

# Psychometric Properties of the Persian Version of a Drug Use Temptation Scale

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## Abstract

**Background:** One of the main challenges of Methadone Maintenance treatment (MMT) centers is the patients' non-adherence to treatment process in tempting situations. This study was conducted to validate the Persian version of one of the valid questionnaires on situational drug use temptation.

**Methods:** A cross-sectional study was carried out on 150 men referring to MMT centers in Shiraz, Iran, in 2019. Data were collected using a self-administered questionnaire containing demographic data and Persian version of drug use temptation questionnaire with 20 items. The content validity was assessed by 15 psychiatrists and health education and promotion experts based on the Lawshe criteria. The reliability of the questionnaire was determined using Cronbach's alpha. The construct validity was evaluated by exploratory Principal Component Analysis (PCA) and confirmatory factor analysis. Data were analyzed using SPSS 24 and Amos 24.

**Results:** Overall, 141 individuals completed the questionnaire (response rate: 94%). The mean and standard deviation of the participants' age were  $37 \pm 7$ . The Kaiser–Meyer–Olkin test of sampling was adequate (KMO 0.913) and the Bartlett test of sphericity was significant (Chi-square 1847.65;  $p = 0.001$ ). Four factors were extracted and two items were not included in any of the factors. Goodness of fit indices of structural equation model, i.e.  $\chi^2$ ,  $\chi^2/df$ , and RMSEA were 158.504, 1.22 and 0.04, respectively, which indicated the acceptable fitness of the model.

**Conclusion:** The Persian version of the questionnaire of temptation to use drugs is suitable for use among the Iranian population.

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## Introduction

Addiction is defined by the American Society of Addiction Medicine (2011) as a primary, chronic disease involving the brain reward, motivation, memory and related circuitry, which can lead to biological, psychological, social, and spiritual problems. Addicts look for rewards or relief by using drugs and other behaviors in a forced way and usually experience relapse periods, progressive development, and death if not treated.<sup>1</sup> The United Nations Office on Drugs and Crime

(UNODC) has estimated the number of drug users to be 200 million or five percent of the world population.<sup>2</sup> The most common drugs used in Iran are opium and heroin.<sup>3</sup>

Drugs abuse causes a wide range of psychosocial and familial harms like depression, suicide, sexually transmitted diseases, AIDS, divorce, risk of premature death, violence, infectious diseases due to sharing injectable equipment, and complications of simultaneous use of alcohol.<sup>2,4</sup>

Total abstinence and harm reduction are the two

common approaches which are used to manage the opiate dependence. In total abstinence approach, reaching the goal of complete cessation of drug abuse is difficult and unsuccessful, so in most cases it is ineffective. On the other side, the purpose of harm reduction approach, which is the dominant approach today, is to reduce the physical and social consequences of addiction.<sup>5</sup> Methadone Maintenance Treatment (MMT), which was suggested by Dole and Nyswander in 1965, is one of the key components of the harm reduction approach and currently is the most common route of drug abuse maintenance treatment.<sup>5</sup> However, studies reported 20 to 90% relapse rate in addicts receiving MMT, so one of the major challenges in MMT is maintaining adherence to treatment and preventing the relapse.<sup>7</sup>

Different studies have reported several interpersonal factors for relapse and non-adherence to MMT, the most important of which being the temptation to return to substance abuse.<sup>2, 8</sup> Some studies have stated a significant negative relationship between temptation and self-esteem.<sup>9</sup> One of the main challenges to which MMT staff are faced and researchers are measuring and evaluating is the temptation to return to drug abuse. In this regard, DiClemente et al. (1994) designed a questionnaire called Alcohol Abstinence Self-Efficacy Scale (AASE) to evaluate the temptation and self-efficacy of alcohol abusers, and in 2000 Hiller et al. modified this questionnaire for drug abusers.<sup>10</sup>

As the Persian version of this questionnaire has not been validated and evaluated for its applicability in Iranian MMT centers and research purposes, this study aimed to validate the Persian version of the temptation section of this tool.

## Methods

In this cross-sectional study which was conducted in in Shiraz, Iran, in 2019, 150 clients with a history of drug abuse disorder who referred to MMT centers completed the drug use temptation questionnaire. There are different views and opinions on the sample size needed for the factor analysis test. Tinsley and Kass (1979) consider 5 to 10 participants appropriate for every variable (item) (with a maximum of 300 participants).<sup>11</sup> The subjects were selected through multistage random sampling method; at first three MMT centers were randomly selected from five government MMT centers. Each of the centers covered 150-300 clients. In the next step, considering the number of the clients in three centers, we selected 60, 60 and 30 participants through systematic random sampling.

The subjects were 20 to 50 years old men, who had been treated with MMT between one to 12 months. Data collection tool was the drug use temptation

questionnaire with 20 items. The questionnaire was first designed by DiClemente et al. (1994), known as AASE, to evaluate the self-efficacy of alcohol abusers, where they were asked to rate their temptation to drink alcohol in each situation and their confidence in coping with temptation, on a five-point Likert scale (1 = not at all and 5 = extremely).<sup>9</sup> Hiller et al. (2000) adapted this questionnaire for drug abusers. The questionnaire assesses the temptation of drug abusers in 20 high risk situations in four conceptual categories: 1) negative affect (like "When I am feeling depressed"); 2) social/positive (like "When I am being offered drugs in a social situation"); 3) physical and other concerns (like "When I have a headache"); and 4) craving and urges (like "When I experience an urge or impulse to use drugs that catches me unprepared.")<sup>10</sup>

The reported Cronbach's alpha for each of the negative affect, social/positive, physical and other concerns, and craving and urges categories was 90, 87, 72, and 83%, respectively.<sup>10</sup>

The following steps were taken to validate the Persian version of these questionnaires:

### *Step 1: Assessment of linguistic validity*

The standard translation and back-translation method was used. The original version of the questionnaire in English was translated into Persian, and then, translated back to English by an independent translator, who had no knowledge of the questionnaire. By comparing the two versions of Persian and English, some corrections were made to the Persian version. The two versions of the questionnaire are presented in Appendix 1.

### *Step 2: Assessment of the content validity of the questionnaire*

The prepared Persian version was assessed by 15 psychiatrists and health education and promotion experts for content validity; based on the Lawshe et al.'s criteria, all the items remained and no questions were removed from the questionnaire since all the items had a CVR above 0.5.<sup>12</sup>

### *Step 3: Assessment of the construct validity of the questionnaire*

In this step, exploratory factor analysis (EFA) was conducted by SPSS24 software, using principal component analysis (PCA) and Equamax rotation to identify the factors of the questionnaire.<sup>13</sup> Then, construct validity was evaluated using Confirmatory Factor Analysis (CFI) in Amos 24 and Principal Component Analysis (PCA) by examining model fit indices. Ultimately, the internal and external consistency of the questionnaire was determined using Cronbach's alpha coefficient and test-retest method (on 27 participants in 2-week interval) accordingly.

The study was conducted in accordance with the Helsinki Treaty and approved by the Ethics Committee of Shiraz University of Medical Sciences (Code of Ethics: IR.SUMS.REC.1398.836); all the participants completed the informed consent form.

## Results

Overall, 141 individuals completed the questionnaire (response rate: 94%). The mean and standard deviation of the participants' age were  $37.5 \pm 7.73$ . Table 1 shows the frequency distribution of the study participants' demographic characteristics in more detail.

The Kaiser–Meyer–Olkin test of sampling was adequate (KMO 0.913) and the Bartlett test of sphericity was significant (Chi-square 1847.65;  $P=0.001$ ), indicating that the items were appropriate

for a factor analysis. In the present study, four factors which had eigenvalues higher than one were extracted and two items 3 and 4 were not included in any of the factors (Table 2).

The extracted factors were evaluated by CFA based on goodness of fit indices of structural equation model (SEM), i.e.  $\chi^2$ ,  $\chi^2/df$  and RMSEA. Thus, the values of 158.504, 1.22 and 0.04, respectively, were obtained that showed the acceptable fitness of the model. Figure 1 shows the results of CFA of the four factors extracted in EFA.

## Discussion

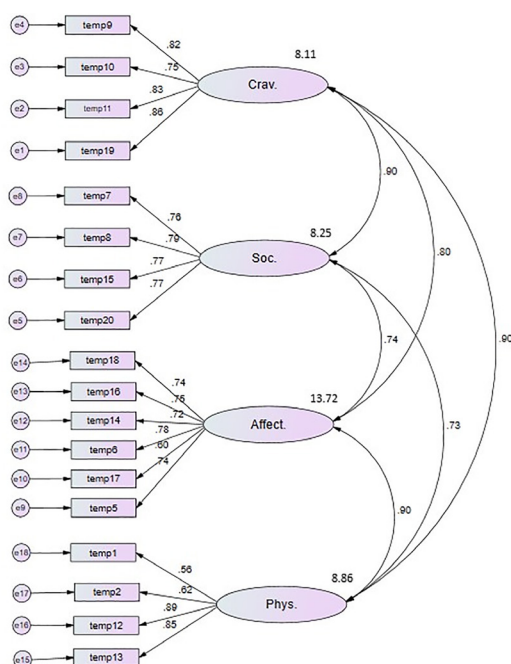
Nowadays, drug addiction is one of the main public health challenges, and MMT is one of the well-known approaches for its management, especially in opiate

**Table 1:** Frequency distribution of the participants' demographic characteristics

Variable		N	%
Marital status	Married	69	48.9
	Single	61	43.3
	Divorced	11	7.8
Who they live with?	Family	120	85.0
	Friends	7	5.0
	Alone	15	10.0
Job status	Employed (fulltime)	42	30.0
	Employed ( regular part time)	24	17.0
	Employed (irregular part time)	33	23.0
	Unemployed	42	30.0
Substance they used	Opium	62	44.0
	Heroin	26	18.5
	Opium+ heroin	37	26.5
	Others	16	11.0
Rout of substance use	Oral	28	19.5
	Inhalation	85	59.0
	Both (Oral and inhalation)	31	21.5

**Table 2:** Rotated Component Matrix for the Persian Version of temptation to drug abuse questionnaire, 18 items

Fctor	Item N	Factors Loading	% of Variance	Chronbach $\alpha$	External validity (r, p)
Craving /urges	9	0.610	64.62	0.890	0.71, <0.001
	10	0.687			
	11	0.593			
	19	0.575			
Social situations	7	0.712	8.28	0.856	0.76, <0.001
	8	0.660			
	15	0.673			
	20	0.679			
Negative affect	5	0.522	7.77	0.863	0.70, <0.001
	6	0.593			
	14	0.642			
	16	0.723			
	17	0.527			
	18	0.824			
Physical concerns	1	0.841	5.76	0.826	0.65, <0.001
	2	0.730			
	12	0.542			
	13	0.514			



**Figure 1:** Path Diagram for the Confirmatory Factor Analysis of four factors of the temptation of drug abuse questionnaire, 18 items

and heroin addictions.<sup>14</sup> However, one of the main challenges of MMT centers is patients' non-adherence to the treatment process and one of the most significant predictors of non-adherence is the temptation to use drugs in different situations.<sup>7, 15</sup> Having a valid tool for measuring the temptation of those visiting MMT centers can be very helpful in designing a treatment plan and evaluating the effect of therapeutic interventions.

According to the results, the Persian version of the temptation to use drugs presented by Hiller et al. (2000) is moderately applicable and psychometrically valid for use in Iranian society. The internal validity of the questionnaire for all four extracted factors was higher than 0.80 that was in line with the English version of the questionnaire.<sup>10</sup> KMO and Bartlett's Test of Sphericity were 0.913 and 1847.65, respectively that showed the suitability of the sample size for EFA and appropriate correlation between the factors.

In the study, four factors were extracted similar to the original version of the questionnaire although the items within the factors differed and two items were omitted from the questionnaire. Model goodness-of-fit indices in CFA showed the model fits similar to Hiller et al.'s (2000) questionnaire.

Overall, the results showed the proper validity of the questionnaire for use in Iranian society. In similar studies, Gloza et al. (2015) used AASE on 215 undergraduate students in Ghana, and extracted only one factor<sup>16</sup> and McKiernan et al. (2011) extracted four factors similar to those of Hiller in the 12-item version of the questionnaire,<sup>17</sup> but in the present study, although four factors were extracted, they differed

from the original version. For instance, the items in each factor differed and the two items were omitted. The difference between the cultures of Iranian and English-speaking countries may be the main reason for the difference between the results of this study and the original one. For instance, "When I am feeling depressed," was omitted from the questionnaire probably because the participants did not have a clear understanding of the word depression. Thus, it is suggested that scholars use clearer terms in this case in other versions. Moreover, concerning the item "When I am on vacation and want to relax," it can be stated that the participants could not imagine themselves well in such a situation as vacation is not so popular among drug addicts in Iran.

The limitations of this study were its limited sample size and its questionable generalizability to women drug abusers and Persian speakers beyond the Iranian community, so further studies are recommended to be conducted in this fields.

## Conclusion

The results showed that the Persian version of the questionnaire of temptation to use drugs is suitable for use among the Iranian population and it could be used to provide health care services in MMT centers and increase adherence to treatment in those admitted to these centers.

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**Conflict of Interest:** None declared.

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## Appendix 1: The English and Persian versions of the questionnaire

	English version	Persian version
1	When I am in agony because of stopping or withdrawing from drug use.	وقتی که به دلیل ترک مواد درد دارم.
2	When I have a headache.	وقتی که سر درد دارم.
3	When I am feeling depressed. (deleted)	وقتی که احساس می کنم افسرده شده ام (حذف شد)
4	When I am on vacation and want to relax(deleted)	(وقتی که در تعطیلات هستم و می خواهم آرام بشوم (حذف شد
5	When I am concerned about someone.	وقتی که برای کسی نگران هستم.
6	When I am worried.	وقتی که پریشان هستم.
7	When I have the urge to use drugs to see what happens.	وقتی که خیلی کنجکاو (تمایل دارم) مواد مصرف کنم تا ببینم چه اتفاقی می افتد.
8	When I am being offered drugs in a social situation.	وقتی که مواد مخدر در یک میهمانی یا جمع دوستان پیشنهاد می شود.
9	When I dream about using drugs.	وقتی که من در مورد استفاده از مواد مخدر رویا پردازی می کنم.
10	When I want to test my will power over using drugs.	وقتی که می خواهم قدرت اراده ام را با استفاده از مواد مخدر امتحان کنم.
11	When I am feeling a physical need or craving for drugs.	وقتی که احساس نیاز فیزیکی و یا اشتیاق به مواد مخدر دارم.
12	When I am physically tired.	وقتی از نظر جسمی خسته شدم.
13	When I am experiencing some physical pain or injury.	وقتی که درد یا آسیب فیزیکی را تجربه می کنم.
14	When I feel like blowing up because of frustration.	هنگامی که از شدت نا امیدی احساس می کنم به آخر خط رسیده ام.
15	When I see others using drugs at a bar or a party.	وقتی که می بینم دیگران از مواد مخدر در مهمانی استفاده می کنند.
16	When I sense everything is going wrong for me.	وقتی که احساس می کنم کارها مطابق میل من پیش نمی رود.
17	When people I used to use drugs with encourage me to use drugs.	وقتی که افرادی که قبلا با آنها مواد مصرف می کردم مرا تشویق به استفاده از مواد مخدر می کنند.
18	When I am feeling angry inside.	وقتی که احساس می کنم از خودم عصبانی هستم.
19	When I experience an urge or impulse to use drugs that catches me unprepared.	وقتی که ناگهان احساس تمایل یا نیاز شدید به مصرف مواد می کنم.
20	When I am excited or celebrating with others.	وقتی هیجان زده می شوم یا با دیگران جشن می گیرم.