Research Paper: Prediction of Self- Destructiveness based on Perceived Stress, Brain-behavioral Systems and Defense Styles

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Abstract

The aim of the present study was to predict self- destructiveness based on perceived stress, brain-behavioral systems and defense styles. The population was the students of the Faculty of Pharmacy of Shahid Beheshti University of Medical Sciences in the academic year 2017-2018; through convenience sampling method, 150 completed questionnaires were analyzed. The design was correlational. chronic self- destructiveness scales (CSDS), perceived stress scale (PSS), behavioral inhibition-activation systems scale (BIS/BAS) and defense styles (DSQ) were used to collect data. The data were analyzed using Pearson's correlation coefficient as well as stepwise regression. The results showed that there was a relationship between self-destructiveness and perceived stress ($p \leq .01$), punishment sensitivity ($p \leq .001$), reward responsiveness ($p \leq .05$), drive ($p \leq .01$), and fun seeking ($p \leq .01$). Immature defense style ($p \leq .01$) and neurotic defense style ($p \leq .01$) have a relationship. Moreover, the regression analysis revealed that fun seeking ($R2=.33$), reward sensitivity ($R2=.26$), driving ($R2=.23$), neurotic defense styles ($R2=.17$), immature defense styles ($R2=.11$) and punishment sensitivity ($R2=.11$) could predict self- destructiveness. In conclusion, it can be said that perceived stress is in dynamic relationship with brain-behavioral systems and defense styles can predict self- destructiveness. Punishment sensitivity among brain-behavioral systems, and immature defense styles among the defense styles, were most strongly associated with self-destructiveness.

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1. Introduction

It is believed that the internal drive of self-preservation is deposited in all animals, but some people behave in a way that is incompatible with this principle of organization and in some cases, it is completely opposite (Nock, 2010). Self-mutilation and self-sabotage are the terms used in various texts for these opposing tendencies with the principle of self-preservation (Sharp & Schill, 1995). Self-destructiveness shows the limitation of the human model as a rational decision-maker (Baumeister & Scher, 1988) and as it is assumed, it is not a completely specific phenomenon, but its manifestations can be considered on a continuum and in connection to other human behaviors; In such a way that on one side of the continuum is adequate self-care and on the other side are highly self-destructive tendencies and at the end of it is suicide (Turp, 2002). Self-destructive tendencies are attempts to modify emotional, cognitive, or social experiences, and are related to various forms of mental disorders such as depression, anxiety, and externalizing disorders (Nock, 2010).

In models that have investigated self-destructiveness, stress is usually considered to be the starting point of self-destructiveness. Conceptualization of tension varies widely. Some researchers have initially defined stress as a stimulus in which an aspect of the physical or psychological environment causes individuals or society harm (Fink, 2016); for others, stress is as a physiological and psychological response to stimulation which is considered to be in such a hostile environment, and others have adopted a more dynamic perspective whereby the assessment of specific environmental pressures, coping resources, and available options all lead to determining the nature and extent of the stressful experience (Fink, 2011). Perceived stress can be defined as a degree to which a situation in a person's life is perceived as stressful (Cohen et al., 1983). In other words, perceived stress is a state that reflects the overall assessment of the importance and difficulty of environmental and personal challenges (Spada et al., 2008). Regarding stress and self- destructiveness, Najavits (2002) demonstrates that perceived stress leads to an increase in self- destructiveness in people with PTSD. Additionally, the research of Delker and Freyd (2014) show that an increase in stress leads to an increase in self- destructiveness, including drug and alcohol abuse. On the other hand, personality traits and dimensions are the most important intervening factors in psychological disorders. In order to explain the relationship between personality traits and people's susceptibility to psychological disorders, various theoretical models such as Eysenck's theory (1963) and Gray's (1994) have been used. in his neuropsychological theory, which is known as reinforcement sensitivity theory (RST) (Corr & Perkins, 2006), Gray (1994) presented a biological model of personality that includes three brain-behavioral systems. According to his belief, these brain-behavioral systems form the basis of individual differences and the activity of each of them leads to different emotional reactions such as fear and anxiety. The first system is the behavioral activating system (BAS), which responds to conditioned stimuli of reward and absence of punishment. The activity and increased sensitivity of this system cause positive

emotions, approach and active avoidance to be evoked (Gray & McNaughton, 2000). The sensitivity of this system indicates a person's impulsivity, and the two behavioral components of this system are approach (actively seeking rewards) and active avoidance (providing specific behavior to avoid punishment) (Wilson et al., 1990). The second system is the behavioral inhibition system (BIS), which responds to conditioned punishment and non-reward stimuli, as well as to novelty and innately fearful stimuli (Gray & McNaughton, 2000). The activity of this system leads the emotional state of anxiety as well as behavioral inhibition, passive avoidance, silence, increased attention and arousal. The two behavioral components of this system are: passive avoidance (avoidance of punishment through inactivity or submission) and extinction (discontinuation of unrewarded behaviors) (Wilson et al., 1990). The third system is the fight/flight system (FFS), which is structurally related to the amygdala and hypothalamus and is sensitive to disturbing stimuli.

The two behavioral components of this system, high activity of which is related to psychopathy, are resistance (defensive aggression) and escape (quick escape from the source of punishment) (Corr, 2002). Based on the theory of brain-behavioral systems, Gray (1994) puts forward the assumption that psychiatric disorders are caused by dysfunction (hyperactivity or hypoactivity) of one of the systems or their interactions. As a result, it is assumed that the behavioral activation system (BAS) and the behavioral inhibition system (BIS) can explain a wide range of disorders. In this context, the research of Komasi et al.

(2016) show that people whose behavioral brain system is highly sensitive to punishment demonstrate more neurotic behaviors and tend to self-harm in different ways. Alemikhah et al.'s research (2016) also illustrates that people whose brain-behavioral system has high sensitivity to punishment and innovativeness are more likely to self-destruct, including addiction, compared to people who have low sensitivity to innovativeness

In addition to personality traits, defensive styles have received clinical and research attention in recent years due to their especial importance in the conceptualization of mental disorders and their treatment from a psychoanalytical perspective (Cramer, 2000, 2003; Bowins, 2010; Brody et al., 2010; Costa & Brody, 2010; Brody & Carson, 2012). Defense styles are first proposed by Freud (1923 as cited in Shahidi Shadkam et al., 2010). According to Freud (1923), a person uses defensive styles to get rid of desires, impulses and unpleasant thoughts, as a way to modify and distort reality. These styles can be compromising, harmful or non-compromising (Shahidi Shadkam et al., 2010). Andrews et al. (1993) have distinguished 20 defense styles in terms of three categories of mature, immature and neurotic. Defense styles that are responsible for protecting "I" in the face of anxiety, depending on the type of action, may be normal or abnormal and efficient or ineffective. Freud (1923) considers the personal defense style, i.e., the frequency of using different defense mechanisms compared to each other, as the main variable for recognizing personality, pathology, and the degree of compromise. The mature defensive style is considered to

be adaptive, normal and efficient coping methods. Neurotic and immature defense mechanisms are maladaptive and ineffective coping methods. Psychotic defense mechanisms are more consistent than immature defense mechanisms and are less related to psychological problems (Besharat et al., 2001). According to Andrews et al.'s (1993) study, sublimation, humor, suppression, and anticipation are part of the mature style, undoing, idealization, and reaction formation are part of the psychotic style, and denial, devaluation, somatization, reasoning, passive aggression, and projection are considered part of the immature style.

In the context of the relationship between defense styles and mental disorders, Anna Freud (1992) believes that suffering from mental disorders is caused by the use of inflexible defense mechanisms. In addition, the research of Bragazzi et al. (2014) show that people who use immature defense styles tend to self-destruct when they are in trouble. Furthermore, Corruble et al.'s (2003) research reveal that those who use psychotic defense mechanisms such as projection, fragmentation, acting out, and somatization tend to self-destruct, including suicide. Obviously, some other researchers also believe that there is not always a meaningful relationship between defensive styles and anxiety (Mohamadpouryazdi, 2009; Afzali et al., 2008).

It is worth mentioning that as far as the investigation is carried out, previous researches that investigated self-destructive behaviors used researcher-made scales, or considered delinquent and self-injurious behaviors as examples of self-destructive

behavior. In this research, a valid scale (Mousavi et al., 2015) is used to measure self-destructiveness. Additionally, as far as the investigation is carried out, the combination of predictive variables considered in this study for predicting self-destructiveness has not been investigated in previous researches. According to the above, this research seeks to answer the question of whether it is possible to predict self- destructiveness based on perceived stress, brain-behavioral systems, and defense styles.

2. Method
2.1. Research design
Regression was used as the statistical analysis method of this correlational research.

2.2. Population and sample
The population of the present research consisted of 249 students of the Faculty of Pharmacy of Shahid Beheshti University of Medical Sciences in the second semester of the academic year 2018-2019. Authorization was obtained to complete the questionnaires after obtaining the necessary permits from the Islamic Azad University and referring to the Faculty of Pharmacy of Shahid Beheshti University. Estimating the sample size based on the research method for correlational projects, the researcher found that a minimum number of 50 people is required (VanVoorhis & Morgan, 2007). Non-probability (non-random) sampling method (convenience sampling) was used in the selection of samples. The questionnaires used in the research, including the Chronic Self- Destructiveness Scale, the Perceived Stress Scale, Behavioral Inhibition-activation Systems Scale, and the Defense Styles

Questionnaire were prepared electronically and the link was sent to the students through social networks. It should be noted that on top of the questionnaire form, the participants were assured that their answers will only be used in the scientific study and which is solely for research purposes and that the questionnaires will not be analyzed individually. The questionnaires were completed anonymously and the participants in the research had consciously consented to participating in this research. The sample size estimated was 150 people and the number of errors and non-completion in this type of questionnaire was zero; therefore, 150 questionnaires, that is 150 participants were in the analysis. The inclusion criterion for entering the research was being a student of the Faculty of Pharmacy of Shahid Beheshti University of Medical Sciences and consenting to participate in the research.

2.3. Tools

The following questionnaires were used to collect data:

Chronic Self-Destructive Scale (CSDS): This scale was developed by Kelley et al. (1985) and is used to evaluate self-destructive patterns and tendencies. It has 73 items answered on a Likert scale from 5 (extremely applies to me) to 0 (not at all applicable to me). The higher the individual score, the more self-destructive he or she is. Some items are specific to women and some to men, and some items are common between the two sexes.

The internal consistency of the original version has been reported to be 0.97 to 0.73 using Cronbach's alpha coefficient and one-month test-retest reliability coefficient of

0.98 to 0.90 (Kelley et al., 1985). Mousavi et al. (2015) prepared the Persian version of this scale: factor analysis of men's items (23 items), four factors of negligence and inconsideration (items 68, 54, 69, 14, 26), neglect (items 18, 66, 65, 62, 2, 29, 67, 25), risk-taking (items 12, 34, 3, 21, 32, 30, 17), stupefaction (items 70, 71, 27) and factor analysis of women's items (19 items), three factors of neglect and risk taking (56, 62, 25, 67, 32, 12, 8, 47, 23), irregularity (18, 33, 66, 37, 39, 40) and lack of preservation and planning (15, 11, 43, 29). Four factors of men's scale explained 50.5% and three factors of women's scale explained 45.4% of the variance of the total score. Cronbach's alpha coefficient for men and women were 0.849 and 0.845, respectively, and Cronbach's alpha coefficient for male factors were 0.698-0.865 and 0.685-0.800 for female factors. The internal homogeneity of the scale was confirmed by calculating the Pearson correlation coefficient of the scores of each factor with each other and with the total score and Spearman's correlation coefficient between the items of each factor. Convergent validity was confirmed by calculating the Pearson correlation coefficient between the total score and the score of the CSDS factors with depression, shame, guilt, internal self-criticism and comparative self-criticism variables. Correlation of total score of CSDS in women with the above variables were 0.42, 0.51, 0.49, 0.36 and 0.27 respectively and in men with the same variables were reported to be 0.38, 0.38, 0.43, 0.60. and 0.35 respectively (Mousavi et al., 2015).

Perceived Stress Scale (PSS): This scale was designed by Cohen et al. (1983) and has 10 and 14-question formats. In this

study, the 14-question format was used. Items are scored on a Likert scale from 0 (none) to 4 (very much). The range of scores varies from 0 to 56 and the higher score of the subjects in this scale indicates a high level of perceived stress (Cohen et al., 1983). Cronbach's alpha method was reported to be 0.84 to 0.86. The alpha obtained for the Persian version in a study on 250 undergraduate students was 0.81 (Ghorbani et al., 2002). Factor analysis using the principal components method on the Persian version led to the extraction of two factors: ability to cope with stress and negative feeling from stress, which together explained 48.2% of the total variance (Mousavi et al., 2014).

Behavioral Inhibition-Activation Systems Scale (BIS/BAS): This scale was created by Carver and White (1994) in order to evaluate individual differences in the sensitivity of behavioral inhibition and activation systems. This scale has 20 questions that measure the activity of the behavioral inhibition system by means of the punishment sensitivity subscale (1, 2, 3, 4, 5, 6, 7) and the activity of the behavioral activation system are evaluated by means of three subscales of reward responsiveness (8, 9, 10, 11, 12), drive (13, 14, 15, 16) and fun seeking (17, 18, 19, 20). Participants answer these questions on a 4-point Likert scale from not true (1) to completely true (4). Behavioral inhibition refers to the expected sensitivity to anxiety when a person is exposed to punishment cues (e.g., I feel anxious when I think that I have done something incomplete). Reward responsiveness refers to the extent to which rewards influence positive energy and emotions (e.g., I feel energized when I get what I need). Drive refers to the degree to

which a person is actively oriented toward attractive goals (e.g., when I feel I need something, I try hard to get it). Fun seeking refers to the tendency to seek out new stimuli and engage in rewarding activities (e.g., I seek out new and exciting situations). The higher the individual score, the stronger it is in that scale (Mohammadi, 2008). Cronbach's alpha of the subscale of punishment sensitivity, reward reponsiveness, drive and fun seeking were reported to be 0.74, 0.73, 0.76 and 0.66, respectively. Correlation of BIS subscale with Manifest Anxiety Scale was 0.58 and correlation of drive, reward responsiveness and fun seeking with extraversion subscale of Eysenck's scale were 0.41, 0.39 and 0.59 respectively; moreover, correlation of hypomania subscale from MMPI scale with drive and fun seeking were reported to be 0.33 and 0.37 respectively (Carver & White, 1994). Cronbach's alpha of the Persian version for the above subscales were reported to be 0.69, 0.74, 0.87 and 0.65 respectively, and the retest reliability coefficient were 0.68, 0.73, 0.71 and 0.62 respectively. In addition, the correlation coefficient of inhibition subscale with depression and anxiety was obtained as 0.22 and 0.31 respectively, which indicates the convergent validity of the scale (Mohammadi, 2008).

The Defense Styles Questionnaire (DSQ): This questionnaire was compiled by Andrews et al. (1993) and has 40 items. Responses are made on a 9-point Likert scale from strongly agree (9) to strongly disagree (1) and rank the 20 defense styles (based on the hierarchical pattern of defenses) in terms of 3 mature defense style (2, 3, 5, 7, 21, 24, 29, 35), immature (1, 6, 11, 17, 28, 33, 34, 40) and neurotic (4, 8, 9,

10, 12, 13, 14, 15, 16, 18, 19, 20, 22, 23, 25, 26, 27, 30, 31, 32, 36, 37, 38, 39). In general, the average score of the individual in each style is determined and compared with the average score of the individual in other styles; A person's dominant style is the style in which he or she gets the highest score. Cronbach's alpha coefficient of each defense style was reported to be 0.32 to 0.80 by Andrews et al. (1993). This scale was able to distinguish anxiety patients from healthy ones and child abuser parents; Compared to healthy people, anxiety patients were less likely to use mature defense style, such as humor, suppression, and exaltation, and more likely to use neurotic defense style, such as reaction formation, and immature defense style, such as displacement, projection, and somatization. Abusive parents employ more neurotic defense styles, such as reaction formation, and maladaptive defense styles, such as denial, projection, and splitting (Andrews et al., 1993). In the case of the Persian version, the alpha coefficient of the three mature, immature, and irritable styles were reported as 0.94, 0.92, and 0.91, respectively, and the test-retest reliability for these three styles were reported as 0.87, 0.84, and 0.78, respectively. The correlation coefficient of these three styles with psychological well-being were 0.50, -0.49, and -0.38 respectively, and with psychological helplessness, they were -0.42, 0.46, and 0.36, respectively (Besharat et al. 2001).

2.4. Data analysis method

In order to describe the data, descriptive statistics indices (mean and variance) and inferential statistics indices (Pearson correlation coefficient and stepwise regression) were used. The data was analyzed using SPSS 22 software.

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3. Results

It is worth mentioning that 26 (174.3%) of the participants were men and 124 (82.7%) were women. The age range of the participants was from 18 to 42 years. The frequency (and percentage) of participants in the age groups of 18-26, 27-35 and 36-42 years old were 44 (29.3%), 58 (38.6%) and 48 (32.1%) respectively.

The results of Smirnoff's Klomograph test (: sensitivity to punishment (Z=1.70, P=.061), reward responsiveness (Z=2.11, P=.058), drive (Z=2.31, P=.056), fun seeking (Z =2.49, P=.060), mature defense style (Z=1.75, P=.059), immature defense styles (Z=2.06, P=.078), neurotic defense styles (Z=1.68, P=. 072), self-destructiveness (Z=2.60, P=.083), perceived stress (Z=1.61, P=.070)) showed that the data had a normal curve, and therefore for the inferential analysis of the data from parametric tests (Pearson's correlation coefficient and regression) were run.

The use of Pearson's correlation revealed that all predictor variables had a significant relationship with self- destructiveness. Among the predictor variables, the correlation of reward sensitivity, drive, fun seeking and mature defense style with self-destructiveness was negative (Table 1) .

Table 1

Correlation of research variables with self- destructiveness

Variables	N	Pearson	Sig
Perceived Stress	150	0.20	0.01
Sensitivity to punishment	150	0.36	0.001
Reward responsiveness	150	-0.20	0.05
Drive	150	-0.20	0.01
Fun seeking	150	-0.25	0.01
Mature defense style	150	-0.09	0.2
Immature defense style	150	0.33	0.01
Neurotic defense style	150	0.39	0.01

The subscales of brain-behavioral systems (punishment sensitivity, reward responsiveness, drive and fun seeking), subscales of defense styles (mature, immature, irritable) and perceived stress as a predictor variable and self-destructiveness as a criterion variable were analyzed.

Table 2

Summary of regression analysis for predicting self- destructiveness based on perceived stress brain-behavioral systems and defense styles

Resource	SS	df	MS	F	Sig
regression	11543.42	6	19238.40	16.28	<0.001
residual	168971.84	143	1181.62		

The results of the regression test showed that these variables can predict self-destructiveness (Table 2).

Further examination of the data demonstrated that among the subscales of punishment sensitivity reward responsiveness, fun seeking, and drive were related to behavioral brain systems and the subscale of sensitivity to punishment (t=6.08, BETA=0.57) had more predictive power than the other three subscales.

Table 3

Regression coefficients for predicting self- destructiveness based on perceived stress, brain behavioral systems and defense styles

Scale	Subscales	B	Std	BETA	T	P	R^2
Behavioral brain systems	Sensitivity to punishment	12.61	2.07	0.573	6.08	<0.001	0.11
	drive	-6.52	1.72	-0.281	-3.77	<0.001	0.23
	Reward responsiveness	-7.43	1.93	-0326	-3.83	<0.001	0.26
	Fun seeking	-8.55	3.34	-0.269	-2.55	0.001	0.33
Defense styles	Mature style	0.03	0.03	·0.08	-1.17	0.24	
	Immature	-0.71	0.13	0.58	5.44	<0.001	0.11
	Neurotic	-0.81	0.56	-0.34	-3.22	0.002	0.17
Perceived Stress		0.28	0.10	0.20	2.73	0.007	

It is worth noting that the highest predictive power regarding the three subscales of defense styles was related to the immature subscale (t=5.44, BETA=0.58) (Table 3).

4. Discussion

The aim of the current research was to predict self- destructiveness based on perceived stress, brain-behavioral systems and defense styles. According to the results, perceived stress (r=.20, P=.01), sensitivity to punishment (r=.36, P=.001, r2=.11), drive (r=-.20, P=. 01, r2=.23), reward responsiveness (r=-.22, P=.05, r2=.26), fun seeking (r=-.25, P=.01, r2=.33), immature defense style (r=.33, P=.01, r2=.11) and neurotic defense style (r=.39, P=.01, r2=.17) exerted a significant effect on the prediction value of self- destructiveness. Similar to the results of the present study, the results of previous studies also revealed that perceived stress leads to an increase in self- destructiveness (Najavits, 2002; Delker & Freyd, 2014). The predictive power of immature and neurotic defense styles on self- destructiveness is also consistent with previous research (Bragazzi et al., 2014; Corruble et al., 2003). Moreover, in line with the present study, which showed that the predictive power of sensitivity to punishment was higher than other brain systems, the research of Komasi et al. (2016) and Alemikhah et al. (2016) illustrated that high sensitivity to punishment is associated with self-harm.

The high level of physiological arousal, the history of abuse in childhood and growing up in hostile and criticizing families cause interpersonal and communication vulnerabilities, so that they experience more intense negative emotions and cognitions; furthermore, the ability to solve problems in social situations and communication with others are impeded in them. These defects make them unable to show adaptive reactions to the situation in stressful situations (Brody, 2012). This issue confirms the connection between brain mechanisms, defense mechanisms and self- destructiveness. Additionally, in confirming and supporting the role of personal and relational vulnerabilities in creating and perpetuating self-injury, Nock and Mendes (2008) reported that people with self-injury in a stressful situation left the situation sooner and their ability to use adaptive solutions for solving social problems was weaker than normal teenagers, and also their level of confidence in the solutions they give for a hypothetical situation was lower than normal teenagers; In other words, people with a high level of self- destructiveness use immature and neurotic defense styles. The current study showed that among defense styles, immature defense style has more predictive power for self- destructiveness. These results confirm issues proposed theoretically and through research; Although both neurotic and immature defense styles are maladaptive and ineffective coping strategies, neurotic defense styles are more adaptive than immature defense styles and are less related to psychological problems (Besharat et al., 2001). On the other hand, Brody and Carson's (2012) research has shown that the factors that cause self-injury were: high emotional reactivity due to high impulsivity and experience-seeking, experiencing concentrated emotions such as shame and

guilt, low distress tolerance and defects in Regulating emotional arousal states, which can be related to immature and neurotic defense styles.

The present study demonstrated that among the behavioral brain systems, sensitivity to punishment was able to predict self- destructiveness more than other subscales. This finding is in line with brain-behavioral systems theory; This brain-behavioral system is sensitive to anxiety-inducing conditions, punishment and non-reward and is activated in fear-inducing conditions. The activity of this system causes the emotional state of anxiety and behavioral inhibition, passive avoidance and silence. The two behavioral components of this system are: passive avoidance (avoidance of punishment through inactivity or submission) and extinction (stopping behaviors that do not result in reward) (Gray & McNaughton, 2000). Therefore, when this system is active in people, being in a stressful situation can lead to the occurrence of behaviors that are in accordance with the definitions of self- destructiveness. Passive avoidance and silence, which is one of the behavioral components of this system, is considered to be a manifestation of self-destructiveness, since it reduces the probability of future success. For further explanation, it is appropriate to refer to one of the patterns of self-destructiveness; The balancing model of self-destructiveness requires the choice of behaviors that the price of the specific benefits of which is self-harm, in other words, harm or danger is accepted as a necessary companion to achieving other goals. This pattern refers to a situational structure that requires two competing, but unrelated goals. Usually, in this pattern, a person faces a situation where there is a mismatch between two desirable goals, in such a way that pursuing one of them reduces the person's chance to achieve the other. Many balancing act situations require an immediate goal and a long-term goal, and thus it is possible for a person to make a bad choice by focusing on immediate and short-term outcomes. Urgency creates a lot of perspective and so the short-term benefits are quite obvious to people; however, the long-term goals seem distant. Therefore, factors that increase short-term focus increase the frequency of self-destructive responses in this model. Emotional states are by nature transient and short-lived, and therefore it is likely that they make a decision placing too much importance on short-term and immediate outcomes. In particular, negative emotional states and the tendency to end them quickly should be considered (Leith & Baumeister, 1996). As stated, the brain-behavioral system of sensitivity to punishment is sensitive to anxiety-provoking, punishing and non-reward conditions activated in fearful conditions, and therefore, according to the balance model, there is a tendency to suppress negative emotions in people in whom this brain-behavioral system is active this can lead to self-destructive choices.

The present study was conducted only on pharmacy students of Shahid Beheshti University of Medical Sciences, so caution should be observed in generalizing the findings to other societies. It is suggested to carry out the present study on other demographic groups as well, and with a sufficient number of samples of each sex, it is possible to compare women and men.

5. Conclusion

Perceived stress is in dynamic relationship with brain-behavioral systems and defense styles can predict self- destructiveness. Among the brain-behavioral systems, punishment sensitivity and among the defense styles, immature defense styles had a stronger relationship with self-destructiveness.

Acknowledgments

Conflict of interest

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