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ORIGINAL ARTICLE/*ÖZGÜN MAKALE*

The Role Of Early Maladaptive Schemas And Coping Strategies In Substance Dependence

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Abstract

Objective: The aim of this study was to evaluate the early maladaptive schemas and coping strategies of substance dependents. We hypothesized that substance dependents would have more maladaptive schemas and would use less adaptive coping strategies than healthy controls.

Methods: Thirty-two patients diagnosed with substance dependence and 31 control subjects without any psychiatric disorders were evaluated via Young Schema Questionnaire-SF, COPE, and Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I).

Results: The substance dependents scored significantly higher than the control group in nine out of fourteen early maladaptive schemas. In terms of coping strategies, the substance dependents scored significantly lower than the control group in positive reinterpretation and growth, seeking social support for instrumental reasons, active coping, and seeking social support for emotional reasons, and significantly higher in behavioral disengagement and alcohol-drug disengagement subscales. Moreover, alcohol-drug disengagement type of coping style was significantly predicted by schemas of emotional deprivation, emotional inhibition, enmeshment/dependence, entitlement/ insufficient self-control, abandonment/instability, punitiveness, defectiveness/shame, vulnerability to harm or illness, and unrelenting standards/hypercriticalness.

Discussion: Current study showed that the substance dependents had more maladaptive unhealthy core beliefs and ineffective coping strategies than a non-clinical control group. These findings support the importance of early maladaptive schemas which might be the underlying factor for the dependence problem, and might prevent the person to deal with the problem with more active and problem focused coping strategies. **(Journal of Cognitive Behavioral Psychotherapy and Research 2014; 3: 162-170)**

Keywords: Substance, Substance dependence, early maladaptive schemas, coping behavior

Özet

Erken Dönem Uyumsuz Şemaların ve Başa Çıkma Tutumlarının Madde Bağımlılığındaki Rolü

Amaç: Bu çalışmanın amacı madde bağımlılarında erken dönem uyumsuz şemaların ve başa çıkma tutumlarının değerlendirilmesidir.

Yöntem: Madde bağımlılığı tanısı alan (n=32) ve herhangi bir psikiyatrik bozukluk tanısı almayan (n=31) katılımcılar Young Şema Ölçeği Kısa Formu, COPE ve SCID-I ile değerlendirilmiştir.

Sonuç: Madde bağımlıları grubu 14 erken dönem uyumsuz şemanın 9'unda kontrol grubundan anlamlı düzeyde daha yüksek puan almışlardır. Baş etme stratejileri açısından değerlendirildiğinde madde bağımlıları kontrol grubundan pozitif yeniden yorumlama ve gelişme, yararlı sosyal destek kullanımı, aktif başa çıkma ve duygusal sosyal destek kullanımı boyutlarında daha düşük; davranışsal olarak boş verme ve madde kullanımı boyutlarından daha yüksek puan almışlardır. Bununla birlikte erken dönem uyumsuz şemalardan duygusal yoksunluk, duyguları bastırma, iç içe geçme/bağımlılık, ayrıcalıklılık/yetersiz özdenetim, terk edilme, cezalandırılma, kusurluluk, tehditler karşısında dayanıksızlık ve yüksek standartlar alt boyutları madde kullanımı alt ölçeğini anlamlı düzeyde yordamaktadır.

Tartışma: Bu çalışma, madde bağımlılarının sağlıklı kontrol grubuna göre daha fazla uyumsuz şemaları ve sağlıksız baş etme tutumları olabileceğine işaret etmektedir. Bulgular, bağımlılık probleminin altında yatabilecek faktörlerden biri olan ve kişinin bağımlılık sorunuyla daha aktif ve problem odaklı baş etme tutumlarını kullanmasını engelleyebilen erken dönem uyumsuz şemaların önemini vurgulamaktadır. **(Bilişsel Davranışçı Psikoterapi ve Araştırmalar Dergisi 2014; 3: 162-170)**

Anahtar Kelimeler: Madde, Madde bağımlılığı, erken dönem uyumsuz şemalar, başa çıkma davranışı

INTRODUCTION

Substance dependence is a prevalent and chronic health problem throughout the world, especially among young adults. Substance use is associated not only with negative health outcomes but also with societal problems. Therefore, studies examining the factors that might contribute to the development and maintenance of this increasing global problem are needed for prevention and intervention strategies.

The relevance of early maladaptive schemas to psychological problems has been examined by many researchers. Early maladaptive schemas are defined as unconditional, enduring negative thoughts and beliefs about oneself, others and the world (Young et al. 2003). Maladaptive schemas are developed early in life during dysfunctional experiences with parents, siblings and peers; therefore they often form the core of self-concept and perception of the environment. Since early maladaptive schemas are repeated and reinforced throughout childhood, adolescence and adulthood, they become pervasive and resistant to change (Young 1999, Young et al. 2003). Young (1999) proposed that early maladaptive schemas often generate high levels of negative affect and can lead directly or indirectly to a range of psychological stress like depression, destructive relationships, inadequate work performance, psychosomatic disorders or addictions like alcohol and drug use.

When the nature of the disorder is taken into consideration, the role of schema-level cognitions underlying the substance dependence problem is important to investigate. However, there are limited researches examining the early maladaptive schemas of substance abusers and dependents (Ball 1998, Ball and Young 2000, Brotchie et al. 2004, Roper et al. 2010, Shorey et al. 2012a, Shorey et al. 2012b). Brotchie et al. (2004) compared alcohol abusers, opiate abusers, combined alcohol and opiate abusers and non-clinical groups in terms of their core beliefs, and found that all three clinical groups had unhealthier core beliefs relative to the non-clinical group. Similarly, in another study, alcohol dependents scored significantly higher on early maladaptive schemas than non-clinical control group (Roper et al. 2010). Early maladaptive schemas were more prevalent among male and female opioid users and females scored significantly higher than males on a number of schemas (Shorey et al. 2012a). In another study, female substance abusers scored higher than a non-clinical group of female college students on 16 of 18 early maladaptive schemas (Shorey et al. 2012b).

Ball (1998) proposed that the experience of thoughts, feelings, and impulses associated with early maladaptive schemas is distressing for the individual, thus the person develops some behavioral strategies to cope. Substance might be used as a way of coping with the emotional pain associated with early maladaptive schemas. Therefore, increased substance use might be associated with the attempt of cognitive and behavioral avoidance of early maladaptive schemas (Brotchie et al. 2007). Coping is a cognitive and behavioral process that involves efforts to manage life stressors (Lazarus and Folkman 1984) aiming to keep one's own balance or sense of equilibrium against threatening and emotionally harming situations (Roberts 2001). Substance abuse may become a general coping response to negative emotional states because of a lack of adaptive coping strategies, and then contribute to the maintenance of the substance abuse problem (Cooper et al. 1988).

The current study aimed to investigate whether the substance dependence was associated with particular maladaptive cognitive schemas and coping strategies. We hypothesized that substance dependents would have more maladaptive schemas and would use less adaptive coping strategies than healthy controls. Secondly, substance dependence, as a coping strategy, would be predicted from some of the early maladaptive schemas in substance dependence group.

METHOD

Participants

Thirty-two male patients (Mean age=24.12, SD=4.44) who were diagnosed with substance dependence according to DSM-IV criteria and hospitalized for detoxification, participated in the study. The control group composed of 31 male subjects (Mean age=23.32, SD=2.85) who did not have any psychiatric disorders. Demographic characteristics of the participants were presented in Table 1.

Procedure

The study was approved by the local ethical committee. Subjects who were hospitalized for detoxification and accepted to participate in the study composed the study sample. Informed consents were obtained from the participants. All the participants have been followed up for three or four weeks for detoxifications. We did not apply any psychometric scales to explore the metal and cognitive functions during this deprivation period since some of the patients demonstrated

Table 1. Demographic Characteristics of the Participants.

		Substance Dependent Group (n=32)	Control Group (n=31)
Education Level	Non-educated	4 (12.5%)	–
	Primary school	17 (53.1%)	9 (29%)
	High school	8 (25%)	16 (51.6%)
	University	1 (3.1%)	6 (19.4%)
Substance	Marijuana	7 (21.9%)	
	Marijuana & inhalants	1 (3.1%)	
	Marijuana, cocaine, heroine & inhalants	21 (65.6%)	
Frequency of substance use	Sometimes	3 (9.4%)	
	Frequently	28 (87.5%)	
	Everyday	1 (3.1%)	

psychomotor agitations and intensive anxiety. Clinical follow-up was continued until the detoxification process and then the questionnaires were applied to the patients during the non-deprivation period.

All of the laboratories tests have been completed during the clinical course. Blood sample was obtained from the antecubital vein. Thyroid functions, vitamin profile, renal and liver functions were in a normal range for most of the patients. Some of the patients had mild elevated liver enzymes but we didn't exclude any of them. Patients diagnosed with substance dependence and HIV, HBV and HCV transporter had been well evaluated to explore the biochemical abnormalities. We did not exclude any patient diagnosed with viral infections. The entire psychometric scales have been applied at the end of detoxification period. The fallow up period changed depending on the patients' clinical situation. At the end of the follow up period two patients who still demonstrated withdrawal symptoms because of intensive substance misuse were excluded. One patient could not fill up the questionnaires properly. Two participants were excluded because of comorbid psychiatric diagnosis.

Schemas and coping strategies of the substance dependents were evaluated via Young Schema Questionnaire-Short Form 3 (YSQ-SF3) (Young 1990, Young 2003) and COPE (Carver et al. 1989). Socio-demographic properties, kind of substance use, frequency and duration of substance use were obtained through socio-demographic information form. Moreover, each participant was evaluated through SCID-I. The control group, which was composed of same age range male subjects without any psychiatric disorders, was evaluated through the same procedure.

Materials

***Structured Diagnostic Interview for DSM-IV (SCID-I)*:** SCID-I is a semi-structured assessment scale in which DSM-IV diagnostic categories are systematically reviewed in clinical samples (First et al. 1997). Turkish version of the instrument was used in the current study (Özkürkçügil et al. 1999).

Young Schema Questionnaire-Short Form 3 (YSQ-SF3): Early maladaptive schemas were evaluated via YSQ-SF3 (Young 1990, Young 2003). The scale has 18 subscales grouped into five schema domains as Rejection, Impaired autonomy and performance, Impaired limits, Other-directedness, Over vigilance and Inhibition. The subscales are consecutively: Abandonment/instability, Mistrust/abuse, Emotional deprivation, Defectiveness/shame, Social isolation/alienation, Dependence/incompetence, Vulnerability to harm and illness, Enmeshment/undeveloped self, Failure, Entitlement/grandiosity, Insufficient self-control/self-discipline, Subjugation, Self-sacrifice, Approval-seeking/recognition seeking, Negativity/pessimism, Emotional inhibition, Unrelenting standards/hypercriticalness, and Punitiveness. Ninety items are rated on a 6-point Likert-type scale (1= entirely untrue of me, 6= describes me perfectly), and each subscale consists of 5 items. The score ob-

tained on the subscales varies between 5 and 30. A Turkish reliability and validity study of YSQ-SF3 found a 14-factor structure (see Table-II), in contrast to the original 18-factor structure. Test-retest and internal consistency analysis revealed statistically significant coefficients. As convergent validity, correlational analysis with SCL-90-R showed statistically significant coefficients. t-test analysis that compared the YSQ subscale scores of clinical and normal populations yielded significant differences in some schema and schema domains (Soygüt et al. 2009).

COPE: COPE (Carver et al. 1989, COPE 2007) was used to measure participants' coping strategies and activities through stressful life events. It is a 60-item, 4-point Likert-type scale (1 = I usually don't do this at all, 4= I usually do this a lot) that assess 15 different coping strategies: Positive reinterpretation and growth, Mental disengagement, Focus on and venting of emotions, Seeking social support for instrumental reasons, Active coping, Denial, Religious coping, Humor, Behavioral disengagement, Restraint coping, Seeking social support for emotional reasons, Substance use, Acceptance, Suppressing of competing activities, and Planning. The psychometric properties of the COPE inventory in Turkish sample were conducted by Ağargün et al. (2005).

Data Analysis

A statistical analysis was performed using SPSS for Windows 16.0. (SPSS Inc, Chicago, IL). A one-way MANOVA was conducted to examine the differences between the substance dependent and the control groups in terms of early maladaptive schemas and coping strategies. A regression analysis was used in order to examine the relationship between early maladaptive schemas and alcohol-drug disengagement coping style in the substance dependent group.

RESULTS

The substance dependent and the control groups were compared in terms of early maladaptive schemas by using a one-way MANOVA (see Table II). Results revealed that type of group (substance dependent and control groups) had a significant main effect on early maladaptive schemas [Multivariate F (14,48)=2.85, p <.01; Wilks' Lambda=.55; partial η2=.45]. Univariate analyses were examined with Bonferroni adjustment, therefore alpha levels lower than 0.0035 were accepted as significant. As can be seen in Table 2, the substance dependent group scored significantly higher than the control group in Abandonment/instability [F(1,61)=13.03, p <.0035, partial η2=.18], Emotional deprivation [F(1,61)=27.95, p <.0035, partial η2=.31],

Table 2. Comparison of substance dependents and control groups in terms of early maladaptive schemas

Schemas	Substance dependent group (Mean± SD)	Control Group (Mean± SD)	Univariate F (1,61)
Abandonment/instability	14.27±3.29	10.50±4.86	13.03*
Emotional deprivation	15.19±4.79	9.20±4.15	27.95*
Defectiveness/shame	17.82±5.15	11.28±4.57	28.30*
Social isolation/mistrust	23.27±6.05	16.25±8.06	15.33*
Vulnerability to harm or illness	15.45±3.70	11.64±4.65	12.97*
Enmeshment/dependence	26.25±6.44	18.68±8.69	15.47*
Failure	18.34±5.41	12.11±5.44	20.79*
Entitlement/ insufficient self-control	24.47±5.64	22.29±6.33	2.08
Self-sacrifice	16.43±2.89	16.25±4.42	0.03
Approval-seeking/recognition-seeking	20.25±3.85	20.59±5.84	0.07
Pessimism	16.01±3.99	11.60±5.45	13.43*
Emotional inhibition	16.74±3.71	13.13±3.85	14.25*
Unrelenting standards/hypercriticalness	9.39±2.14	10.22±3.45	1.32
Punitiveness	20.10±4.04	20.58±6.04	0.1

*p<.0035

Defectiveness/shame [F(1,61)=28.30, p <.0035, partial η2=.32], Social isolation/mistrust [F(1,61)=15.33, p <.0035, partial η2=.20], Vulnerability to harm or illness [F(1,61)=12.97, p <.0035, partial η2=.18], Enmeshment/dependence [F(1,61)=15.47, p <.0035, partial η2=.20], Failure [F(1,61)=20.79, p <.0035, partial η2=.25], Pessimism [F(1,61)=13.43, p <.0035, partial η2=.18], and Emotional inhibition [F(1,61)=14.25, p <.0035, partial η2=.19] subscales.

Similarly, MANOVA was conducted to analyze the differences between the substance dependent and the control groups in terms of coping strategies (see Table-3). Results revealed that type of group (substance dependent and control groups) had a significant main effect on coping strategies [Multivariate F (15,47)=8.47, p <.001; Wilks' Lambda=.27; partial η2=.73]. Univariate analyses were examined with Bonferroni adjustment, therefore alpha levels lower than 0.0033 were accepted as significant. The substance dependents scored significantly lower than the control group in Positive reinterpretation and growth [F(1,61)=32.77, p <.0033, partial η2=.35], Seeking social support for instrumental reasons [F(1,61)=28.66, p <.0033, partial η2=.32], Active coping [F(1,61)=12.73, p <.0033, partial η2=.17], and Seeking social support for emotional reasons [F(1,61)=26.26, p <.0033, partial η2=.30]. On the other hand, Behavioral disengagement [F(1,61)=19.24, p <.0033, partial η2=.24] and Alcohol-drug disengagement [F(1,61)=49.62, p <.0033, partial η2=.45] scores of the substance dependents were significantly higher than the scores of control group (see Table-3).

Finally, a regression analysis was conducted to examine the possible predictors of Alcohol-drug disengagement coping style in substance dependent group (see Table-4). Among the early maladaptive schemas, Emotional deprivation (Beta = 1.55, p <.001), Emotional inhibition (Beta = 3.51, p <.001), Enmeshment/ dependence (Beta = 5.30, p <.001), Entitlement/ insufficient self-control (Beta = 1.87, p <.001), Abandonment/instability (Beta = .79, p <.05), Punitiveness (Beta = .93, p <.01), Defectiveness/shame (Beta = 5.15, p <.001), Vulnerability to harm or illness (Beta = 1.72, p <.001), and Unrelenting standards/hypercriticalness (Beta = 1.22, p <.01) significantly predicted Alcohol-drug disengagement coping style.

Table 3. Comparison of substance dependents and control groups in terms of coping strategies

COPE	Substance dependent group (Mean± SD)	Control Group (Mean± SD)	Univariate F (1,61)
Positive Reinterpretation and Growth	9.64±2.33	13.06±2.40	32.77*
Mental Disengagement	9.18±1.27	9.90±2.58	1.95
Focus on and Venting of Emotions	10.83±1.58	10.83±2.70	0.1
Seeking Social Support for Instrumental Reasons	8.41±1.83	11.75±3.00	28.66*
Active Coping	10.05±2.30	12.19±2.44	12.73*
Denial	7.33±1.65	7.51±2.72	0.1
Turning to Religion	10.82±3.21	11.90±3.10	1.83
Humor	8.56±1.79	8.40±2.96	0.07
Behavioral Disengagement	9.29±2.13	6.75±2.44	19.24*
Restraint Coping	10.31±2.09	10.20±2.31	0.04
Seeking Social Support for Emotional Reasons	8.46±2.31	11.63±2.58	26.26*
Alcohol-drug Disengagement	12.20±2.37	6.77±3.63	49.62*
Acceptance	9.82±2.26	9.33±2.69	0.61
Suppressing of Competing Activities	10.26±2.13	10.48±2.20	0.15
Planning	10.06±2.49	11.70±2.46	6.86

*p<.0033

Table 4. Early maladaptive schemas as predictors of alcohol-drug disengagement coping style

Variables	β	t	R^2	df	F
Emotional Deprivation	1.55***	4.85			
Failure	.48	.85			
Pessimism	.09	.23			
Social Isolation/mistrust	.68	.98			
Emotional Inhibition	3.51***	4.62			
Approval Seeking/recognition seeking	.48	1.45			
Enmeshment/dependence	5.30***	5.24			
Entitlement/insufficient self-control	1.87***	4.42			
Self Sacrifice	.70	1.44			
Abandonment/instability	.79*	2.35			
Punitiveness	.93**	4.16			
Defectiveness/shame	5.15***	5.03			
Vulnerability to Harm	1.71***	4.36			
Unrelenting Standards/hypercriticalness	1.22**	3.03			
			87	14.31	8.18***

***p <.001, **p<.01, *p <.05

DISCUSSION

The objective of this study was to understand the potential relevance of particular maladaptive schemas and coping strategies on substance dependence.

Results yielded differences between the clinical and nonclinical groups on nine out of fourteen early maladaptive schemas, supporting the hypothesis that substance dependents would have more maladaptive unhealthy schemas than the healthy controls. The current findings related to the differences between substance dependents and control group were consistent with the findings of previous studies (Brotchie et al. 2004, Roper et al. 2010, Shorey et al. 2012a, Shorey et al. 2012b). The findings of the present study should be evaluated cautiously since the sample size is small. However the results yielded similar findings of researches from different cultures regarding the thought patterns of addicts. The interaction of early experiences, behavioral and cognitive development of substance dependents might be outside of cultural restraints.

Young (1999) grouped schemas into five broad schema domains, which are proposed to be related to five developmental needs of the child. "Disconnection and Rejection" schema domain is the one's expectations that the individual's needs for security, safety, stability, and nurturance, empathy, sharing of feelings, acceptance and respect will not be met in a predictable manner. Schemas of Abandonment/instability, Emotional deprivation, Defectiveness/shame, Social isolation/mistrust, which were scored higher by the substance dependents, are all under Disconnection and Rejection schema domain. Significantly higher scores in Abandonment/instability schema indicated that the substance dependents might perceive the support and connection of significant others will not be stable or reliable. Similarly, higher scores in Emotional deprivation might reflect the expectations of substance dependents that one's desire for a normal degree of emotional support will not be adequately met by others (Young 1999). Moreover, substance dependents might have the feeling that one is defective, bad, unwanted, or inferior; might have sensitivity to criticism and blame; or might have a sense of shame regarding one's perceived flaws, which are all related to the schema of Defectiveness/shame (Young 1999). Finally, higher scores in Social isolation/mistrust

schema indicated that substance dependents might have the feeling that one is isolated from other people, and/or not part of any group and might expect that others will hurt, abuse, humiliate, cheat, lie, manipulate or take advantage of him (Young 1999).

Another schema domain is "Impaired Autonomy and Performance" which includes Vulnerability to harm or illness, Enmeshment/dependence, and Failure schemas. Higher scores in these schemas indicated that substance dependents might have exaggerated fear that a catastrophe will strike at any time and the person will not be able to prevent it, might believe that one is unable to handle everyday responsibilities without help from others, might need excessive emotional involvement and closeness of significant others, and might have beliefs related to inadequacy and failure (Young 1999).

Pessimism and Emotional inhibition schemas, which were scored significantly higher by substance dependents, are under "Over vigilance and Inhibition" schema domain. Young (1999) proposed that Pessimism schema reflects a pervasive, enduring focus on the negative aspects of life while minimizing or neglecting the positive or optimistic aspects. Emotional inhibition schema represents the excessive inhibition of spontaneous action, feeling, or communication, usually in order to avoid disapproval by others, feelings of shame, or losing control of impulses.

When coping strategies were compared, as hypothesized, substance dependents used less adaptive coping strategies than healthy controls. Substance dependents scored significantly lower than the control group in "Positive reinterpretation and growth", "Seeking social support for instrumental reasons", "Active coping", and "Seeking social support for emotional reasons". On the contrary, substance dependents scored significantly higher in "Behavioral disengagement" and as expected in "Alcohol-drug disengagement" coping strategies. Active coping (Carver et al. 1989) was defined as the process of taking active steps to remove or prevent the stressor or alleviate its effects. This type of coping includes initiating direct action, increasing one's efforts, and executing a coping attempt. Active coping is also the core of what Lazarus and Folkman (1984) termed problem-focused coping. Other coping responses to stressors are seeking social support either for instrumental reasons (seeking advice, assistance, or information) or for emotional reasons (getting moral support, sympathy, or understanding). The former is an aspect of problem-focused coping, where the latter is an aspect of emotion-focused coping (Carver et al. 1989). Substance dependents' lower scores in these coping styles might be understandable when higher scores in the schemas of Abandonment/instability, Emotional deprivation, Defectiveness/shame, and Social isolation/mistrust are taken into account. Behavioral disengagement type of coping is reducing one's efforts to deal with the stressor or giving up the attempts to reach the goals with which the stressor is interfering. This coping style is most likely to be used when people expect poor coping outcomes and feel helplessness (Carver et al. 1989). Positive reinterpretation and growth (Carver et al. 1989), which was termed as positive reappraisal by Lazarus and Folkman (1984), is another type of emotion-focused coping. With this coping strategy, the aim is managing distressing emotions rather than dealing with the stressor itself. Substance dependents' higher scores in Pessimism schema and lower scores in Positive reinterpretation and growth coping style might also reflect their pervasive and enduring focus on the negative aspects of life while minimizing or neglecting the positive or optimistic aspects. Finally, as expected, substance dependents' significantly higher scores on Alcohol-drug disengagement coping style reflected their ineffective and maladaptive means of coping to manage life stressors.

Early maladaptive schemas might be an underlying factor in the development and maintenance of substance dependence (Ball 1998, Young et al. 2003). Ball (1998) proposed that substance abusers may use substances as a way of avoiding the emotional pain associated with early maladaptive schemas. Substance use might be a direct expression of early maladaptive schemas or it might be a maladaptive coping attempt to avoid or compensate for the activation of early maladaptive schemas. Consistent with the theory of Ball (1998) and Young et al. (2003), the findings of this study showed that substance dependents' alcohol-drug disengagement coping style was significantly related with some early maladaptive schemas. Supporting the proposed hypothesis, Alcohol-drug disengagement coping style was significantly predicted by schemas of Emotional deprivation, Emotional inhibition, Enmeshment/dependence, Entitlement/insufficient self-control, Abandonment/instability, Punitiveness, Defectiveness/shame, Vulnerability to harm or illness, and Unrelenting standards/hypercriticalness. This finding provided further support for the plausible role of early maladaptive schemas in the development and/or maintenance of substance dependency problem.

The findings of the current study may have some implications for the treatment of substance depen-

dency problem. Ball (1998) suggested that the treatment of enduring and negative beliefs about oneself, others and the world, in other words the treatment of maladaptive early schemas, may improve substance abuse treatment outcomes. Besides this, most of the substance-abuse treatment programs focus on improving maladaptive coping style (Ball 1998, Ball 2007, Franken et al. (2001). For example, Dual Focused Schema Therapy (Ball 1998, Ball 2007) integrates a schema-focused approach with a symptom-focused relapse prevention coping skills approach to treat interrelated symptoms of substance abuse and personality disorders. Ball (2007) showed that identifying and modifying early maladaptive schemas resulted in reduced substance use. The findings of current study supported that substance dependents might use substance as a way of self-medication to cope with stressful situations or emotions. Moreover, other important finding of the current study was that substance dependents might have developed some other maladaptive coping strategies besides substance use. Studies showed that coping style is an important predictor of treatment outcome and relapse (Myers et al. 1993, Connors et al. 1996a, Connors et al. 1996b, Courbasson et al. 2002). Therefore, treatment programs should focus on overall coping skills of the substance dependents and aim to teach substance dependents better and more adaptive coping strategies.

The current study is a descriptive one that identified the early maladaptive schema differences between the substance dependents and the non-clinical control group. For sure, more research is needed to examine the reasons of this discrepancy, for instance the role of early life experiences and parenting styles in the formation of the maladaptive core beliefs of substance dependents. Moreover, the relationship between the early maladaptive schemas, coping strategies and life events should also be investigated.

The study has a number of limitations that should be considered when interpreting its findings. Firstly, this is a cross-sectional design therefore it did not indicate causal directions among variables. Moreover, the sample size is small, therefore longitudinal studies with larger sample size are needed. Study sample was consisted of only male subjects therefore the findings of the study should not be generalized to females. Some studies have showed gender differences in terms of early maladaptive schemas among the substance dependents (Shorey et al. 2012a, Shorey et al. 2012b). Another limitation is that although participants were evaluated through SCID-I and patients with any comorbid psychiatric disorder were excluded from the study, information about possible comorbid personality disorders were not obtained. Finally, when time course of the study is taken into consideration, we prefer to use the terms of "dependence" and "abuse" in this study although DSM-V does not include these terms anymore and combines them under "substance use disorder".

In conclusion, treatment and prevention programs should not disregard the relationship between early maladaptive schemas and ineffective coping strategies which might be the underlying factor in the development and maintenance of substance dependence.

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