratory factor analysis revealed 3 factors: 1) sexual pleasure factor (single-item), 2) mental factor (sexual desire) with a Cronbach's alpha of 0.90, and 3) physical factor (orgasm and arousal) with a Cronbach's alpha of 0.92. In addition, the results of a MANOVA analysis comparing the sexual functioning of sex addicts to that of non-addicts indicated significant differences between the two groups in all the three factors. Therefore, the validated instrument can be useful in assessing the changes in sexual functioning. The study results also rejected the claim that drugs can solve sexual problems or lead to a feeling of greater sexual pleasure.

**Keywords:** Addiction; Drugs; Sexual functioning; Changes in sexual functioning

### Introduction

Sexual dysfunction in men refers to an inability to have a pleasant sexual relationship that may result from erectile dysfunction, or some problems related to ejaculation or orgasm or pain in the penis during intercourse [1]. Research studies show that many heroin users begin using the drug in order to cure their sexual disorders, such as premature ejaculation and erectile dysfunction. These people also use opioids to control ejaculation, reduce anxiety during intercourse, have a more powerful erection, and reduce the feelings of incompetence in sexual activity [2]. In some cases, the use of cocaine and amphetamines has become associated with sexual desire, and many drug users are unable to separate sex and drug use. Several studies have shown that using low doses of drugs for a short period of time may improve some aspects of sexual functioning [3-8]. These benefits sometimes cause a person to start using drugs [9]. Drug users gradually increase the amount and duration of their use, but the benefits are short-lived. Therefore, they try to experience the benefits again, but there are often opposite effects, and drug tolerance and a decline in physical functioning begin to appear [10]. Finally, the increase in the amount and duration of drug use, leads to sexual dysfunction [8,11-17]. Other researchers have also found relationships between changes in sexual functioning and use of medications; these changes occur both in psychological and physiological areas, leading to sexual dysfunction or changes in sexual functioning [10]. Sexual dysfunction in men refers to an inability to have a pleasant sexual relationship that may result from

erectile dysfunction, or some problems related to ejaculation or orgasm, or pain in the penis during intercourse. The prevalence rate of sexual dysfunction in the general population is estimated to be from 17% to 48% [1]. In an interview study on people dependent on substances, Rostami et al. [18] found that the most prevalent sexual dysfunction among male addicts was premature ejaculation (33.33%). Other sexual dysfunctions with the highest prevalence rates were sexual desire disorder (30.80), erectile dysfunction (19%), orgasmic disorder (7.93%) and sexual aversion disorder (3.17%). Many factors are involved in sexual functioning, including psychological, neurological, hormonal, and arterial factors. These disorders and sexual dysfunctions are more prevalent in addicts, because drugs directly affect the aforementioned bodily systems [19]. Hayes et al. [20], divided the sexual dysfunctions in men into four categories: A) Sexual aversion disorder: aversion and avoidance of genital sexual contact with a sexual partner. B) Sexual arousal disorder: partial or complete, persistent and recurrent inability to obtain or maintain an erection firm enough for sex. C) Orgasmic disorder: in this condition, a patient complains about the lack or absence of a mental feeling of pleasure during orgasm. D) Painful intercourse: persistent or recurrent genital pain that occurs before, during or after intercourse.

According to previous studies, sexual dysfunctions are highly prevalent in addict populations. But the prevalence rate and severity of sexual disorders has remained relatively unknown in Iran, due to a lack of research studies and related instruments. Moreover, it is needed to compare addicts and normal individuals in terms of sexual disorders, therefore, the present study aims to examine the psychometric properties of the CSFQ-14, as an instrument useful in clinical

interventions, marital consultations etc. the present study also aims to examine and compare sexual disorders in addicts and normal people.

## Methods

The present study is a descriptive-survey research using a causal-comparative design. The statistical population included two groups, consisting of addicts and normal individuals from Semnan. At first, a list of all addiction treatment centers in Semnan was prepared, then four centers were selected from different districts of Semnan. After obtaining the permissions of doctors and staff of the centers, the informed consents of addicts were obtained, and a total of 120 addicts were selected as the study sample using a convenience sampling method. A total of 102 healthy individuals were also selected from the staff of Semnan University using a convenience sampling method. The inclusion criteria were as follows: 1- being more than 20 years old and less than 60 years old, 2- being capable of sexual functioning, and 3- not having genital disorders. Then, Participants completed the questionnaires. Because it was possible that some of the addicts be illiterate or partially illiterate, they were allowed to ask questions from the researcher about the items they couldn't understand well.

The instrument used in the present study is the Changes in the Sexual Functioning Questionnaire Short-Form (CSFQ-14) [21] that is consisted of 14 items. This questionnaire had a three-dimensional factor structure, including: A) Sexual desire (Item 1), B) Arousal-orgasm that is the physical dimension of sexual functioning (items 8,9,10,13 and 14), and C) Sexual pleasure that is the psychological dimension of sexual functioning (items 2,3,4,5,6 and 11). Items are rated on a 5-point Likert-type scale. Higher scores on the items and the overall scale indicate better sexual functioning and lower scores indicate worse sexual functioning. Items 10 and 14 are reverse-scored. The data were described using descriptive statistics, including frequency distributions, measures of central tendency, and statistical dispersion. Then, an exploratory factor analysis was used to validate the questionnaire.

## Preparing the questionnaire

In the first step, the English version of the CSFQ-14 was translated into Persian. In the second step, the translated version of the

questionnaire was translated again into English by an English expert. In the third step, the questionnaire was translated again into Persian by the English expert. Finally, the Persian version of the questionnaire was prepared by the researchers. In the next stage, the Persian version of the questionnaire was sent to two psychologists and three general practitioners and specialists to be examined in terms of its relatedness to sexual functioning and its understandability; in this stage, the necessary changes were made into the questionnaire and another version of that was developed. Then, in a pilot study, the CSFQ-14 was conducted on 20 volunteers from the sample, in order to detect the items that were unclear and difficult to understand. After all these stages and making all the necessary changes, the final Persian version of the CSFQ-14 was prepared.

## Findings

The final sample of this study included 101 men addicted to drugs. The average age of participants was 35 years, and the mean and standard deviation of the years of drug use were 8.5 and 7.7, respectively. 57 of the participants were addicted to opium, 13 were addicted to methamphetamine, 24 were addicted to crack, and 1 was addicted to hashish. In addition, 8 of the participants who were addicted to a drug other than opium (opium was not their main drug) stated that they had used opium too, or were still using that, 12 who were addicted to a drug other than methamphetamine reported that they had used methamphetamine too, and in this way, 6 had used crack, 2 had used hashish, and 2 had used different kinds of pills besides their main drug.

In order to determine the number of underlying factors and examine the characteristics of the 14 items of the CSFQ-14, an exploratory factor analysis was conducted on all the sample data. The results of the Bartlett's sphericity test are significant, indicating that the assumption of sphericity is rejected ( $X^2=1003.08$ ,  $df=91$ ,  $p \leq 0.0005$ ), and the measure of sampling adequacy, KMO is equal to 0.826 that shows the adequacy of sample for factor analysis.

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1													
2	0.25	1												
3	0.32	0.8	1											
4	0.13	0.66	0.66	1										
5	0.08	0.56	0.53	0.72	1									
6	0.22	0.58	0.58	0.62	0.8	1								
7	0	-0.15	-0.1	-0.16	-0.09	-0.14	1							
8	-0.05	-0.15	-0.14	-0.05	-0.1	-0.15	0.63	1						
9	-0.06	-0.15	-0.11	-0.17	-0.16	-0.21	0.72	0.68	1					
10	-0.23	-0.38	-0.35	-0.26	-0.34	-0.34	0.37	0.59	0.57	1				

11	0.28	0.51	0.52	0.56	0.58	0.56	0.06	-0.04	-0.08	-0.38	1			
12	-0.04	-0.27	-0.22	-0.18	-0.16	-0.18	0.48	0.73	0.62	0.62	-0.13	1		
13	0.06	-0.18	-0.09	-0.06	-0.13	-0.18	0.64	0.73	0.76	0.58	-0.01	0.74	1	
14	-0.04	-0.17	-0.14	-0.25	-0.29	-0.28	0.43	0.57	0.6	0.7	-0.39	0.6	0.55	1

**Table 1:** Correlations between the items of the CSFQ-14.

Table 1 shows the correlations between the items of the CSFQ-14. As you can see, the first item is totally correlated to itself, but is not highly correlated (higher than 0.50) to any of the other items; this indicates that the item 1 acts separately as a single-item factor, and will be considered as a distinct factor.

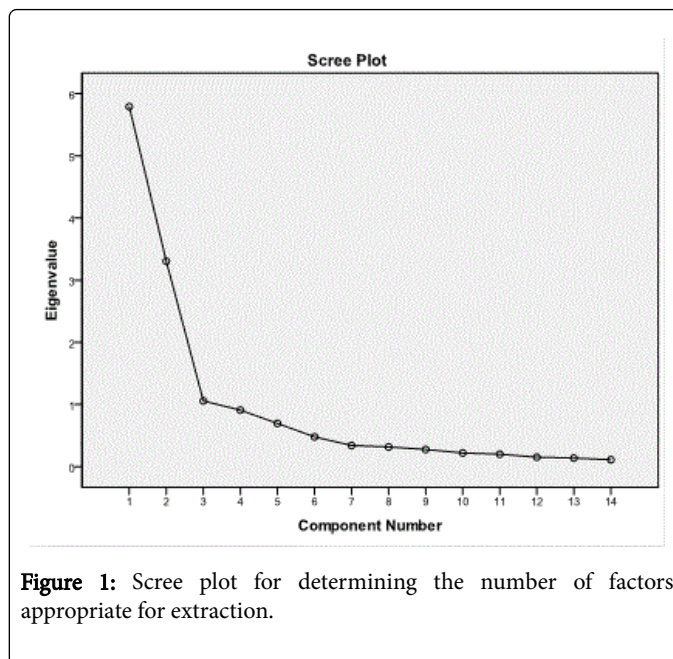
In addition, as you can see, the correlations for the items 2, 3, 4, 5, 6 and 11 are relatively high (higher than 0.50); this shows that these items together will be considered as one factor. The correlations for the items 7, 8, 9, 10, 12, 13 and 14 are also relatively high (higher than 0.50); these items together will be considered as one factor too.

Question	Initial subscription coefficient	Extraction
1	1.000	0.90
2	1.000	0.69
3	1.000	0.70
4	1.000	0.74
5	1.000	0.81
6	1.000	0.71
7	1.000	0.61
8	1.000	0.77
9	1.000	0.76
10	1.000	0.67
11	1.000	0.59
12	1.000	0.71
13	1.000	0.82
14	1.000	0.61

**Table 2:** Communalities of each item to total variance.

According to Table 2, the communalities of each item to total variance are high, therefore, questions of each factor assess exactly that specific factor and the factors are able to account for the variance of the variable.

In the primary analysis, three factors with eigenvalues higher than 1.0 were extracted. Analysis of the scree-plot also confirmed the three-factor solution. These factors together accounted for 72% of the variance of 14 items (Figure 1).



The Varimax rotation was used to simplify the factor structure. The findings showed that after factor rotation by the Varimax method, items related to all the factors were loaded on their theoretical factors. The rotated factor matrix is presented below.

Variable	Group	Average	Standard Deviation
Sexual pleasure	Normal	4.82	0.47
	Addicts	2.73	1.08
Sexual functioning variables	Normal	28.7	1.33
	Addicts	18.21	4.52
Sexual function psychological variables	Normal	26.28	1.09
	Addicts	23.55	6.45

**Table 3:** The means and standard deviations related to the comparison of sexual functioning in addicts and normal participants.

The Cronbach's alpha coefficient was used to assess the reliability of the scale. The sexual arousal-orgasm and sexual pleasure factors had Cronbach's alphas of 0.90 and 0.92, respectively. In addition, the sexual pleasure factor has a single item.

The findings related to the comparison of sexual functioning in addicts and normal people.

Table 3 shows the means and standard deviations related to the comparison of the three sexual functioning variables in addicts and normal participants. For all the three variables, the means and standard deviations of the two groups are different, and because the healthy group has higher mean scores we can conclude that they have a better and healthier sexual functioning.

Box's M	f	df1	df2	sig
410.31	67.52	6	279252.25	0.560

**Table 4:** Box's M test to test equality of variances and covariance.

The table above shows the equality of variances and covariances, therefore we can use the test ( $P \leq 0.05$ ).

Test	Value	f	df	Df error	sig
Pillai's Trace	0.80	276.15	3	276.15	0.000

**Table 5:** Multivariate analysis of variance (MANOVA) for examination of the differences between addicts and healthy participants.

Tables 4 and 5 shows the results of the multivariate analysis of variance (MANOVA) for examination of significant differences

Variable	Sum of squares-SS	df1	Mean squared-MS	f	Sig
Sexual pleasure	2838.20	1	2838.20	315.39	0.000
sexual functioning variables (Orgasm and arousal)	123507.28	1	123507.28	501.79	0.000
Sexual function psychological variables(Sexual desire)	109465.89	1	109465.89	16.67	0.000

**Table 7:** The results of a univariate ANOVA with Bonferroni correction to describe the direction of difference between addicts and normal participants in the three sexual functioning variables.

Table 7 shows the results of a univariate ANOVA with Bonferroni correction to describe the direction of difference between addicts and normal participants in the three sexual functioning variables. The results indicate that there is a significant difference between addicts and normal participants in sexual pleasure, physical, and psychological variables ( $p \leq 0.05$ ). According to the descriptive statistics presented in Table 4, we can conclude that the sexual functioning of healthy individuals is better and stronger than addicts.

## Discussion

This study had two objectives: validation of the CSFQ-14, and a comparison of sexual functioning in male addicts and healthy individuals. The first objective of the study was to examine the psychometric properties of the CSFQ-14 in people dependent on drugs and compare sexual functioning in addicts and healthy people. The results of a factor analysis for validation of the questionnaire showed that it has a three-dimensional factor structure, including A) Sexual desire (Item 1), B) Arousal-orgasm that is the physical dimension of sexual functioning (items 7, 8, 9, 10, 13, and 14), and C) sexual pleasure that is the psychological dimension of sexual functioning (items 2, 3, 4, 5, 6, and 11). The Cronbach's alpha coefficient was used to assess the reliability of the scale; the Cronbach's alpha value for the sexual desire factor was complete, because this factor is a single-item factor, and the sexual arousal and sexual pleasure factors had

between addicts and healthy participants in sexual functioning. The Pillai's Trace Test and other MANOVA test statistics show that there is a significant difference between addicts and normal participants in sexual functioning ( $P < 0.05$ ). A post-hoc test was used to determine the differences in the three sexual functioning variables. The results are shown in the table below.

Variable	f	df1	df2	Sig
Sexual pleasure	51.72	1	197	0.082
sexual functioning variables(Orgasm and arousal)	87.87	1	197	0.098
Sexual function psychological variables(Sexual desire)	150.76	1	197	0.152

**Table 6:** Levene's test for the assumption of equality of variances.

The Table 6 above shows the results of the Levene's test for the assumption of equality of variances which indicate that the variances are equal and we can use the test ( $p > 0.05$ ).

Cronbach's alphas of 0.90 and 0.92, respectively. Therefore in the present study, good psychometric properties and factor structure of the CSFQ-14 were confirmed.

In addition, a comparison of the sexual functioning in addicts and non-addicts was another objective of the present study. The results showed that the sexual functioning was significantly different in addicts and healthy individuals. These results are consistent with the results of previous studies [8,10-13,15-17]. A reason for this could be the impact of drugs on the factors involved in sexual functioning, among which the most important ones include psychological, neurological, hormonal, and arterial factors. Sexual disorders and dysfunctions are more prevalent in people addicted to drugs, because drugs have a direct impact on the aforementioned bodily systems [19]. The chemical structure of these kinds of drugs is similar to that of brain, but they don't stimulate the neurons naturally, therefore, they may cause unusual messages to circulate in the brain's neural network. Some of the other drugs like amphetamine and cocaine cause neurons to create a large amount of neurotransmitters, or prevent the normal circulation of these chemicals in the brain. These impairments lead to the creation of a very powerful message in the brain, and as a result, the communication channels of the brain are impaired. Drug use leads to genital vascular problems and sexual dysfunction. Those who are addicted to drugs or had used drugs for a long time in the past, and now have quit using drugs, are more likely to have sexual problems

than those who have never used drugs. As addiction can cause atherosclerosis in other arteries of the body, it can also narrow the penile arteries, and affect the average blood pressure in the sex organ. Therefore, it gradually leads to sexual dysfunction. Duration of drug use also have direct effects on the degree of dysfunction. Drug use impairs the movement of cilia and bronchi, and it can similarly impair the movement of sperms and cause Infertility [8,10-13,15-17,19]. Another reason for the impact of drug use on sexual desire is that after using some drugs, an amount of dopamine is released in the brain that is 2 to 10 times higher than the amount of dopamine released during the natural feeling of pleasure. The excessive feeling of pleasure resulting from drugs cause people to continue using drugs. When the brain is faced with a large amount of dopamine and other neurotransmitters, it releases less dopamine, or reduces the number of receptors to receive less signals, therefore the amount of dopamine released in the brain of a drug user decreases in an unusual manner, and the ability of the brain to feel pleasure decreases significantly. It is because of this that addicts finally feel coming down, irritated or depressed, and they can't take pleasure in activities they once enjoyed. It is in this stage that they are forced to use more drugs to have the normal levels of dopamine, and develop tolerance to the drug (National Drug Research Institute). It is obvious that sexual desire is also controlled by this brain system. Therefore, those who are not addicted to drugs, but have sexual problems, start using a drug to solve their sexual problem that is rooted in the dopamine center of the brain. Initially the amount of dopamine released in the brain is higher than the amount of dopamine released during a normal sexual intercourse. These benefits sometime cause a person to start using drugs. But as it was mentioned before, as drug use continues, the user gradually develops an addiction, and builds up a tolerance to the drug, and as result, some problems are created in the dopamine center of the brain, and this leads to problems in sexual desire (National Drug Research Institute) [9]. Glutamate is another neurotransmitter that affects the pleasure circuit of the brain and learning ability. When the optimal amount of glutamate is changed because of drug use, the brain tries to adjust to this change, and this leads to impairments in a person's capacities of perception and recognition (National Drug Research Institute).

## Conclusion

We can conclude that the CSFQ-14 is a useful instrument for assessing changes in sexual functioning, especially in addicts, and it can be used to assess sexual functioning and sexual disorders. Regarding the second objective of the study, we can conclude that some people, by advice from friends, start using drugs in order to solve their sexual problems, not knowing that not only their sexual problem won't get better, but a new problem, i.e. addiction will be added to their problems. Some of these drugs may have permanent effects on sex organs, and their effects remain even after withdrawal from substance use. It must be pointed out that these problems are not just created by addiction, but the occasional use of drugs can also create problems for marital relationships and endanger a healthy and warm marriage.

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