

# The Role of Sensation-Seeking and Coping Strategies in Predicting Addiction Potential among Students

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## ABSTRACT

**Objective:** Personality is the most important infrastructure factor in addiction, and substance abusers have certain personal weaknesses that make them vulnerable to addiction. This study examined the role of sensation-seeking and coping strategies in predicting drug addiction in high school students.

**Methods:** This study is a descriptive–correlational research. Multi-stage cluster sampling was used to select 230 high-school students in Kermanshah City. To measure the variables, Zuckerman's Sensation Seeking Scale Form V, Coping Strategies Questionnaire (Billings and Moos), and the Addiction Potential Scale (Weed and Butcher) were used. Data were analyzed using Pearson correlation and multiple regression analysis.

**Results:** There was a significant relationship between sensation-seeking and drug addiction potential among the students. Moreover, coping strategies could predict drug abuse potential, and emotion-focused coping was the most powerful predicting variable.

**Conclusion:** According to our results, people with a higher level of sensation-seeking and those who use emotion-focused coping strategies are more prone to substance abuse.

## 1. Introduction

There was a time when addiction and opioids were prevalent among the elderly, and morally condemned by the society. Today, on the other hand, many middle-aged and young people are affected with addiction (Baghiani-Mogahadam, Fazelpour & Rahaee, 2008), which is the most common psychiatric disorder in the world (Sinha, 2011).

Addiction is a physical, mental, social, and spiritual ailment (Galanter, 2006). In other words, addiction is a habit

or behavior that is very difficult to quit. One may be addicted to alcohol, opioids, or gambling. These additions can relieve the pain or fear for a while, but their continual and addictive use become problematic (Baghiani Mogahadam, Fazelpour & Rahaee, 2008). Where substance dependence is concerned, various cognitive, social, familial, and biological factors are involved (Magid, Colder, Stroud, Nichter & Nichter, 2009).

Many research studies have been conducted on the association between addiction potential, substance abuse, and personality traits (Bakhshipour, Aliloo & Irani, 2008).

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Researchers believe that personality is the most important infrastructure factor in addiction, and substance abusers have certain personal weaknesses that make them vulnerable to drug abuse and addiction (Hansen & Breivik, 2001). The following studies have approved the role of personality traits in the onset, course, evolution, persistence, and treatment of the addiction and the existence of an association between different aspects of one's personality and tendency toward substance abuse (Arce & Santisteban, 2006; Ball, 2005).

Among the personality traits associated with addiction 'sensation-seeking' and 'coping strategies' are especially important (Romer & Hennessy, 2007). Sensation-seeking has been defined as the search for different, new, and complex feelings and experiences along with a desire for risk (Zuckerman, 1994). Sensation and novelty seeking in drug abuser are higher than others. There is a negative relationship between the age of onset of substance abuse and sensation-seeking in opiate dependents (Hadj seyed javadi, Mazinani, Fadai, & Dolatshahi, 2007; Karami, Pirkhaefi, Kowsarnia, & Massah, 2014).

Eysenck considered sensation-seeking a part of the extraversion/introversion aspects of one's personality, and believed in its association with surgency, assertiveness, sociability, and the tendency to seek the company of others - as aspects of extroverted individuals. He believed that this trait is mostly innate, and affects personality through genetic inheritance. Eysenck thought that extroverts have greater levels of brain stimulation and arousal compared to introverts, and hence they need stimulation and arousal and seek it actively, therefore ranking the reason behind it as biological and genetic (Schultz & Schultz, 1998).

Zuckerman describes sensation-seeking in four aspects: 1- thrill and adventure seeking, 2- experience-seeking, 3- disinhibition, 4- boredom susceptibility (Zuckerman, 1994). The first two represent the person's tendency toward participation in risky activities and search for new experiences, while disinhibition is a tendency to rebel against social norms and perform restricted activities. Boredom to susceptibility is intolerance toward repetition and tiring routine activities (Newcomb & McGee, 1991).

Sensation-seeking individuals do different things to reach their 'optimal level of arousal'. They socialize with different people, with no intention of influencing them, but to be stimulated (Arji, Bakhshipour, Aliloo, & Samadirad, 2008). Many studies show that one of the important factors in vulnerability toward substance and alcohol abuse is a high sensation-seeking level (Hittner & Swickert, 2006; White, Lott, & de Wit, 2005). Dackis and O'Brien

(2005) stated that people (especially young boys) often abuse substances just to gain exciting experiences and to please their sensation-seeking feeling. Moreover, inadequate coping strategies are among other important factors in starting substance abuse among youth (Toofan & Javanbakht, 2001). As a psychological procedure, coping is described as an individual's cognitive and behavioral efforts to resolve stressful situations. Coping includes efforts to manage and control environmental requests and has two important applications: regulation of unpleasant emotions and adoption of an action that will improve the upsetting problem (Folkman & Lazarus, 1988).

Researchers believe that most people prefer to use coping strategies in stressful situations; in fact all these strategies form the person's coping styles (Hamid, Yue & Leung, 2003). Coping strategies (CSs) are a collection of cognitive and behavioral efforts aimed at interpreting and modifying a stressful situation to reduce its subsequent suffering (Ghazanfari & Ghadampour, 2008). According to Lazarus and Folkman (1990), people use three types of CS in stressful situations: problem-focused, emotion-focused, and avoidance methods.

They believe that with respect to stressful factors, each method can be adaptive or maladaptive (Folkman & Lazarus, 1990). Nevertheless, problem-focused methods have greater adaptive outcomes. Literature reviews show an association between addiction and the way people cope with stress (Trinidad & Johnson, 2002). The various aspects of CS are important in predicting substance abuse, frequency, completion of treatment, and the relapse process among addicts (Ball, 1998). Moreover, an association has been reported between weak CSs and inappropriate problem-focused methods and substance abuse among addicts (Ball, 2005; Samoo'ei, Ebrahimi, Mousavi, Hasanzadeh & Rafi'ei 2000).

Taking into account the significance of personality traits (such as sensation-seeking) on one hand, and coping strategies in individuals' everyday life on the other hand, identifying these variables could prove useful as predictors of addiction potential. Such research studies in the future are recommended due to the following reasons; the changing pattern of substance abuse (from natural to synthetic substances) and increased abuse of stimulants by adolescents; their access to a wide range of good and bad information and virtual networks; and changes in the educational system. Moreover, by tracking these results and meta-analyzing them, we may achieve even more reliable results. Hence, this study was conducted to investigate the role of sensation-seeking and coping strategies in predicting addiction potential among students.

**Table 1.** Descriptive results (variable means and standard deviations).

Variable	Mean and standard deviation
Thrill and adventure-seeking	7.41 ± 2.05
Experience-seeking	6.11 ± 1.76
Disinhibition	6.28 ± 1.67
Boredom susceptibility	5.12 ± 1.32
Sensation-seeking	24.85 ± 6.70
Problem-focused coping	19.11 ± 4.09
Emotion-focused coping	16.07 ± 3.68
Addiction potential	97.64 ± 19.31

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## 2. Methods

This study is a descriptive–correlational research.

### Participants

The statistical population comprised all male high-school students in Kermanshah studying in educational year 2012/13. The sample consisted of 230 students who had been selected by multi-stage cluster sampling. One method of determining the sample size, is to calculate the average of sample sizes of three studies with similar subject (Delavar, 1996); and used that figure in this study. These three studies were: a) Kiamarsi and Abolghasemi (2011); sample size: 313. b) Ghasemi, Rabi'ei, Haghayegh, and Palahang (2011); sample size: 114. c) Fathi and Mehrabizadeh (2008); sample size: 224. First, districts 1 and 3 were randomly selected from Kermanshah three districts. Then, two high schools were selected from each district (four in total). Eventually, a number of classes were selected from different grades of each school. After briefing the students about the project, the questionnaires were distributed among them and collected after completion.

**Ethical Consideration:** Informed consent was obtained from participants and their confidentiality was assured.

### Data Collection Tool

The following tools were used to collect data

**Zuckerman's Sensation Seeking Scale (ZSSS):** The fifth version of this questionnaire was designed to assess the optimal level of arousal. Zuckerman examined the construct validity of this scale and found 4 subscales

(thrill and adventure seeking, experience-seeking, disinhibition, and boredom susceptibility). Each component includes 10 items.

Overall, the questionnaire has 40 questions and the minimum attainable score is 40. The higher the score, the greater the person's sensation-seeking. This scale has been standardized by Mahvi-Shirazi (2008) in Iran. Ekhtiari, Safaee, and Esmaeeli (2008) reported a 0.76 Cronbach  $\alpha$  for the scale, and Azami, Doostian, Hasannia and Sadeghkhani (2013) estimated its reliability at 0.83. Likewise, we calculated the entire scale's reliability at 0.83, and obtained reliabilities of 0.79, 0.82, 0.85, and 0.64 for the subscales of adventure-seeking, experience-seeking, disinhibition, and boredom susceptibility, respectively.

**Coping Strategy Inventory:** This questionnaire was designed by Billings and Moos (1981) to measure stress coping strategies. Its revised version (1984) has 19 items that measure problem-focused (8 items) and emotion-focused (11 items) coping strategies. A four-point Likert scale of 0 to 3 was used, where 0 refers to 'always', and 3 refers to 'never' ('often' and 'sometimes' in between). Kiamarsi and Abolghasemi (2011) estimated the scale's reliability at 0.91 Cronbach  $\alpha$ . We estimated it at 0.87.

**Addiction Potential Scale (APS):** This scale was designed by Weed and Butcher (1992) and standardized by Kordmirza, Azad, and Eskandari in 2003. This scale has 36 items plus 5 lie-detecting items (41 in total). A four-point Likert scale ranging from 'completely disagree' (0) to completely agree (3) has been applied. Upon examining the criterion validity of the APS, Zargar, Najjarian, and Noami (2008) found that it could differentiate well between addicts and non-addicts. Through correlating

**Table 2.** Correlation coefficient between sensation seeking and its components, problem-focused coping, emotion-focused coping, and addiction potential.

Variable	1	2	3	4	5	6	7	8
Thrill and adventure-seeking	1							
Experience-seeking	0.33**	1						
Disinhibition	0.24	0.13	1					
Boredom susceptibility	0.34*	0.21	0.36*	1				
Sensation-seeking	0.31*	0.34**	0.22*	0.23*	1			
Problem-focused coping	-0.24*	0.16	-0.20*	-0.19*	-0.15	1		
Emotion-focused coping	0.26*	0.31*	0.17	0.13	0.38**	0.10	1	
Addiction potential	0.34**	0.29**	0.31**	0.24	0.41**	-0.43**	0.51**	1

\* $p < 0.005$ , \*\* $p < 0.001$ PRACTICE in  
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the scale with the 25-item clinical symptoms' scale, the construct validity was estimated at 0.45, which is significant. The reliability of this scale using Cronbach  $\alpha$  was estimated at 0.86 by Doostian, Bahmani, Azami, and Goodini (2013). We calculated it as 0.91.

### 3. Results

In this study the information of 230 Kermanshah's male high school students studying in the 2012-2013 educational year, was analyzed. The participants' age ranged from 16-19 years, with a standard deviation of  $17 \pm 1.8$  y. Table 1 presents the descriptive results, including the variable means and standard deviations.

In table 2, Pearson correlation was used to calculate the correlation among the variables of thrill and adventure-seeking, experience-seeking, disinhibition, boredom susceptibility, sensation-seeking, problem-focused coping, and emotion-focused coping with addiction potential.

As it was seen in table 2, there were significant associations between sensation-seeking and its components (thrill and adventure-seeking, experience-seeking, disinhibition, boredom susceptibility), problem-focused coping, and emotion-focused coping with addiction potential in the students under study. There was a significant linear relationship between sensation-seeking (and all its components apart from 'boredom susceptibility') and emotion-focused coping, and addiction potential. An inverse relationship existed between problem-focused coping and addiction potential. Therefore, the first hypothesis of the study is approved.

Multiple regression analysis (simultaneous) was used to investigate the second hypothesis; the results of which have been presented in Table 3.

Regression coefficient (simultaneous) was used to determine the effect of 'sensation-seeking, thrill and adventure-seeking, experience-seeking, disinhibition, boredom susceptibility, problem-focused coping and emotion-focused coping' as predictive variables and 'addiction potential' as the criterion variable. The results of the aforementioned variables were significant; hence approving the second hypothesis, i.e. addiction potential is predictable in students who have a linear combination of sensation-seeking and coping strategies. Multiple regression coefficients showed that 25.05 of the students' addiction potential variance was determined/explained by 'sensation-seeking, thrill and adventure-seeking, experience-seeking, disinhibition, boredom susceptibility, problem-focused coping and emotion-focused coping' variables ( $R^2=25.05$ ). Moreover, with regard to  $\beta$  coefficient, emotion-focused coping, thrill and adventure-seeking, problem-focused coping, disinhibition, sensation-seeking and experience-seeking were the strongest predictive variables, in such a way that problem-focused negatively predicted addiction potential and the rest positively predicted it.

### 4. Discussion

The present study was conducted to determine the association between sensation-seeking, coping strategies, and addiction potential among male high school students. On the whole, we found significant associations between sensation-seeking and its components (thrill and adventure-seeking, experience-seeking, disinhibition, boredom susceptibility), coping strategies

**Table 3.** Multiple regression (simultaneous) coefficients of sensation-seeking and its components, problem-focused, emotion-focused coping, and addiction potential.

Variable	Non-standardized coefficients		Standardized coefficients	T	p
	Beta	Standard error	Beta		
Constant coefficient	98.82	7.75	-	9.33	0.001
Thrill and adventure-seeking	0.470	0.142	0.246	-1.23	0.001
Experience-seeking	0.301	0.131	0.121	-1.01	0.001
Disinhibition	0.346	0.135	0.159	-1.15	0.001
Boredom susceptibility	0.211	0.116	0.98	0.78	0.601
Sensation-seeking	0.285	0.153	0.131	-1.73	0.001
Problem-focused coping	-0.490	0.241	-0.168	1.98	0.001
Emotion-focused coping	2.126	0.281	0.453	-6.94	0.001

Criterion variable: addiction potential ( $R^2=25.05$ ) ( $F=29.13$ ) ( $P<0.001$ )

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(problem-focused and emotion-focused) and addiction potential among students. There was a positive association between ‘thrill and adventure-seeking, experience-seeking, disinhibition, sensation-seeking and emotion-focused coping’ and addiction potential, and a negative relationship with problem-focused coping. However, no significant relationship was observed between boredom susceptibility and addiction potential.

Our findings are similar to Wagner’s (2011) study that was conducted on university students, where sensation-seeking could significantly predict risky behaviors such as alcohol abuse. Moreover, Brady and Donenberg (2006) and Slater (2003) showed the role of SS in tendency toward substance abuse and violence among adolescences and found an association between SS and substance abuse, tendency toward physical and sexual violence, particularly in the boredom susceptibility domain. Nower, Derevensky and Gupta (2004) investigated the association between impulsivity, sensation-seeking, coping, and substance abuse in young gamblers aged 17-21 years. Compared to their peers, men with severe gambling problems abused substances more, and used avoidance coping strategies such as sensation-seeking more, and busied themselves with other activities and jokes. Leeman, Toll, Taylor, and Volpicelli (2009) predicted alcohol-related problems in university students too and observed that higher sensation-seeking and disinhibition as well as signs of depression and a familial history of drinking made them more inclined towards drinking.

Opioid substances open the door toward new experiences, free risky behaviors and become an instrument for escaping monotony and boredom (Newcom & McGee, 1991). Research evidence also shows that avoid-

ant and emotion-focused CSs are more common among substance abusers. The latter are employed to avoid the problem and deny the situation, and are significantly associated with increased substance abuse (Epstein, Botvin, Diaz, Williams & Griffin, 2000; Kiamarsi & Abolghasemi, 2011). According to Ghasemi et al. (2011) when faced with an environmental stressor, addicts use inefficient emotion-focused CS like opioid substance abuse instead of problem-focused CS and resolution of the problematic state. This method of coping with stress results in a vicious cycle; the higher the level of sensation-seeking, the more the individual experiences stressful events and the application of inefficient CS leads to the persistence of the stressful event in the substance abuser. To interpret our results, we may say that high school students are still in their youth and hence seek greater stimulation and arousal. Therefore, they look for things that can satisfy these characteristics and see substance abuse as a way of fulfilling this desire. Earlier studies have supported this finding too. People with a tendency toward substance abuse use emotion-focused CS more than problem-focused CA, which not only unsettle the problem but also affects the person’s mental status and leads to psychological problems. Eventually, to escape such difficulties, the person turns to drugs.

Adapting to and controlling emotions arising from mental pressure are very difficult in individuals predisposed to addiction as they apply maladaptive coping strategies. The inability to correctly and efficiently cope with these situations leads to and worsens the feeling of no control over one’s life, lowering self-esteem and tendency toward maladaptive behaviors like substance abuse (Vazirian & Mostashari, 2002).



In summary, sensation-seeking and the type of coping strategy applied by students can predict their addiction potential. Considering the commonness of addiction in today's world, and especially among the youth, we propose empowering high school students by teaching helpful coping strategies and life skills. This will enable them to resist drug offers by their peers and prevent this ailing phenomenon in their future lives.

Training emotion regulation strategies and skills should be considered in prevention programs. Furthermore, since the study population of this study were only male students, we recommend investigating similar phenomena in female students as well.

### Conflict of Interests

The authors declared no conflict of interests.

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