



# Pathological narcissism, brain behavioral systems and tendency to substance abuse: The mediating role of self-control



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## ABSTRACT

This study examined the direct and indirect relationships between pathological narcissism, behavioral activation/inhibition systems (BAS/BIS), self-control, and substance abuse in a sample of Iranian students. Results showed that there are positive relationships between pathological narcissism and BAS with substance abuse and negative relationships between BIS and self-control with substance abuse. We tested, using structural equation model, whether pathological narcissism, BAS, and BIS predict substance abuse through self-control. Results confirmed the mediating role of self-control in the relations of pathological narcissism and BAS, but not BIS to substance abuse.

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## 1. Introduction

Substance abuse is one of the main problems in modern societies, with negative social consequences. Personality traits are important predictors of substance abuse. Our focus in this paper is on individual differences on pathological narcissism, behavioral activation system (BAS), behavioral inhibition system (BIS), and self-control.

### 1.1. Pathological narcissism and substance abuse

Pathological narcissism, characterized by grandiosity and vulnerability, has been found to be related to higher levels of substance abuse. Grandiosity involves intra-psychic process such as repressing negative aspects of self and other representations and distorting external information, leading to entitled attitudes and an inflated self-image without necessary skills, as well as engaging in fantasies of limitless power, superiority, and perfection. Grandiosity is often expressed through exploitativeness, lack of empathy, intense envy, aggression, and exhibitionism. Narcissistic vulnerability involves the conscious experience of helplessness, emptiness, low self-esteem, and shame (Cain, Pincus, & Ansell, 2008; Foster, McCain, Hibberts, Brunell, & Johnson, 2015; Sarason, 2004; Stinson et al., 2008).

Pathological narcissism has been related to substance abuse, because individuals with high levels of pathological narcissism engage in more selfish and immoral behaviors, take advantage of others, are unsuccessful to learn from their mistakes, and motivated by potential rewards (Brunell et al., 2013; Campbell, Bonacci, Shelton, Exline, & Bushman, 2004; Campbell, Bush, Brunell, & Shelton, 2005; Campbell & Foster, 2007; Foster & Trimm, 2008; Luhtanen & Crocker, 2005). Narcissists also show a tendency to discount the future effects of their decisions and choose smaller and immediate rewards rather than long-term distant rewards (Crysel, Crosier, & Webster, 2013; Jonason, Koenig, & Tost, 2010). MacLaren and Best (2013) found that disagreeable and grandiose aspects of narcissism mediated the effect of behavioral activation system (BAS) on drug use, gambling, sex, and abnormal close relationships. These results suggest that one mechanism through which the behavioral approach system may elevate addictive behavior among grandiose narcissists is their aggressive and competitor interpersonal life style.

### 1.2. BAS/BIS and substance abuse

BAS and BIS – which reflect a psychological orientation to rewarding and aversive stimuli, respectively – have been related to substance abuse. Among college students, for example, alcohol use and smoking have been associated with higher levels of BAS and lower levels of BIS. BAS has also been associated with other addictive behaviors such as pathological gambling (Hamilton, Sinha, & Potenza, 2014; Hundt,

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Kimbrel, Mitchell, & Nelson-Gray, 2008; O'Connor, Stewart, & Watt, 2009; Pardo, Aguilar, Molinuevo, & Torrubia, 2007).

### 1.3. Self-control and substance abuse

Self-control is another trait which has been linked to the tendency to substance abuse. It has been shown that the basic measure of addiction is the loss of self-control (Berkman, Falk, & Lieberman, 2011; Volkow, Wang, Tomasi, & Baler, 2013; Weinberg, 2013; West, 2006). Additionally, according to general theory of Gottfredson and Hirschi (1990), individual differences in self-control are connected to alcohol use, smoking in young people, unstable married life, and frequency of accidents in adults.

### 1.4. Self-control and pathological narcissism

Gottfredson and Hirschi (1990) proposed that social control is necessary for self-control to develop. People behave correctly at first to evade punishment from others and ultimately because they internalized social norms. Social control has a restricted impact over narcissists. While narcissists will try to have a wrong image of themselves on others, their motives are not usually accepted socially. They are successful for agentic traits such as intelligence and extraversion (Campbell, Rudich, & Sedikides, 2002). However, on communal traits such as prosociality, honesty, humility, agreeableness and morality, they do not present themselves successful. Low agreeableness in narcissists suggests that they are concerned more with themselves than others. Because of the lack of concern in narcissistic people for social acceptance, social control is unlikely to stop narcissist from doing abnormal and perilous behaviors such as substance abuse (Aghababaei, Mohammadtabar, & Saffarinia, 2014; Campbell et al., 2002; Graziano & Tobin, 2002).

### 1.5. Self-control and BAS/BIS

Self-control has been associated with higher levels of BIS and lower levels of BAS (Crowell, Kelley, & Schmeichel, 2014; O'Gorman & Baxter, 2002). Ent, Baumeister, and Tice (2015) reported that high scorers on self-control engage in behaviors that decrease their urge to abuse drugs.

So far several studies, which almost exclusively done on Western populations, have directly dealt with whether and how these traits are related to substance abuse. The present study would investigate the relations of pathological narcissism and BAS/BIS to the tendency to substance abuse in Iran. We would see whether the links between narcissism, BAS, and BIS are mediated by self-control.

## 2. Method

### 2.1. Participants and procedure

Participants included two hundred (38.5% female) Iranian university students. The age of the participants ranged from 19 to 35, with a mean of 24 (SD = 3.83). Participation in this study was voluntary and anonymous; all procedures conformed to institutional guidelines.

### 2.2. Materials

#### 2.2.1. Pathological Narcissism Inventory

The 52-item Pathological Narcissism Inventory (PNI; Pincus et al., 2009) was used to assess grandiose and vulnerable aspects of pathological narcissism. The PNI measures seven dimensions of pathological narcissism: contingent self-esteem, self-sacrificing self-enhancement, exploitative tendencies, hiding of the self, grandiose fantasy, devaluing, and entitlement rage. Sample items include "It's hard for me to feel good about myself unless I know other people like me" and "It irritates me when people don't notice how good a person I am". The PNI has shown to have validity and reliability, with consistency reliability at

.88 (Besser & Zeigler-Hill, 2010; Pincus et al., 2009). A five point Likert type scale was used. Higher scores reflect higher levels of pathological narcissism.

#### 2.2.2. Cognitive Self-Control Scale

The 23-item Cognitive Self-Control Scale (Grasmick, Tittle, Bursik, & Arneklev, 1993) was applied as an index of self-control. Sample items include "I lose my temper pretty easily" and "I often do whatever brings me pleasure here and now." This scale has shown reliability and validity in various populations (Grasmick et al., 1993; Ozdemir, Vazsonyi, & Cok, 2013). A four-point Likert type scale was applied, with higher scores reflecting lower levels of self-control.

#### 2.2.3. BIS/BAS scales

The 24-item widely used BIS/BAS scales (Carver & White, 1994) were applied to measure the sensitivity of behavioral approach and avoidance systems. In keeping with revised reinforcement sensitivity theory (RST), the BIS scale has been divided into separate subscales measuring Fear and Anxiety. A sample item for BIS is "I worry about making mistakes." The BAS scale includes items assessing desire for rewards, and persistence in pursuing desired reward. A sample item for BAS is "I often act on the spur of the moment." Items were rated on a 4-point Likert type scale.

#### 2.2.4. Addiction Acknowledgment Scale

The 13-item Addiction Acknowledgment Scale (Weed, McKenna, & Ben-Porath, 1992) is a content-based scale that measures people's tendency to accept the problems of alcohol and drugs. Sample items include "I have a drug or alcohol problem," and "People tell me I have a problem with alcohol but I disagree." It has been shown to have test-retest and consistency reliabilities. Each item was rated on a scale from 1 (yes) to 2 (no).

## 3. Results

Table 1 shows means, standard deviation, consistency reliabilities (Cronbach's alpha) and bivariate correlations of the study variables. Pathological narcissism was positively correlated with substance abuse and BAS, and negatively with self-control and BIS. BAS was positively correlated with substance abuse and negatively with self-control. BIS was negatively correlated with substance abuse, and positively correlated with self-control.

Path analyses were performed to examine the mediating role of self-control in the relationships of narcissism and BIS/BAS to tendency to substance abuse. The results indicated that the model fits the data very well. Table 2 shows the fit indices for the model. The examination of this model parameters after correcting (deleting the direction of BIS to self-control) showed that the coefficient direction of BAS to self-control, BAS to substance abuse, BIS to substance abuse, pathological narcissism to self-control, pathological narcissism to

**Table 1**  
Correlations of the study variables.

	Alpha	Mean	SD	1	2	3	4
1. Pathological narcissism	.94	131.98	30.26	1			
2. BAS	.91	45.43	4.72	.45**	1		
3. BIS	.94	14.70	2.86	-.33**	-.14*	1	
4. Self-control	.90	52.72	7.22	-.49**	-.14*	.29**	1
5. Substance abuse	.86	18.05	6.72	.48**	.45**	-.29**	-.43**

\*  $P < .05$ .

\*\*  $P < .01$ .

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