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# Male Addicts' Experiences on Predictors of Relapse to Drug Use: A Directed Qualitative Content Analysis

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**Main Points**

- Relapse to drug use can be explained using MTM.
- Unpleasant emotions, peer pressure, and access to drugs were the most important factors in increasing drug use relapse.
- Relapse of drug use is multifactorial.

**Abstract**

Addiction relapse is one of the most essential aspects of addiction. This study aims to explain the male addicts' experiences on predictors of relapse to drug use based on a multitheory model (MTM). This study was directed qualitative content analysis that was conducted on 17 addicts referred to addiction treatment centers in Hamadan City, Iran, in 2019. The samples were recruited using the purposive sampling method. Semistructured, individualized interviews were used to collect data, and then, data were analyzed using a theory-based content analysis approach. Data analysis led to the extraction of 19 main codes that were categorized in six predetermined themes of MTM constructs consisting of participatory dialog, behavioral confidence, changes in physical environment, emotional transformation, practice for change, and changes in social environment. The main predictors of drug use relapse were emotional transformation, changes in social environment, and changes in physical environment. Findings of this study showed that the unpleasant emotions, peer pressure, and access to drugs were the most critical factors in increasing drug use relapse. Therefore, designing appropriate interventions to prevent relapse of drug use based on the results of this study appears to be useful.

**Keywords:** Substance use, addiction, recurrence, directed content analysis, multitheory model

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## Introduction

Drug addiction is one of the physical, mental, and social complications in today's world (Breslau et al., 2017) with an increasing worldwide prevalence and has turned into a source of concern for many human societies (Namazpoor et al., 2017). Drug addiction is also one of the main problems in Iran as its neighbor country, Afghanistan, is the major international opium producer (Najarzadegan & Tavalaee, 2012). Drug abuse is one of the most significant health-related issues because it threatens the society and is related to many illegal activities and diseases such as acquired immunodeficiency syndrome (Ahmadi

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et al., 2010). The high relapse rate of drug addiction is a major challenge for experts in this field (Ramo et al., 2012). Relapse means the relapse of drug abuse after quitting (Laudet, 2008). Despite the advancements in the drug addiction treatment, relapse is still a critical problem in the treatment process (Kelly et al., 2011). Some studies have shown that the relapse rate of drug abuse in the first six months after quitting is 75% (Tam et al., 2016; Witkiewitz et al., 2018). Some researchers have found that only 20 – 50% of patients can effectively stop drug use after one year of abstinence (Friedman & Hechter, 1988). Relapse is a multifactorial phenomenon resulting from the interaction between personal, interpersonal, environmental, societal, and policy factors (Hao et al., 2013). Most drug addicts have quit addiction several times and relapsed again (Afkar et al., 2017). Therefore, relapse prevention is a vital part of the treatment process (Marlatt & Donovan, 2005; Nielsen et al., 2012). Hence, it is necessary to identify causes and main factors of drug use relapse for planning preventive interventions. Although a variety of health behavior theories and models have been used to identify such factors, they have issues, such as conceptual problems, lack of predictive power, uneconomical, overly comprehensive, and, therefore, impractical. Considering these issues, Sharma has introduced a multitheory model (MTM) to change health behaviors. Based on the MTM, a class of concepts can be effective in initiating a health behavior, and another class can be effective in the sustenance of a health behavior. The MTM proposes three basic constructs in explaining and predicting the onset of a behavior as follows: 1) Participatory dialog, which focuses on the pros and cons of changing health behaviors, 2) behavioral confidence, which is a forward-looking confidence in one's ability to make a change in behavior, and 3) changes in the physical environment, such as availability of and access to resources that significantly contribute to change behaviors. In addition, the MTM suggests three other constructs affecting the persistence or sustenance of health behavior change as follows:

1) *Emotional transformation:* It involves the ability to change emotions and direct goals toward behavior change.
2) *Practice for change:* It involves thinking about changing behaviors, creating medium-term reforms, overcoming barriers, and focusing on changing health behaviors.
3) *Change in the social environment:* It involves creating social support that contributes to change behaviors (Sharma et al., 2017).

As there are regional differences in thoughts, beliefs, and opinions of people around the world, asking about opinions of drug addicts in each region can provide useful information about reasons of relapse in that geographical area (Khammarnia & Peyvand, 2018). Therefore, this study aimed to explain experiences of male addicts in Iran on predictors of drug use relapse based on the MTM.

## Methods

This study is a qualitative and directed content analysis. The research participants consisted of addicts referred to drug addiction treatment centers in Hamadan City, Iran, in 2019. The targeted sampling method was used to select samples. Moreover, to collect data, semistructured, in-depth interviews were utilized during a four-month period from May 2019 to August 2019. The interviews were carried out in a quiet place (one of the rooms in the drug addiction treatment centers) by an interviewer and a note-taker. Sampling and interviewing according to sources from qualitative studies continued until the data reached saturation level. Accordingly, in this study, after performing 17 interviews with 17 addicts referred to addiction treatment centers, the data reached the saturation level. This study was approved by the Research Ethics Committee of the Hamadan University of Medical Sciences (Approval ID IR.UMSHA.REC.1397.1035). According to the inclusion criteria (willingness to participate, history of drug withdrawal at least once and relapsing after a period of quitting, general health, and ability to speak normally) and in order to observe research ethics, in the first step, the participants were informed about the objectives of the scheme, the confidentiality of the data, and the voluntary nature of their participation in the study. Then, after filling out informed consent forms, the data were collected through personal interviews and by recording voices. In addition, the exclusion criteria in this study included the absence of the sample in the specified place to conduct the interview after two follow-ups and lack of cooperation in completing the interview.

The interviews were performed through the constructs of the MTM. These constructs include participatory dialog, behavioral confidence, changes in the physical environment, emotional transformation, practice for change, and changes in the social environment. Each interview lasted 40 – 60 min. The interview contained open-ended questions (Table 1). Additionally, during

Table 1.
*Guidelines for the Interviews with the Participants*

| The MTM constructs | Questions |
|---|---|
| Participatory dialog | What do you think are the benefits and drawbacks of quitting drugs for you? |
| Behavioral confidence | How sure are you that you can prevent relapse of your drug use? |
| Changes in physical environment | Do you think avoiding drug-related environments will reduce the likelihood of your relapse? |
| Emotional transformation | In your opinion, how effective is the emotions and feelings management regarding relapse prevention? |
| Practice for change | Do you think having plans or monitoring drug use behaviors can reduce the likelihood of relapse? |
| Changes in social environment | In your opinion, how important are the roles of family members, friends, and/or healthcare personnels in relapse prevention? |

MTM: multitheory model

each interview session, based on the responses of the participants, in-depth or exploratory questions were asked, such as "Can you explain more? What do you mean? Why and how? and Can you give an example?" Table 1 presents the interview guidelines based on the MTM.

One qualitative analysis method is directed content analysis, which was proposed by Hsieh and Shannon (2005). Directed content analysis begins with a theory or relevant research findings followed by coding and analysis. This approach aims to validate or extend conceptually a theoretical framework or theory (Hsieh & Shannon, 2005). The theory chosen in this type of study can help focus on the research question. In contrast, the theory can help predict interesting variables or relationships between variables. As a result, it is also useful in determining how initial coding occurs and also how codes are related (Mayring, 2000).

In this study, during the interviews, in addition to recording the data, all the participants' speech was transcribed. After the end of each interview, the recorded data and the transcripts were evaluated and compared by two researchers to consolidate and modify the data. After the researcher carefully reviewed the transcripts several times, the content was analyzed using an open coding system to generate the main category. For this purpose, in the first step, the content was divided into semantic units. Then, the units were summarized and converted into codes. Different codes were compared and categorized based on their similarities and dissimilarities. At this stage, the first classes were discussed and reviewed by three researchers to develop themes. In this study, we identified and categorized all instances related to the specific phenomenon. The researcher studied the entire content, and specified and marked sections based on the initial perception. In the next step, according to the predefined codes (based on the theory), the marked sections were coded. For evaluating the validity, accuracy, and robustness of this study, several criteria, including reliability, verifiability (authenticity), and transferability, were utilized (Speziale et al., 2011). To ensure the data acceptability, the researcher allocated sufficient time to data collection and engaged with the data for long periods. Thus, this study was carried out through communication with the participants in a period of four months to provide a better understanding of them. To ensure the verifiability of the coding technique in the categories of the MTM, the supervisor review method was utilized by two experts in the field of healthcare education and health promotion. For evaluating the data transferability, the samples were selected based on the maximum variability (variance).

## Results

The participants in this study included 17 patients with the mean and standard deviation age of 38($\pm$8.95) years. 47% of participants had a middle school degree, 23.5% had a diploma degree, 11.76% had an associate degree, and 17.64% had a bachelor's degree. In terms of the type of drug used, 58.8% of the participants used traditional drugs (heroin, opium, and opium derivatives), and 41.2% used industrial drugs (crack, crystal, etc.). After determining primary concepts, primary codes were extracted from the interviews. Then, the codes were assessed, summarized, and categorized into some subcategories and categories based on the MTM constructs. These constructs or themes based on the MTM included participatory dialog, behavioral confidence, change in the physical environment, emotional transformation, practice for change, and change in the social environment.

Out of the 17 interviews, 480 primary codes were extracted and assessed accurately. Then, 75 codes were selected from among the primary codes, which was finally decreased to 19 main codes. Next, the main codes were evaluated, and 13 subcategories and 8 categories were extracted. The arrangement of the themes, categories, subcategories, and codes is shown in Table 2.

**The Participatory Dialog About Drug Use Relapse Prevention**

The participatory dialog construct is divided into two categories of perceived advantages and disadvantages of quitting drug use. The majority of the participants believed that quitting addiction had advantages such as having better physical and mental health as well as having a better social image:

"The benefits of quitting addiction are that your digestive system works better, your appetite gets better, you enjoy eating but you lose your appetite when you're addicted you don't have the desire to eat food or fruits because food doesn't taste good to you" (Participant no. 7, relapse: six times). "It's very hard for a drug addict to participate in ceremonies due to the hangover or as their addiction stands out a mile. However, as they quit, they become confident and can go anywhere they want" (Participant no. 17, relapse: four times).

"When I quit drug addiction, I feel more comfortable and approved by people, I gain dignity and respect in my family and community" (Participant no. 7, relapse: six times).

"As I quit, I become more providence and optimistic about the future, my mood enhances, and my social interactions improve. Gradually, my confidence increases, I wake up early in the morning, spend my time efficiently instead of wasting it for drug abuse. A drug addict never enjoys working, but after quitting, working becomes more enjoyable" (Participant no. 2, relapse: eight times).

"Your spirits get better and you treat your family and those around you better, and overall, you get better with others" (Participant no. 14, relapse: six times).

They also believed that unpleasant emotions and physical unpleasant symptoms caused by withdrawal were the disadvantages of drug use quitting. Most of the participants stated that these factors were the most critical and influential factors in predicting drug use relapse early after quitting addiction:

"I think discomfort, nervousness, and body pain are the major problems during quitting" (Participant no. 12, relapse: seven times).

"As you quit, you become nervous, anxious, and aggressive, and look for excuses to start drug use" (Participant no. 15, relapse: more than 10 times).

**Behavioral Confidence About Drug Use Relapse Prevention**

The main category of behavioral confidence was self-efficacy. The addicts believed that one's desires as well as wills and judgments about one's ability affect the process of quitting:

"It's very difficult, but when you decide to quit, you can do that" (Participant no. 4, relapse: five times).

Table 2.
*The Process of Extracting a Theme from Semantic Units, Codes, and Related Categories*

| Theme | Category | Subcategory | Code | Semantic units |
|---|---|---|---|---|
| Participatory dialog | Perceived advantages | Increasing health | Improve body function | The benefits of quitting addiction are that your digestive system works better, your appetite gets better, you enjoy eating but you lose your appetite when you are addicted you do not have the desire to eat food or fruits |
| | | lower cost | saving time | You do not fall out of work and life and do not waste your time on drugs and drug use |
| | | Better social image | mood improving | Your spirits get better and you treat your family and those around you better, and overall, you get better with others |
| | | | Better acceptance by family and people | When I quit drug addiction, I feel more comfortable and approved by the people, I gain dignity and respect in my family and community |
| | | | Better motivation and morale | As I quit, I become more providence and optimistic about the future, and my social interactions improve. Gradually, my confidence increases, I wake up early in the morning, a drug addict never enjoys working, but after quitting, working becomes more enjoyable |
| | Perceived disadvantages | Withdrawal symptoms | Body pain | I think discomfort, nervousness, and body pain are the major problems during quitting |
| | | | Psychological issues | As you quit, you become nervous, anxious, and aggressive, and look for an excuse to start drug abuse |
| Behavioral confidence | Self-efficacy | Strong will and belief | Belief in individual ability | It is very difficult, but when you decide to quit, you can do that |
| | | | Learning skills | No pain, no gain. If you decide to quit and be aware of its steps, you can do it |
| Changes in physical environment | Context suitable for drug use | Access | Having drugs | "I was in Zahedan city. I quitted drug abuse for 7 months. One day my brother called and asked me to bring him 50 grams of opium. And I bought him opium, on the way back to our hometown (Hamedan) because I had opium with me, I was tempted to consume some of that opium, so, that lapse made me relapse" |
| | | | readiness of resources | When you pass the drug sales area, you just want to pull over and buy some drugs |
| Emotional Transformation | Self-Motivation± | unpleasant emotions | negative mood | Frustration, anxious, worry, bad events, and family conflict make you turn to drugs again because you feel you have no choice, and only drugs can calm you down |
| | | Feeling tired of addiction | Doubts | You cannot quit if there is no tendency for quitting. I gained this tendency by becoming socially and financially impaired. My situation was such that I begged for money to buy drugs, this situation made me tired of drug abuse |
| | | Pleasant feeling | Better mood | Along with friends and drug use very fun and enjoyable |
| Practice for change | Active reflection and reflective behavior | situation Monitoring | attention to quitting process | Having a purpose, exercising, hanging with healthy friends, and going to the nature and park can help quitting and forgetting the temptation for drug abuse |

Table 2.
*The Process of Extracting a Theme from Semantic Units, Codes, and Related Categories (continued)*

| Theme | Category | Subcategory | Code | Semantic units |
|---|---|---|---|---|
| Changes in social environment | subjective norms | Peer pressure | Addicted friends | I quitted for several times, but the relationship with my addict friends made me abuse drugs again |
| | | | Existence of an addicted in family | when I see my dad sitting at home using opium, well I am tempted too |
| | Social support | Emotional support | Good family dealing | Appropriate family behaviors such as providing good care, nice behavior, providing nutritious foods, etc., significantly prevent relapse |
| | | Information and appraisal support | Staff of addiction treatment centers | patients always welcome high quality treatment and follow-up |

"No pain, no gain. If you decide to quit and be aware of its steps, you can do it" (Participant no. 1, relapse: three times).

**Change in Physical Environment About Drug Use Relapse**

The addicts believed that approaching drug-related locations, drug availability, and drug-related cues were highly effective in drug use relapse:

"When you're in a place where drugs are consumed, you're under pressure and tempted to consume, you're constantly looking for a way to do it" (Participant no. 16, relapse: six times).

"When you see the opium smoking pipe, or hide the drug somewhere, you just keep thinking about using it. Passing the drug sales area or seeing the drug dealer attracts you toward drug use" (Participant no. 7, relapse: six times).

"I was in Zahedan City. I quit drug abuse for seven months. One day, my brother called and asked me to bring him 50 grams of opium. After I bought him opium and on the way back to our hometown (Hamedan City), because I had opium with me, I was tempted to consume some of it, so, that lapse made me relapse" (Participant no. 3, relapse: three times).

**Emotional Transformation About Drug Use Relapse Prevention**

Emotional transformation was divided into three subcategories of unpleasant emotions, pleasant feeling of consumption, and feeling tired of addiction. Most of the addicts believed that drug use would create relaxation, energy, and a positive and supportive mood:

"Frustration, anxious, worry, bad events, and family conflict make you turn to drugs again because you feel you have no choice and only drugs can calm you down" (Participant no. 15, relapse: more than 10 times).

"Opium smoking is so much fun, makes me feel better, and gives confidence and energy; opium smoking, especially with friends, gives me a great feeling" (Participant no. 2, relapse: eight times).

In contrast, they believed that becoming tired of the situation and facing financial and social problems provoked drug withdrawal:

"You can't quit if there is no tendency for quitting. I gained this tendency by becoming socially and financially impaired. My situation was such that I begged for money to buy drugs. This situation made me tired of drug abuse" (Participant no. 11, relapse: more than 10 times).

**Practice for Change to Decrease Relapse**

Practice for change was divided into active reflection and reflective behavior. The drug addicts believed that constant thinking about changing behavior, overcoming obstacles, and maintaining a focus on the changing behavior was an effective monitoring method to prevent drug use relapse:

"While I was chilling on the sofa, a pack of crystals (two grams) fell down from the sofa layer, and I really wanted to use it. I told myself that if I used it, I would relapse. After a short time, I couldn't resist and called my counselor. He immediately reached out to me and dumped the crystal pack in the toilet. He asked me to sit down and talk, and after a while, I completely forgot about the crystal" (Participant no. 13, relapse: five times).

"Having a purpose, exercising, hanging with healthy friends, and going to the nature and parks can help quit drug use and forget the temptation for drug abuse" (Participant no. 12, relapse: seven times).

"In my opinion, when one is in a drug use situation, they should think that they will get addicted again if they use it once; they should recall hard situations, all sufferings during their addiction period, hangovers, and disadvantages of addiction. In this case, they will be less likely to relapse" (Participant no. 7, relapse: six times).

"There is a temptation for drug consumption while you're under mental pressure. In such situations and to prevent relapse, you can talk about your problems, ask your counselor for help, go for a walk, and spend time with healthy friends" (Participant no. 4, relapse: five times).

Unemployment and low income were some of the issues mentioned by the participants. One of them claimed that, "I'm unemployed because there is no job, and even if there is, no one employs an addict as they don't trust us" (Participant no. 1, relapse: three times).

**Social Environment Change About Drug Use Relapse Prevention**

The main category of social environment was social support and

subjective norms. The addicts believed that a few weeks after detoxification (after withdrawal symptoms were removed), the family, addicts' friends, and peers played a crucial role in the quitting process or relapse. In other words, sometime after the withdrawal symptoms are removed, these factors are the most critical determinants of drug use relapse:

"Appropriate family behaviors such as providing good care, nice behavior, providing nutritious foods, etc. significantly prevent relapse" (Participant no. 4, relapse: five times).

"A drug addict is thirsty for love, and the behavior of those around him (family, friends, etc.) is crucial in the process of quitting addiction" (Participant no. 13, relapse: five times).

"I quit several times, but the relationship with my addict friends made me take drugs again" (Participant no. 8, relapse: seven times).

"I quit addiction, when I see my father taking drugs at home, I'm tempted too" (Participant no. 4, relapse: five times).

"I think appropriate and professional feedback from staff at addiction treatment centers is important. Patients welcome high quality treatment and follow-up" (Participant no. 11, relapse: more than 10 times).

## Discussion

This study aimed to explain experiences of addicts on predicting drug use relapse based on the MTM. According to the findings of this study, drug use relapse could be explained using the MTM.

The results of this study showed that the majority of the study participants understood the advantages of quitting and abstinence from drug use and stated that quitting has benefits such as having better physical and mental health as well as having a better social image. However, regarding disadvantages of quitting addiction, the participants emphasized physical problems such as muscle ache and difficulty in tolerance of the hangover caused by quitting addiction, at the beginning of quitting. Overall, the drug users believed that emphasis on the perceived advantages and disadvantages of quitting was a motivational predictor for relapse. The results of similar studies showed that emphasis on advantages of quitting drug abuse (being healthy and decreased costs) could play an effective role in decreasing drug abuse relapse (Bashirian et al., 2019; Toosi et al., 2016). In a study, it was shown that the perceived advantages and disadvantages of quitting could help start the treatment (Tavakoli Ghouchani et al., 2015). Therefore, to change the construct of participatory dialog, it is necessary to emphasize and give more weight to the advantages of behavior change compared with its disadvantages. This is obtained through a cooperative approach, in which the individual, group, or society reaches a conclusion from advantages of the change (Sharma, 2015). Our study showed that one's desires as well as wills and judgments about one's ability affect the process of onset of drug relapse prevention behaviors. Self-efficacy leads to an increase in the attempt, perseverance, and motivation of individuals. It is one of the effective determinants of success in the control, assessment, and follow-up of treatment plans for drug addicts (Amirafzali & Shirazi, 2016). The results of similar studies showed that self-efficacy had a major determinative role in relapse (Ibrahim & Kumar, 2009; Kadam et al., 2017; Rahman et al., 2016). Therefore, in preventive interventions, health trainers can use appropriate methods and strategies to modify this structure. In this study, the participants believed that the place they used for drugs and easy access to drugs played significant roles in relapse. The physical environment consists of the ability to buy substance, drug availability, and easy access to drugs (Sharma, 2016). Similar studies showed that some of these environmental factors (ability to buy drug and drug availability) were among the decisive factors in drug abuse relapse (Mirzaei et al., 2010; Safari & Mousavi-Zade, 2014). Therefore, it can be concluded that for relapse prevention, authorities need to take comprehensive actions to modify the physical and environmental structures.

The participants believed that unpleasant emotions were another effective factor for relapse. Emotional transformation requires the ability to manage emotions with the goal of changing the health behavior, creating motivation, and overcoming doubts about achieving this goal (Sharma, 2015). The results of other studies also showed the effect of emotional transformation on drug abuse relapse (Haghighi et al., 2018; Maehira et al., 2013; Shafiei et al., 2014). The participants claimed that memorizing, planning, and supervising the quitting process could be highly helpful in relapse prevention. Self-regulation is an internal control mechanism, which leads to performing purposeful actions and enables individuals to control their thoughts and performances (Sharma et al., 2017) .Griffin, Botvin, and Scheier (2009) found that longer drug abuse by individuals caused them to have less self-control ability. Wills and Stoolmiller (2002) showed that a low level of self-regulation was associated with an increase in drug abuse. Therefore, self-regulation is an effective factor in the onset and continuation of drug abuse (Wills & Stoolmiller, 2002). As demonstrated in the results of this study, social support and peer pressure were also among the major causes of relapse. In this regard, the findings of our study are consistent with the results of similar studies (Deepti et al., 2014; Haghighi et al., 2018; Sau et al., 2013). Mohammadpoorasl et al. (2012) in their study showed that the existence of a drug user in the family and addicted friends are major predictors of drug use relapse. The results of studies by Maehira et al. (2013), Ibrahim and Kumar (2009), and Ashrafi Hafez et al. (2015) showed that lack of perceived family support was a critical factor in relapse. Social support is defined as the love, support, and attention of family members, friends, and other people. Researchers believe that social support has a positive effect on mental, physical, and financial health, improves the quality of life, and makes individuals have a good feeling about life (Rambod & Rafii, 2010). Individuals receiving social support feel that they are loved and respected. They know themselves as a part of the social network of family, friends, or communities as a source of financial and spiritual support. In this way, they can better overcome stressful life events (Caltabiano & Sarafino, 2002). This study suffered from some limitations. First, this study was a qualitative study and could not be generalized to different cultures. Second, this study included only male addicts, and it is not clear whether the same findings would be obtained for the female addicts. Therefore, it is recommended that this issue be done on women in future research.

## Conclusion

According to the results of this study, drug use relapse based on the MTM is more affected by the emotional transformation (unpleasant emotion), change in the social environment (addicted friends, family dispute, etc.), and change in the physical environment (access to drugs) constructs using a qualitative approach. Therefore, designing appropriate interventions to prevent drug use relapse based on the results of this study appears to be useful.

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**Ethics Committee Approval:** Ethics committee approval was received for this study from the Ethics Committee of Hamadan University of Medical Sciences (Approval ID IR.UMSHA.REC.1397.1035).

**Informed Consent:** Written informed consent was obtained from the addicted who participated in the study.

**Peer-review:** Externally peer-reviewed.

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