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# The effect of self-compassion training on craving and self-efficacy in female patients with methamphetamine dependence: a one-year follow-up

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## ABSTRACT

**Background:** The use of methamphetamine has had arising trend among Iranian women in recent years. The present study was conducted to assess the effect of self-compassion training on craving and self-efficacy in female patients with methamphetamine users and the rate of relapse over a one-year follow-up in 2017–2018 in the city of Kermanshah, Iran.

**Methods:** This study was a randomized, controlled, clinical trial. A total of 40 female patients diagnosed with methamphetamine dependency were randomly assigned either to self-compassion training and control groups. Both groups were assessed before and one month after the educational intervention using craving and self-efficacy questionnaires. The groups were followed-up in terms of methamphetamine use relapse one year after the intervention.

**Results:** After the intervention, the mean craving score decreased (51.82) while the mean self-efficacy score increased (28.82) in the trial group. In the one-year follow-up, ten participants (27.7%) from the trial group and 28 (75.7%) from the control group relapsed into methamphetamine users.

**Conclusions:** Given the present findings regarding the effect of self-compassion training on reduced craving and increased self-efficacy in female patients with methamphetamine dependence, the researchers recommend that self-compassion skills training be applied in drug rehabilitation centers and hospital wards to complement conventional therapies.

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Craving; self-compassion training; self-efficacy; methamphetamine; female

## Introduction

Iran has long faced the problem of substance use, injuries, and resulting problems. Methamphetamine use euphoria and excitement in the individual by directly affecting the brain mechanisms (Ropek et al., 2019; Winslow et al., 2007). At the same time, severe sleep disorders, anorexia, excessive trance, psychosis or severe psychological disorder and increased aggression, depression, cognitive problems, unsafe sexual relationships and increased infectious diseases (Gan et al., 2018), weakened attention, and a rising craving for use are some of the consequences of methamphetamine use (Shahmohammadi et al., 2016; Wang et al., 2013).

According to the 2016 United Nations Office on Drugs and Crime (UNODC) statistics, methamphetamine users are increasing in prevalence. According to this report, more than 35 million people worldwide regularly users methamphetamine, while the number of cocaine and heroin users is estimated at 11 million and 10 million people, respectively (Liechti et al., 2000). A change is witnessed in the type of drug users by Iranian women. There are no accurate statistics on the number of women addicted to methamphetamine in Iran; however, according to the statistics provided by Kerman's psychiatric center, the number of women hospitalized in psychiatric wards has had a rising trend since early 2011, and three to five women

visit this center for methamphetamine rehabilitation every month. Meanwhile, this figure increased to six to eight women in the first six months of 2016 (Witkiewitz & Bowen, 2010).

Craving is regarded as one of the main factors predicting drug relapse and therefore as the root user of relapse and the failure of addiction rehab programs (Shahmohammadi et al., 2016). Craving is considered an important factor contributing to 'quitting failure' and drug use relapse (Choi et al., 2013; Witkiewitz & Bowen, 2010). A study conducted to compare the predictive capacity of self-efficacy between drug rehabilitation groups and a control group showed that the level of self-efficacy was higher in the groups receiving methadone therapy plus cognitive interventions (Wang et al., 2013). Accordingly, teaching coping techniques self-compassion training and measuring self-efficacy in different situations, such as assessing resilience in methamphetamine-using women post-rehab, are particularly important (Freund et al., 2019).

There is some evidence on the positive role of self-compassion training and increased personality strength in coping with drug dependence (Boonlue et al., 2016). According to studies, self-compassion training has a major role in improving mental and functional health and preventing high-risk events, and increasing psychological flexibility (Neff et al., 2007). Other

evidence suggests the role of self-compassion training in mental health and self-restraint in the treatment of disorders caused by drug use (Caldwell, Krug, Carter & Minzenberg, 2014; Denckla et al., 2017; Lee & Rawson, 2008).

As half of the population of any society, women are directly and indirectly involved in the use of methamphetamine (Mohammadi et al., 2016). Since women exert tremendous effects on various aspects of life, especially family life, their addiction entails harmful consequences for human societies, especially about the family unit and children's upbringing (McHugh et al., 2014). It is therefore necessary to address the issue of methamphetamine use among women.

## Methods

The present study is a randomized controlled non-blind controlled clinical trial. The statistical population of the study included all female patients with methamphetamine use disorder who in 2027–2018 referred to Farabi Hospital (Kermanshah University of Medical Sciences, Kermanshah,

Iran) for treatment and the exclusive use of methamphetamine in them has been confirmed by TLC testing or based on a structured DSM-5 interview by a psychiatrist, were selected as the research sample and then divided randomly into the experimental group ( $n = 42$ ) and the control group ( $n = 42$ ).

Two subjects belonging to the experimental group decided not to participate in the self-compassion training sessions. Accordingly, to match the number of the participants in the control group, two subjects were eliminated, and the result was an assignment of 40 subjects in the experimental group and 40 in the control ( $n = 80$ ).

The total subjects were assessed via the craving (Desire for drug questionnaire (DDQ)) and self-efficacy (General Self-Efficacy Scale (GSES)) questionnaires before the intervention. The evaluation was performed by an experienced clinical psychologist.

One month after the training session, the Craving and Self-Efficacy questionnaires were re-administered to both groups. Also, one year after the intervention, both groups were followed for methamphetamine users (Figure 1).

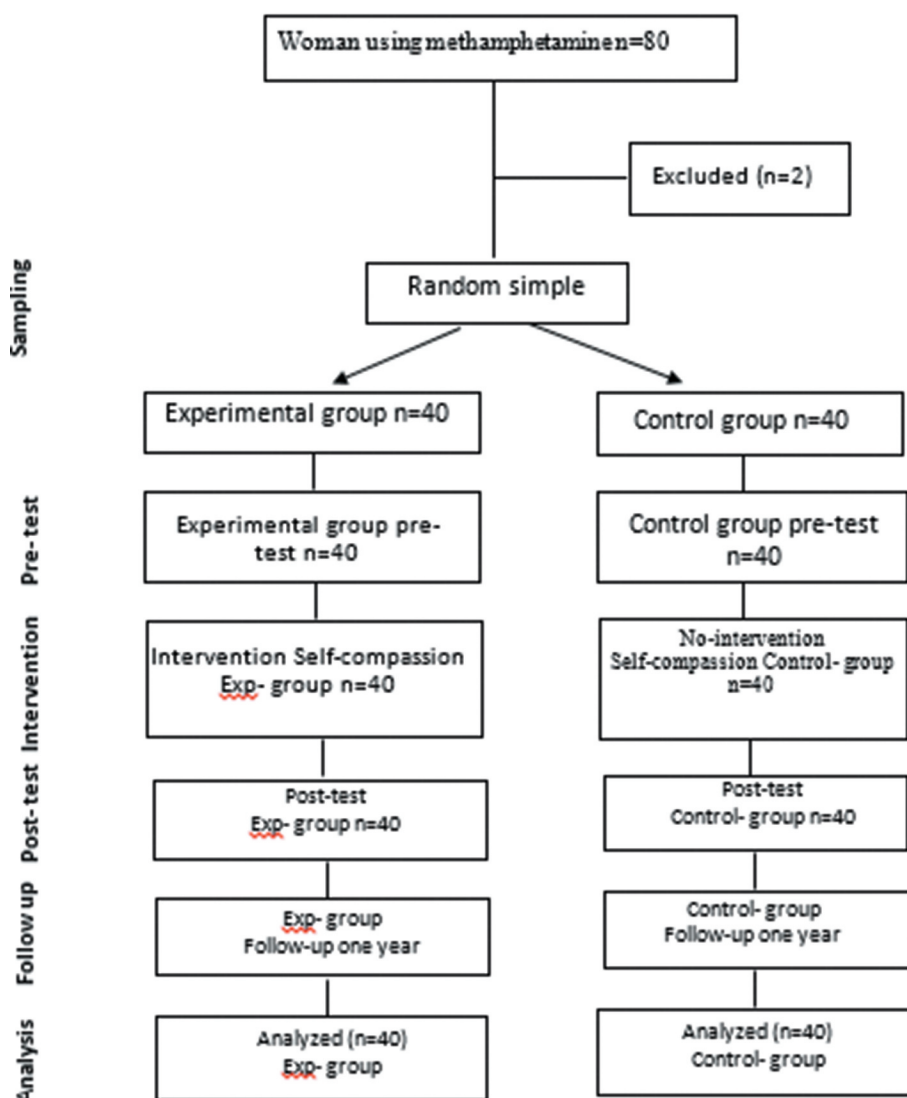


Figure 1. The process of selecting the samples to do the study.

## Inclusion and exclusion criteria

The inclusion criteria consisted of the female gender, methamphetamine use for at least six months, and the relapse of at least two weeks from the start of methamphetamine-induced psychosis treatment. The exclusion criteria were unwillingness to take part and more than two sessions of absence from the training program.

## Measurement instruments

- (1) **Desire for Drug Questionnaire (DDQ):** Craving was assessed in this study using the Desire for Drug Questionnaire (DDQ), which includes 14 items scored based on a 7-point Likert scale (1 to 7), with the minimum score being 14 and maximum 98. The DDQ has a favorable validity and reliability. Its reliability has been confirmed with a Cronbach's alpha of 0.79 (Franken et al., 2002).
- (2) **General Self-Efficacy Scale (GSES):** The short form of the General Self-Efficacy Scale (GSES) was implemented to assess self-efficacy in this study. This scale contains ten items, which are scored based on a 4-point Likert scale (1 to 4), with the minimum score being 10 and the maximum 40. Previous studies have reported the reliability of this scale as 0.70 to 0.90 (Luszczynska et al., 2005). In Iran, in the research of Farnia et al., (2020) Cronbach's alpha coefficient of this questionnaire was obtained 0.94.

## Procedure

Following coordination with the ward authorities, methamphetamine users (hospitalized for psychosis) were first identified by the ward psychologist. Then, with the patients' consent, the trial group received eight training sessions in addition to their routine therapies twice a week. Reception and free counseling services were provided as incentives for the patients to take part. The sessions was presented by an experienced clinical psychologist, self-compassion training on the training group in small groups of ten to fifteen people; Training was conducted twice a week for 60 to 90 minutes at Farabi Hospital. Table 1 presents the topics and content of the training sessions.

The DDQ and GSE were then completed by both groups before and after the training. The two groups were also followed -up one year after the training in terms of their rate of relapse to methamphetamine users.

## Ethical approval

The present study was conducted according to the Helsinki Declaration. The study was approved by the ethics committee of the vice chancellery of research and technology, Kermanshah University of Medical Sciences (KUMS.REC.1396.346).

## Data analysis

The relationship between the variables was assessed using simple and multiple logistic regression models. The

**Table 1.** The content and topics of the training sessions/protocol.

Session	Objective	Explanation	Duration (minutes)
One	Performing pretest	Cognitive conceptualization of self-compassion and explaining the training objective and implementation of pretest	90
Two	Empathy training	Teaching people to understand issues with an sympathetic attitude	90
Three	Self-compassion and empathy training	Including training on the formation of more diverse emotions about people's feelings, which increases care and attention to health	90
Four	Forgiveness training	Training on acceptance of one's mistakes and self-forgiveness to hasten change	90
Five	Acceptance of problems training	Training on acceptance of changes ahead and then the ability to endure difficult and challenging situations, given variability of trend of life and exposure to various challenges	90
Six	Training development of worthwhile and transcendental feelings	training people to generate valuable feelings in themselves to enable appropriate dealings with the environment	90
Seven	Accountability development training	Accountability is the main component of self-compassion training, based on which, subjects learn to be self-critical to generate newer and more effective attitudes and feelings	90
Eight	Summing up and finale	Summarization, and implementation of posttest	90

insignificant variables were discarded by backward or forward methods ( $P < .05$ ). All the analyses were carried out in SPSS-25 and State Corp-14.1.

## Results

The women's mean age was  $32.8 \pm 7.4$  years in the trial group and  $32.9 \pm 6.7$  years in the control group, which shows no statistically significant intergroup differences. A total of 34 women (85%) from the trial group and 29 (72.5%) from the control group had a family history of the drug user, which shows no statistically significant intergroup differences (Table 2).

The mean score of self-efficacy was 19.87 before training and 28.82 after training in the trial group and 17.22 before training and 17.45 after training in the control group. The mean score of craving was 75.05 before training and 51.82 after training in the trial group, indicating a reduced craving in this group, and 71.77 before training and 75.05 after in the control group, which suggests an increased craving in this group (Figure 2).

Both groups were assessed and followed up in terms of methamphetamine use relapse one year after the training. The results showed that ten women (27.7%) from the trial group and 28 (75.7%) from the control group had

**Table 2.** Demographic characteristics of methamphetamine users based on experimental and control group.

Variable		Control N(%)	Experimental N(%)	p-value
age	20–30	14(14.3)	18(45)	0.63
	31–40	21(52.5)	17(42.5)	
	41–52	5(12.4)	5(12.5)	
Education	<diploma	21(52.5)	28(70)	0.25
	> diploma	19(47.5)	12(30.)	
	housewife	15(37.5)	19(47)	
Occupation	employment	25(62.5)	21(52.)	0.49
	housewife	29 (72.5)	34(85)	
History addiction in family	yes	11(15.0)	6(15)	0.96
	no	10(25.0)	11(27)	
	<15	14(35.0)	15(37)	
	16–20	12(30.0)	10(25)	
	21–30	4(10.0)	4(10)	
First consumption experience	>32	14(35.0)	12(30)	0.56
	friends	18(45.0)	16(40)	
	family	5(12.5)	10(25)	
	housewife	3(7.5)	2(5)	
	another			

methamphetamine use relapse, which suggests a significant difference between the two groups in the rate of relapse ( $P < .001$ ).

The assessment of the factors affecting relapse showed that the odds of relapse increase with age. The odds of relapse increased by 0.10 units for each year of increase in age. Also, these odds increased by 2.27 (1.05–7.33) in those with less than a high school diploma compared to those with university education. The odds of relapse also increased by 1.07 units per unit of increase in the DDQ score, but then decreased per unit of increase in the GSE score (Table 3).

## Discussion

The present study was conducted to assess the effect of self-compassion training on craving and self-efficacy in female methamphetamine users and the rate of relapse over a one-year follow-up. The results showed that self-compassion training leads to a reduced craving for use and an increased

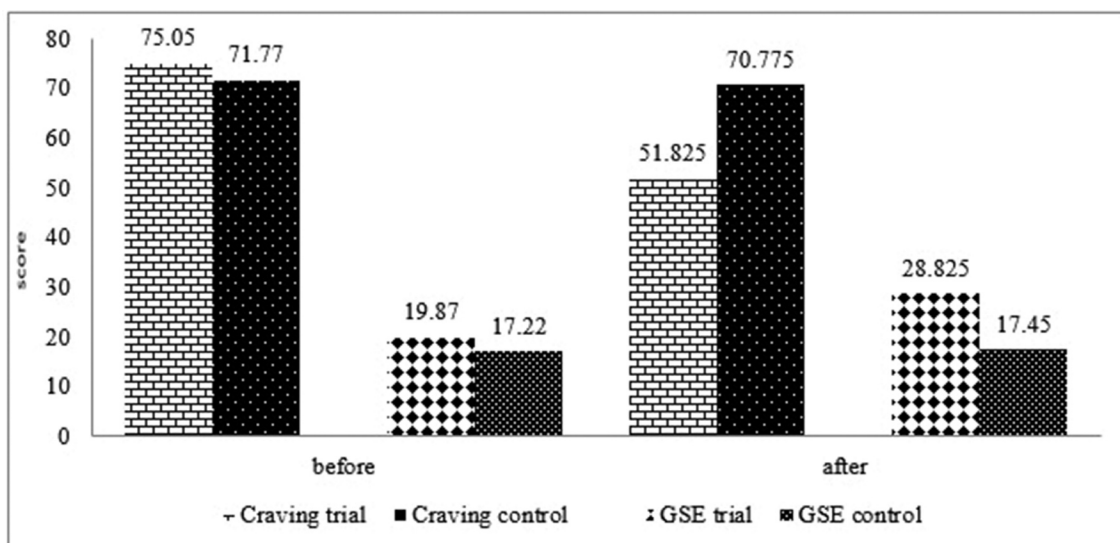
**Table 3.** The factors affecting the woman's relapse to methamphetamine use based on the simple logistic regression.

Variable		OR(95%CI)	P-value
<b>Age</b>	(increase one year)	1.10(1.02–1.19)	0.009
	≤diploma	1	0.03
<b>Education</b>	<Diploma	2.27(1.05–7.33)	0.9
	Single	1	
	Married	0.95(0.27–3.28)	
	Divorce	(0.10–1.50)	
<b>Self-compassion training</b>	No	1	<0.001
	Yes	(0.43–0.35)	
<b>DDQ</b>	increase one unite	1.07(1.02–1.12)	.003
<b>GAE</b>	increase one unite	0.87(0.80–0.95)	.002

self-efficacy for methamphetamine users. These results agree with those obtained by Phelps et al. (2018) with regard to the role of self-compassion training in reducing the risk of relapse to drugs. Self-efficacy training also affected different aspects of health.

The present study agrees with the results of a study conducted to assess the role of self-compassion training in predicting the motivation for treatment and readiness for change in drug-dependent people (Mikolajczyk et al., 2008). The present findings revealed that self-compassion training leads to a reduced craving for methamphetamine use, which concurs with the results obtained by Bowen et al. (2014) and Witkiewitz et al. (2014).

The present study also showed a significant difference between the trial and control groups in terms of the posttest adjusted mean scores of self-efficacy, as self-compassion training increased self-efficacy significantly in the trial group (Moattari et al., 2012). The mean post-training self-efficacy level was higher compared to the control group in the trial group of women with methamphetamine use disorder (Ghasemi et al., 2014). The present findings somewhat agree with the results obtained by Starks et al. (2017) showing the effectiveness of group therapy, including self-compassion training, in increasing self-efficacy and also with the results of a Studies on self-compassion training as an appropriate source of coping with negative life events (Bluth & Blanton, 2015;

**Figure 2.** Follow up research after one year, both women's groups use methamphetamine.

Trompetter et al., 2017). The present study showed that self-compassion training has a significant effect on increasing women's self-efficacy and reducing their craving.

The strengths of the present study include of the female methamphetamine users and the acceptable sample size as well as the homogenization of the two groups in terms of age, gender, and type of drug used and also the educational intervention provided, the presence of a psychiatrist in the team and the one-year follow-up in addition to the routine therapy provided in the ward.

Lack of control over some variables, such as the kind of drug used, was a limitation of the present study. Due to the prevalence of methamphetamine use in women, most previous studies were performed on men; this study was performed on women with methamphetamine use disorder.

## Conclusion

The present study showed that self-compassion training reduces craving in methamphetamine users and significantly improves their self-efficacy and performance. The one-year follow-up showed that the trained individuals had fewer methamphetamine relapses compared to the control group. Addiction rehab centers are recommended to use self-compassion training, which is a relatively inexpensive method, in conjunction with routine therapies, to enhance positive psychological attributes such as hope in life in methamphetamine users.

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## Disclosure statement

The authors report no conflict of interest. The authors alone are responsible for the content and writing of the paper.

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