

## Drug Craving Terminology among Opiate Dependents; A Mixed Method Study

Masoomah Maarefvand, PhD<sup>1</sup>  
Hamid Reza Ghiasvand, MA<sup>2</sup>  
Hamed Ekhtiari, MD<sup>3,4</sup>

1 Department of Social Work,  
University of Social Welfare and  
Rehabilitation Sciences, Tehran,  
Iran.

2 Department of Educational  
Psychology, Islamic Azad  
University, Saveh, Iran.

3 Neurocognitive Laboratory,  
Iranian National Center for  
Addiction Studies, Tehran  
University of Medical Sciences,  
Tehran, Iran.

4 Translational Neuroscience  
Program, Iranian Institute for  
Cognitive Sciences Studies  
(ICSS).

### Corresponding author:

Hamed Ekhtiari,  
Neurocognitive Laboratory,  
Iranian National Center for  
Addiction Studies, Tehran  
University of Medical Sciences,  
Tehran, Iran.  
Tel: +98 21 88802065  
Fax: +98 21 66964436  
Email:  
h\_ekhtiari@razi.tums.ac.ir

**Objective:** Drug craving is defined as an urge to continue substance abuse. Drug dependents use different terms to express their subjective feeling of craving. This study was an attempt to generate an understanding of craving terminology among different groups of Persian speaking Iranian opiate dependents.

**Method:** Terms used for the meaning of drug craving were listed by 36 ex-opiate dependents in focus group discussion meetings in the first phase of the study. These terms were composed from Craving Terms Questionnaire. In the second phase, 120 subjects in 3 groups of opiate dependents and a group of Current Opiate Abusers rated usage frequency of each term in the questionnaire under a Twelve-Step Program, Methadone Maintenance, and Other Abstinence-based Programs.

**Results:** Eighty nine terms were categorized in stimulation and triggering, attention bias and obsession, decision making difficulty, information processing impairment, withdrawal induction, drug euphoric experience, mental urge, motor control problem, negative valancing and stigmatizing. Terms for the three categories of mental urge, attention bias and obsession and motor control problem were used more than others. Patients in Methadone Maintenance Treatment (MMT) group used different categories of craving terms in comparison to other groups. Abstinent cases reported higher total score for craving terms in comparison to other groups in Twelve-Step Program and other abstinence-based programs.

**Conclusion:** Each craving-related term is associated with some aspects of the multidimensional concept of craving. A drug-craving thesaurus could provide a better understanding of craving nature from a drug dependent point of view. There are differences among abstinence vs. maintenance based treated opiate dependents in using craving terms. Addiction therapists will benefit from accessing drug dependents' lexicon to assess and create therapeutic alliance with their clients.

**Key words:** Addiction; craving, opiates; Persian and terminology

*Iran J Psychiatry 2013; 8:2: 97-103*

Craving is believed to play a main role in the substance abuse and relapse (1, 2 and 3). In spite of the importance of craving in both treatment and relapse, there is still no clear, agreed-upon definition for it (4).

In the context of drug addiction, various descriptions have been suggested for "craving": "intensely wanting" (2), "profound desire" (5), "a subjective state associated with drug addiction", with poorly understood characteristics and determinants (5) and to want something with such a strong sense of urgency that it is difficult to keep thoughts focused on anything other than the object of the craving. "An individual, who is in the midst of a craving episode will go out of his way to obtain what is craved" (6). 64% of 25 languages studied by Hormes and Rozin (6) had a "craving" synonym, and based on the

native speaker, only 17% of 20 languages lexicalize craving when there is a synonym. They studied related words, such as love, like, urge, desire, adore and addiction but there are some terms for craving which are applied in addict's subculture and never documented and entered in to dictionaries. Cromwell (7) studied slang usage in addict subculture. He believed that in the typical addict subculture, this slang plays an important role by providing communication among its members. However, terms, phrases and slangs that are specific to drug craving have not been studied well in different addict subcultures and languages.

In clinical aspects, it is difficult for a counselor to understand how an addict experience drug craving. Providing a list of craving terms helps counselors to have a better understanding of addict's subculture in their own terms. This understanding will have

potential benefits for better clinical assessment and making therapeutic alliance. The range of terms used as synonyms for a concept in a language shows the importance and semantic nature of that concept. In cognitive aspects, craving lexicon will be helpful to prepare a model on the implicit and explicit cognitive processes that underlie drug craving. It is believed that better insight into the craving concept will contribute to the treatment of substance abuse and relapse prevention (4, 8- 12) and craving measurement (13, 14).

To our best knowledge, there is no published report on the range of terms used as synonyms for drug craving among drug dependents in different groups or languages. This study was an attempt to generate an understanding of the lexicon used by Persian speaking Iranian opiate addicts to show their craving.

## Material and Methods

The study was designed in qualitative and quantitative phases. Craving terms used among drug addicts were listed by ex-opiate dependents in the qualitative phase. In the quantitative phase, usage frequency of each term was rated by addicts and ex-opiate dependents .

### *First Phase: Qualitative Study*

Thirty six ex-opiate users participated in 3 Focus Group Discussion (FGD), and brainstormed about craving terms used in addiction subculture in Iran. FGD meetings stopped when no new term was identified by participants, and data saturation was confirmed by authors.

FGD meetings were recorded. To achieve an overall understanding of all transcripts, they were read several times. Initial analysis of the transcripts resulted in some themes that originated from the FGD and intent of the study. Authors made repeated comparisons and modifications to achieve similarities in categories.

### *Trustworthiness*

To ensure the rigor of this study, the four principles underlying trustworthiness in qualitative research were applied as described by Lincoln and Guba (15): credibility, which parallels internal validity; transferability, which parallels generalizability; dependability, which parallels reliability; and, confirmability, which parallels objectivity.

Clarification of researcher biases was another strategy, which involved the researchers presenting their prior understandings and preconceptions that might influence data collection and analysis. Bracketing meant putting the authors' knowledge aside to see the FGD meetings with fresh eyes. To maximize the credibility, researches clarified all they knew about craving terms before the FGD meetings and used their experience as a guide to keep the craving in focus by being aware and asking analytic questions such as "what is your experience ...". When no more essences of craving terms were shown in the FGD meetings, it was taken as a sign of saturation.

To further strengthen the dependability, the analysis was performed concurrently and discussed by two of the authors who had different degrees of closeness to the FGDs. This should have given a more comprehensive interpretation and description of the terms.

To achieve confirmability, "member checking" was used to present findings to research participants for their feedback on how well the findings fit their experience. Moreover, all authors discussed the findings continuously during the analytic process to ensure that the findings were grounded in the FGDs .

### *Second Phase: Quantitative Study*

One hundred twenty persons (90 ex- opiate users and 30 substance abusers) answered the Basic Demographic and Substance Abuse Questionnaire, and the newly designed Craving Terms Questionnaire (CTQ) in 4 groups of addicts in Twelve-Step Program (TSP), Methadone Maintenance Treatment (MMT), Other Abstinence-based Programs (OAP) and Current Opiate Abuser (COA).

### *Basic Demographics and Substance Abuse Questionnaire:*

A structured questionnaire was developed based on demographics and characters related to ex- opiate users' life such as their history of drug abuse, relapse, and abstinence (table 1).

### *Craving Terms Questionnaire (CTQ):*

Ninety-nine listed terms of craving in FGDs were used to develop CTQ. Terms were randomly arranged in 3 sheets (A, B, and C), and sheets were randomly distributed among the 3 groups of participants (ABO, BCA, CAB groups) to balance the position of each term in the distributed questionnaire and avoid the effect of fatigue, previous exposures and expertise of participants on rating the terms. Participants rated each term, using a 6-point Likert scale (1 = never to 6= very much).

### *Analysis Methods*

For statistical analysis, t test for independent groups was used to compare the mean score of categories, and correlation and regression were used to study the association between demographic characters, and craving terminology used by each group.

## Result

Those terms which had not been used (10 terms, frequency less than 5%) were removed from the list, and 89 craving terms were categorized. Authors reviewed the terms in different times and discussed craving as a cognitive process, and then categorized the terms as follows:

Stimulation and Triggering (ST): Craving is described as an act or event that serves as a stimulus that initiates or precipitates the drug use and lapse process.

Attention Bias and Obsession (ABO): Craving is represented as attention bias, attraction and long time engagement.

Decision Making Difficulty (DMD): Craving is assimilated to a situation in which a person must select between two options (to use or not to use) and experience serious difficulty in making a decision between them.

Information Processing Impairment (IPI): Craving is described as a state wherein the subject cannot process the input information to see possible options. This category could be considered as the consequence of DMD category.

Withdrawal Induction (WI): Craving is represented by terms that belong to opiate withdrawal symptoms.

Drug Euphoric Experience (DEE): All terms metaphorically expressed pleasure, euphoria and intoxication symptoms of opiate use.

Mental Urge (MU): Craving is expressed as strong desire, eager and severe tendency to use.

Motor Control Problem (MCP): Terms were used to show disability or inability to exert motor control over mental urges that were categorized here.

Negative Valancing and Stigmatizing (NVS): All terms used to stigmatize craving and emphasize negative characters of this phenomenon were categorized here.

The detailed list of categorized words is demonstrated in table (2). Eighty nine craving terms in 9 categories of Stimulation and Triggering (ST), Attention Bias and

Obsession (ABO), Decision Making Difficulty (DMD), Information Processing Impairment (IPI), Withdrawal Induction (WI), Mental Urge (MU), Motor Control Problem (MCP), Negative Valancing and Stigmatizing (NVS) and Drug Euphoric Experience (DEE) have been illustrated in table 2. Short explanations were used for translation of some terms because there was no exact equivalent for some slang in English.

To evaluate the differences between the four groups of participants in rating craving terms, independent samples t-test was run between the scores of the participants in categories of craving terms. All significant differences have been reported in table 3.

TSP and OAP groups (treated opiate dependents in abstinence based programs) were significantly different from MMT group in scoring categories for craving terms. TSP group reported the highest (Mean=184) and MMT group reported the lowest (Mean=96.73) total scores for craving terms. Also, there was a significant difference between COA and TSP groups in using craving terms in DMD category. More details of mean scores for all and each category in every treatment group have been illustrated in table 4.

**Table 1: Demographic Profile (Mean (±Standard Deviation) or Frequency (Percent %)) of Participants; Twelve-Step Program (TSP), Methadone Maintenance Treatment (MMT), Other Abstinence-based Programs (OAP) and Current Opiate Abuser (COA)**

Variables	All (n=120)	TSP (n=30)	MMT (n=30)	OAP (n=30)	COA (n=30)
<b>Age (years)</b>	37.03(±10.41)	36.60(±10.46)	33.90(±8.60)	36.10(±10.18)	41.50(±11.21)
20-35	63(52.5%)	16(13.3%)	21(17.5%)	14(11.7%)	12(10.0%)
36-50	41(34.2%)	10(8.4%)	7(5.8%)	13(10.8%)	11(9.2%)
51-65	16(13.3%)	4(3.3%)	2(1.7%)	3(2.5%)	7(5.8%)
<b>Marital Status</b>					
Married	54(45.0%)	11(9.2%)	14(11.7%)	20(16.7%)	9(7.5%)
Single	66(55.0%)	19(15.8%)	16(13.4%)	10(9.2%)	21(17.5%)
<b>Education (years)</b>	10.69(±3.60)	10.20(±3.97)	11.50(±3.34)	12.03(±2.61)	9.03(±3.72)
0-5	12(10%)	5(11.3%)	3(2.5%)	0(0%)	4(3.3%)
6-8	29(24.2%)	8(6.6%)	3(2.5%)	6(5.0%)	12(10.0%)
9-12	53(44.2%)	10(8.3%)	16(13.3%)	15(12.5%)	12(10.0%)
13-18	26(21.7%)	7(5.8%)	8(6.7%)	9(7.5%)	2(1.7%)
<b>Drug Use Onset (year old)</b>	21.26(±6.97)	19.60(±7.01)	22.23(±6.12)	21.13(±6.62)	22.06(±7.98)
6-18	51 (42.5%)	19(15.8%)	10(8.3%)	11(9.2%)	11(9.2%)
19-30	59(49.2%)	9(7.5%)	17(14.2%)	17(14.2%)	16(13.3%)
31-50	10(8.3%)	2(1.7%)	3(2.5%)	2(1.7%)	3(2.5%)
<b>Addiction Duration (year)</b>	13.43(±9.71)	14.967(±9.22)	9.47(±7.11)	11.93(±9.17)	17.33(±11.42)
1-10	61(50.8%)	10(8.4%)	20(16.7%)	20(16.7%)	11(9.2%)
11-20	36(30.0%)	14(11.6%)	8(6.7%)	5(4.2%)	9(7.5%)
21-30	13(10.8%)	4(3.4%)	1(8%)	2(1.7%)	6(5.0%)
31-43	10(8.3)	2(1.6%)	1(8%)	3(2.5%)	4(3.3%)
<b>Drug Abstinence Duration (days)</b>	259.98(±487.91)	746.10(±695.62)	266.97(±345.24)	26.83(±55.85)	.00
0-90	74(61.7%)	6(5.0%)	10(8.3%)	28(23.3%)	30(25.0%)
91-180	13(10.8%)	3(2.5%)	10(8.3%)	0(0%)	0(0%)
181-365	7(5.8%)	2(1.6%)	3(2.5%)	2(1.7%)	0(0%)
≥366	26(21.7%)	19(15.8%)	7(5.8%)	0(0%)	0(0%)
<b>Relapse Times</b>	12.14(±19.14)	14.97(±15.41)	9.33(±20.07)	8.23(±11.58)	16.03(±26.10)
0	14(11.7%)	3(2.5%)	7(5.8%)	4(3.3%)	0(0%)
1-5	53(44.2%)	8(6.6%)	15(12.5%)	16(13.3%)	14(11.7%)
6-10	23(19.2%)	7(5.8%)	3(2.5%)	4(3.3%)	9(7.5%)
≥ 11	30(30.0%)	12(10.0%)	5(4.2%)	6(5.0%)	7(5.8%)

Table 2: Categories of Craving Terms (in Persian and English) and Frequency and Mean Score of Each Term

Categories	Terms		Frequency (Yes %)	Mean Score (0-6)	Categories	Terms		Frequency (Yes %)	Mean Score (0-6)
	Persian	English				Persian	English		
1. Stimulation and Triggering	محرک قوی	Severe stimulation	33.33	1.43	3. Decision Making Difficulty	گه گیجه	I am missed up	50.83	2.44
	عروس هزار چهره	Mille-face bride	25.83	1.23		توی بز و نزن گیر کردن	Even use or not	46.67	2.04
	فکر زودگذر	Transient thought	25.83	1.22		می دانم و نمی دانم	Knowing & not knowing	34.17	1.44
	تاکسی خالی	Empty taxi	18.33	1.10		برو و بیا	Coming & going	30.00	1.40
	احساس توانایی در کنترل	Feeling the ability of control	25.00	1.09		خیر و شر	Blessing & Evil	30.00	1.34
	مجسمه خیالی	Imaginary statue	8.33	0.41		راه میانبر	Shortcut	29.17	1.28
	هیزم زیر دیگ	To push	5.83	0.31		تعارض بین زدن و نزدن	Conflict between using or not	25.83	1.17
2. Attention Bias and Obsession	سیخ زدن	Nailing	55.83	3.03	4. Information Processing Impairment	راه سوم	Third way	27.50	1.12
	فکر زدن	Thought of using	65.00	2.83		انتخاب بین زشت و زیبا	Selection between beautiful & ugly	23.33	1.03
	تومخی	Walking on my nerve	49.17	2.39		مخم گوزیده	My brain is confused	68.33	3.55
	دغدغه مصرف	Apprehension of use	47.50	2.27		"مخم هنگ کرده"	I can't think	63.33	3.29
	تحریک شدید	Severe instigation	33.33	1.58		قفل کردن مخ	My mind is blind	51.67	2.57
	"داره زوق می زنه"	Itching	29.17	1.36		کله را اجاره دادن	To rent the brain	25.00	1.35
	پیام بازرگانی	Commercial advertisement	25.83	1.19		(کلم پیچ) پیچیدن کله	Confusing	27.50	1.32
	وسواس فکری	Fussy thought	25.00	1.17		گیر کردن توی چراها	Standing on whys	27.50	1.19
	فکر سمج	Cheeky thought	17.50	0.97		"مخم گچ است"	I feel stupid	13.33	0.79
	فکر مخرب	Destructive thought	24.17	0.96		"هیچی نمی گیرم، کله ام پر است"	My head is full, I understand nothing	15.00	0.77
5. Withdrawal Induction	بازی افکار	Playing with thoughts	19.17	0.91	"میخ توش نمی ره"	Nothing effects it	5.83	0.49	
	رژه	Parade	18.33	0.85	بالا و پایین شدن	Upping & down	50.00	2.28	
	اشتغال ذهنی	Busy mind	16.67	0.83	جذر و مدهای روحی	Mental tide	7.50	0.38	
	"مورچه ها راه افتادند"	Ants are walking	15.83	0.78					
	یک فکر قوی بدون کنترل	A Strong thought without control	14.17	0.73					
	نوک زدن	To peck	14.17	0.59					
	زیرنویس	Footnote	10.83	0.59					
	قدم آهسته	Walking slowly	10.83	0.53					

Table 2(Continued): Categories of Craving Terms (in Persian and English) and Frequency and Mean Score of Each Term

Categories	Terms	Frequency (Yes %)	Mean Score (0-6)	Categories	Terms	Frequency (Yes %)	Mean Score (0-6)		
<b>6. Drug Euphoric Experience</b>	<b>Persian</b>	<b>English</b>		<b>8. Motor Control Problem</b>	<b>Persian</b>	<b>English</b>			
	بود بود	A slang for sexual desire	43.33		2.39	"زد بالا"	Turn on	82.50	4.08
	"باز آبم راه افتاد"	A slang for ejaculation	48.33		2.33	کم آوردن	Missing	80.83	3.84
	زنگ تفریح	Recreation time	41.67		1.99	به ترتر افتادن	Feeling weak	69.17	3.24
<b>7. Mental Urge</b>	قلقلک	Tickling	41.67	1.89	حال بدی	Bad situation	68.33	3.13	
	میل خوب	Tempting			"ما را بی خیال شدند"	Nobody cares about us	52.50	2.46	
	بین دو نیمه	Good desire	25.00	1.04	"بی خیال پاکی"	Let it go	50.83	2.38	
	طالب شدن	Halftime	16.67	0.87	مخ تخمی شده	My mind is missed up	32.50	1.63	
	هوس	Wanting	91.67	4.46	سلاح قدرتمند	Strong weapon	19.17	0.93	
	"باز کرمش افتاد"	Violent desire	93.33	4.26	مالک	Owner-possessor	9.17	0.39	
	کمر سفت شدن	Trigging	83.33	4.04	یار نقاط ضعف	The friend of rainy day (supporter)	5.83	0.35	
	وول وول	I feel horny	66.67	3.58	اسیر	Hostage	46.67	2.18	
	کرم کشی	Tickling	66.67	3.40	سرطان	Cancer	46.67	1.89	
	میل شدید مصرف	Horny	65.00	3.13	مخم پروده	My brain is sick (menses)	28.33	1.83	
	مور مور	Severe tendency to use	58.33	2.60	مهمان ناخوانده	Uninvited guest	38.66	1.69	
	طمع	Tickling	53.33	2.51	فکر منفی	Negative mind	43.33	1.64	
اشتهای مصرف	Greed	50.83	2.22	مخم عنی شده	My mind is fucked up	22.50	1.34		
ویار	Appetite of using	41.67	1.93	نفس اماره	Concupiscence	28.33	1.28		
عطش داشتن	Pica	26.67	1.49	خلاء معنوی	Spiritual void	25.00	1.13		
خارشی	Dipsomania	28.33	1.37	عن شه توش	Fucked up	16.67	0.91		
"کرم آمد در آبادی"	Itching	25.00	1.19	تجربه مخرب	Destructive experience	17.50	0.82		
تمایلات کاذب	Worm appears	24.17	1.18	شیطانک	Nasty	10.83	0.71		
تمایل سوزنده	Pseudo-desire	11.67	0.64	قطب منفی	Negative polar	9.17	0.53		
	Burning desire	5.83	0.28	لحظه بحران آفرین	Crisis moment	10.00	0.40		

**Table 3: Differences between Four Groups of Addicts' Score of Categories of Craving Terms**

<b>MMT</b>	IPI (t=3.361, df=58, P=.005)	
	DMD (t=3.413, df=58, P=.000)	
	DEE (t=3.433, df=58, P=.044)	
	ABO (t=2.903, df=58, P=.009)	
	NVS (t=3.382, df=58, P=.001)	
	ST (t=4.003, df=58, P=.000)	
	Total (t=3.827, df=58, P=0.012)	
<b>OAP</b>		IPI (t=-3.319, df=58, P=.032)
		DMD (t=-3.524, df=58, P=.020)
		ABO (t=-2.854, df=58, P=.027)
		NVS (t=-3.572, df=58, P=.008)
		ST (t=-2.517, df=58, P=.004)
<b>COA</b>	DMD (t=2.063, df=58, P=.007)	NVS (t=-2.105, df=58, P=.004)
		ST (t=-2.092, df=58, P=.049)
<b>TSP</b>		<b>MMT</b>
		<b>OAP</b>

**Table 4: Ratings on Craving Terms Categories and Total Scores in Four Study Groups**

Last Treatment		Categories									Total
		MCP	IPI	DMD	DEE	MU	ABO	NVS	WI	ST	
<b>TSP</b>	Mean	25.77	21.97	18.03	12.90	44.60	30.77	21.60	3.93	10.87	184.00
	Std.	9.92	15.94	14.88	9.41	19.32	25.44	17.58	2.70	9.31	108.23
<b>MMT</b>	Mean	15.67	11.13	7.60	5.93	29.23	15.50	9.43	1.40	3.37	96.73
	Std.	8.58	7.58	7.67	5.91	16.02	12.22	8.90	2.16	4.30	62.32
<b>OAP</b>	Mean	22.97	18.97	15.93	13.53	41.70	27.53	20.23	2.80	7.03	161.30
	Std.	9.31	10.47	10.44	7.43	15.48	19.60	13.96	2.66	6.72	78.99
<b>COA</b>	Mean	18.83	15.73	11.43	9.70	37.50	20.37	14.13	2.53	5.87	131.27
	Std.	9.17	10.49	9.25	8.57	17.55	17.78	13.91	2.24	6.89	79.08
<b>All subjects</b>	Mean	20.81	16.95	13.25	10.52	38.26	23.54	16.35	2.67	6.78	143.33
	Std.	9.97	12.07	11.50	8.41	17.91	20.02	14.61	2.58	7.46	89.04

**Discussion**

Drug abusers use special in-group names for most aspects of drug abuse. This paper attempts to find and categorize Persian terms used to express drug craving among Iranian opiate abusers subculture, and to investigate the differences between different treatment groups in using these craving-related terms.

Ninety nine terms for craving were found in Iranian opiate abusers' subculture in three main groups of treatment programs: Twelve-Step Program (TSP), Methadone Maintenance Treatment (MMT), and Other Abstinence-based Programs (OAP) and also a group of Current Opiate Abusers (COA). Stimulation and Triggering (ST), Attention Bias and Obsession (ABO), Decision Making Difficulty (DMD), Information Processing Impairment (IPI), Withdrawal Induction (WI), Drug Euphoric Experience (DEE), Mental Urge (MU), Motor Control Problem (MCP), and Negative Valancing and Stigmatizing (NVS) were 9 categories of craving terms.

All groups had terms for craving, but there were differences among abstinence vs. maintenance based treated opiate dependents in using craving terms; TSP group reported more frequent usage and broader range of craving terms. They scored significantly higher than MMT group in craving terms. Also, there was a significant difference between TSP and COA groups in using craving terms in DMD category.

Reporting the most variety and frequency of terms for craving by treated opiate dependents in abstinence

based programs may be a sign of its importance in their treatment process. Therefore, training craving prevention and craving reduction strategies for the mentioned group should be essential for their abstinence.

Most of the treated opiate dependents in abstinence-based programs participate in 12-step meetings in Iran. These meetings could be a setting to exchange various craving terms and to create such a rich list of craving terms. Absence of in-treatment network in MMT group could be a reason for the shortest list of craving terms. Higher levels of craving experiences among those who are completely opiate abstinent could be another potential explanation for this difference.

Familiarity with clients' subculture will improve clinical treatment and provide a better understanding of messages received from the clients. Drug abuse counselors and therapists will benefit from accessing drug dependents lexicon to make therapeutic alliance with their clients. Investigating the variety and frequency of using craving terms could help drug abuse counselors and therapists to estimate the importance and danger of craving in treating their clients.

Craving is a progressive process, and using each term could show an especial phase of craving. Also, each craving-related term is associated with some aspects of the multidimensional craving concept. Developing a model for this process and terms of craving in each phase and using craving terms to develop an instrument for craving measurement could be investigated in

future studies. In this study, authors categorized the craving terms according to the cognitive decision making process and recommend further studies on cognitive process of craving.

### Limitations

Most of craving terms in this study are used as slangs in Iranian drug abuse subculture; and translating them to English was a challenging phase for authors. It was very difficult to find exact English equivalent translations for Persian craving terms in drug subculture. In some cases, the authors used explanations for some terms because they could not find precise equivalent for them.

### Conclusion

This study highlights craving-related terms as a part of addiction subculture. Abstinence based treated opiate dependents vs. maintenance based use the most variety and frequency of these terms. Addiction therapists familiarity with craving-related terms will provide a better understanding of addicts' subculture in their own terms and improve clinical treatment.

### Acknowledgements

We would like to thank two Non Governmental Organizations (NGOs); Rebirth Society and Congress 60 and their direct managers Mr. Abbas Deylamizadeh and Mr. Hossein Dejakam for helping us to run FGDs and sampling. We would also like to thank the FGD participants who helped us kindly during the process of the first phase of the study. Authors declare no conflict of interests.

### References

1. Ludwig AM, Wikler A, Stark LH. The First Drink: Psychobiological Aspects of Craving. *Archives of general psychiatry* 1974; 30: 539-547.
2. Robinson TE, Berridge KC. The Neural Basis of Drug Craving: An Incentive-Sensitization Theory of Addiction. *Brain Res Brain Res Rev* 1993; 18: 247-291.
3. Witkiewitz K, Bowen S, Douglas H, Hsu SH. Mindfulness-Based Relapse Prevention for Substance Craving. *ADDIC BEHAV* 2013; 38: 1563-1571.
4. Drummond DC. Theories of Drug Craving, Ancient and Modern. *ADDICTION* 2001; 96: 33-46.
5. Childress AR, Mozley PD, McElgin W, Fitzgerald J, Reivich M and O'Brien CP. Limbic Activation During Cue-Induced Cocaine Craving. *Am J Psychiatry*
6. Killen JD, Fortmann SP. Craving Is Associated with Smoking Relapse: Findings from Three Prospective Studies. *Exp Clin Psychopharmacol* 1997; 5: 137-142.
7. 7-Hormes JM, Rozin P. Does "Craving" Carve Nature at the Joints? Absence of a Synonym for Craving in Many Languages. *Addict Behav* 2010; 35: 459-463.
8. Cromwell PF. Slang Usage in the Addict Subculture. *CRIME & DELINQUENCY* 1970; 16: 75-78.
9. Littleton J. Acamprosate in Alcohol Dependence: How Does It Work? *Addiction* 1995; 90: 1179-1188.
10. O'Brien CP. Anticraving Medications for Relapse Prevention: A Possible New Class of Psychoactive Medications. *The American journal of psychiatry* 2005; 162: 1423-1431.
11. Ooteman W, Koeter MW, Vserheul R, Schippers GM, van den Brink W. Measuring Craving: An Attempt to Connect Subjective Craving with Cue Reactivity. *Alcoholism, clinical and experimental research* 2006; 30: 57-69.
12. Lee NK, Pohlman S, Baker A, Ferris J, Kay-Lambkin F. It's the Thought That Counts: Craving Metacognitions and Their Role in Abstinence from Methamphetamine Use. *Journal of substance abuse treatment* 2010; 38: 245-250.
13. Ekhtiari H, Alam-Mehrjerdi Z, Hassani-Abharian P, Nouri M, Farnam R, Mokri A. Examination and Evaluation of Craving-Inductive Verbal Cues among Persian-Speaking Methamphetamine Abusers. *Adv Cogn Sci* 2010; 12: 69-82.
14. Maarefvand M, Hasani-Abharian P, Ekhtiari P. Measurement of Drug Craving in Persian Speaking Subjects; a Review on Current Experiences and Future Perspectives. *Zahedan J Res Med Sci (ZJRMS)* 2012; 14: 1-7.
15. Lincoln YS, Guba EG. *Naturalistic Inquiry*. London: SAGE; 1985.