Assessment of the Relationship between Attitude toward Substance Abuse and Early Maladaptive Schemas in Medical Students

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ABSTRACT

Background and aim: Early maladaptive schemas are effective in the formation of attitude toward substance abuse according to cognitive models. Our aim was assessment of the relationship between attitude toward substance abuse and early maladaptive schemas in medical students of "Shaheed Beheshti University of Medical Sciences".

Materials and methods: This research has a correlational-descriptive method. We used the Young Schema Questionnaire-Short Form and the Drug Attitude Scale test then we selected 157 medical students by available sampling method to fill the questionnaires. Data were analyzed using the SPSS software.

Results: Result indicated that there is a relationship between early maladaptive schemas and attitude toward substance abuse, in both genders. Furthermore, there are correlations between subscales of attitude toward substance test and early maladaptive schemas. The Mistrust/Abuse schema and the Unrelenting standards/Hypercriticalness schema are able to anticipate the attitude toward addiction.

Conclusion: Early maladaptive schemas have a role in formation of attitude toward substance abuse. Further studies on cognitive content of attitude toward substance abuse are needed.

Keywords: University; Attitude; Substance; Abuse; Schema; Students

BACKGROUND AND AIM

Substance and alcohol abuse is an important issue worldwide [1]. It has a strong relationship with financial, social and emotional problems [2,3].

The most recent classification of mental disorders in the DSM-5 regards to the scientific equivalent of addiction as "Substance use disorders", while its main and required diagnostic criteria is the presence of physiological and cognitive symptoms and pathologic behavioral patterns [4]. Also important psychological factors like anxiety, stress and depression have major effects on substance and alcohol addiction [5-7]. Addiction also increases user's violent behaviors [8]. These disorders and their outcome are the most important dangers for mental and physical health, and have correlations with important medical, psychiatric, familial, occupational, legal, spiritual and moral problems. They also impose high burden and harm on families and societies [9].

Addiction is among chronic diseases which destroys a family's life, welfare, and vitality which consequently decreases the quality of their lives [10]. Besides, it causes social issues like car accidents, violence, criminal behaviors, and familial problems, etc. [11]. Addiction has a close relationship with physical and mental harms that threatens them [12].

Anxiety and depressive disorders are effective in addiction, because they affect physical and mental function and decrease the quality of life, then the patient abuses substance and alcohol to overcome with his undesired internal status [13].

The substance abuse treatment process has recurrent relapse [14-16] and exit, and it might be for reasons like abuser's personality traits, while there is a strong relationship and overlap between personality disorders and substance abuse [17-19]. Personality disorders are also strong predictors of opiate and cocaine dependence [20].

Modern cognitive models suggest that relatively stable infrastructural schemas form the content of perception and

inference, like what George Kelly calls "Personal construct theory". In schema-therapy approach, focus is mostly on awareness and insight [21].

Cognitive models, indicated that early maladaptive schemas have a role in formation of psychopathological symptoms. Based on Vulnerability-stress Model in psychopathology, family-related factors are underlying factors of vulnerability [22].

According to Beck's cognitive theory, early maladaptive schemas include negative cognitive schemas (appearing as low self-esteem), and dry, fixed, and illogical beliefs [23].

Early maladaptive schemas are self-destructive cognitive and emotional patterns which begin at the onset of human's development and repeat during life. Individual's behavior is not part of his schema, but maladaptive behaviors form as a response to the schema. Behavior is triggered by schemas but isn't part of the schema [22].

Schemes are often remained hidden until a tension activates them. Piaget and Balby believe that parent's function develops models in their child's cognitive structure, called schema. These schemas act as lenses which form one's interpretation, selection, and evaluation of experiences in life [24].

Young has categorized schemas into five main domains including:

- Disconnection,
- Impaired atonally and performance,
- Impaired limits,
- Other directness and
- Over vigilance and inhibition [22].

Beneficial or harmful effects of schemas will expand or restrict development of potential abilities in children, and numerous studies have validated this claim [22,25].

Schemas lead us into biases in interpreting events, which are manifested in interpersonal psychopathology as misunderstandings, distorted attitudes, false speculations, and unrealistic goals and expectations [26].

When schemas get activated, they become command room for spontaneous negative thoughts, causing negative biases in interpreting our information [27].

Yang believes that each psychopathological symptom is related to one or more early maladaptive schema [28].

Potential of addiction is defined in people's belief and attitude toward substance and its resulted positive and negative effect [8]. Propensity to substance abuse is an internal feeling which increases the probability of some behaviors and eases learning them [29].

According to Ball et al. early maladaptive schemas are represented in addicts mostly in Disconnection/Rejection area [30].

Studies consistently emphasize on the effect of early maladaptive schemas on psychopathological symptoms, these schemas include social phobia, obsession, personality disorders, narcissism and eating disorders [31-36]. The theory of early

maladaptive schemas claims that people sufficiently process the information which is consistent with them, but less or worse process the information which is incompatible with them [26,27]. Therefore an individual's behavioral set in response to stressor factors is highly influenced by his fundamental beliefs and assumptions [28]. As previously mentioned, there is a link between early maladaptive schemas and attitude towards addictive substance and alcohol. This connection has been explicitly stated in some studies. Early maladaptive schemas are maladaptive mechanisms, directly or indirectly leading to psychological disorders [37].

Wang and Dale et al. showed that early maladaptive schema is more presented in addict people than others, moreover the Disconnection schema exists more in them [38,39].

Brummet claimed that those who have the Defectiveness/Shame schema and the Incompetence/Dependence schema are more likely to use substance [40].

Petrocelli showed that about 76% of the variance of personality disorders and addiction were explained by the schemas of Emotional deprivation, Incompetence/Dependence, Entitlement/Grandiosity, Enmeshment/Undeveloped self, and Failure. He showed that these schemas correctly predicted 60% of cases of personality disorders [41].

According to the results of Petrocelli et al., Brotchie et al., Bamber et al., Welburn et al., and Kirsch, the Disconnection schema and the Impaired atonally and performance schema have an important and strong role in predicting addiction [41-45].

This research is unique in studying these variables. Our aim was assessment of the relationship between attitude toward substance abuse and early maladaptive schemas in medical students of Shaheed Beheshti University of Medical Sciences at Tehran, using correlation and regression model.

Investigating this relationship can be an applied and practical guide to help psychotherapists, psychologists, counselors, professors and those who are somehow seeking help to students, so we can aware them more about the early maladaptive schemas which are affecting students' health.

MATERIALS AND METHODS

We used a correlational-descriptive and predictive method. Then we analyzed the data using the Spearman correlation method and the sequential regression method.

The study population is consisted of all medical students of "Shaheed Beheshti University of Medical Sciences" (SBMU) at Tehran. The sample is composed of one hundred and fifty seven medical students of SBMU who were enrolled using the available sampling method. Criteria for entering the study were:

- Being a student at SBMU,
- Being volunteer to participate in this research.

In order to meet ethical principles and gain more trust and confidence of participants, we provided questionnaires anonymous and participants were assured of the lack of personal data interpretation. In order to assess the attitude toward

addiction, we used the Drug Attitude Scale test (DAS), Designed by Stephen N. Campbell and Annie Chang, Nova Southeastern University, US, for measurement of attitude toward substance [46]. This questionnaire includes 25 parts and each part consists of two sections. The first section measures the clinical subscale and the second section assesses subscales of the attitude towards substance use. This Test is designed based on a 5 point Likert scale, ranging from strongly disagree (1 score) to completely agree (5 scores). 12 questions of this test are based on a reverse scoring system, where strongly disagree gets 5 scores and completely agree gets 1 score. Subjects are divided into 5 groups based on their grades in this test. The first group is the "Extremely positive" group with a score of less than 37, the second group is the "Positive" group with a score of 38-44, the third group is the "Neutral" group with a score of 45-53, the fourth group is the "Moderately negative" group with a score of 54-64, and the fifth group is the "Extremely negative" group with a score of 65, and above it. To determine the internal consistency, Cronach's alpha was used, and it was 87% for the total test, 87% for the clinical scale and 89% for the attitude toward substance scale. After translation of the test in Iran, psychology and psychotherapy experts validated and confirmed its content validity. In this study, the reliability coefficient of the DAS test was calculated via Cronbach's alpha and it was 0.75 for the total test, 0.64 for the clinical subscale and 0.65 for the attitude towards substances scale. We used the Yang's Schema Questionnaire-short form (YSQ-SF) to assess the early

maladaptive schemas. This is a 75-item questionnaire, designed by Yang in 1998 to evaluate 15 early maladaptive schemas. Each question is based on a 6 points scoring system (1 stands for definitely false, 6 stands for definitely true) and every 5 concomitant questions assess one schema. If a mean subscale score becomes less than 25, that schema is maladaptive [47].

The standardization of this questionnaire in Iran was carried out in 2005 at the Tehran University, the internal consistency was obtained using the Cronbach's alpha coefficient that it was 0.98 in the male population and it was 0.97 in the female population. In this study, the reliability coefficient of the early maladaptive schemas questionnaire of the YSQ-SF was calculated 0.97 using the Cronbach's alpha.

RESULTS

As shown in Table 1, mean total drug attitude scale test (DAS) score (M=51.38, SD=9.65) is in the Neutral group, though, medical students' attitude toward addiction is in Neutral group.

49.7 percent of the students are in the moderately negative group and 1.9 percent is in the extremely negative group, so 50 percent of medical students tend to use drugs and alcohol.

Note that the extremely negative group is more likely to use substances. This group denies the risk of substances and does not accept its dangers, therefore, the lower an individual's score, the less likely to use substances.

Table 1: Shows the mean and standard deviation of the attitude toward substance abuse (DAS) among students.

Variable	Total Number	Total M & SD	Males Number	Males M & SD	Females Number	Females M & SD
Extremely positive	16	33.62 ± 4.01	7	31.57 ± 4.86	9	35.22 ± 2.44
positive	23	41.22 ± 1.76	13	41.00 ± 1.87	10	41.50 ± 1.65
Neutral	37	48.81 ± 2.38	14	48.50 ± 2.50	23	49.00 ± 2.34
Moderately negative	78	58.22 ± 2.61	28	57.86 ± 2.51	49	58.43 ± 2.69
Extremely negative	3	77.67 ± 7.57	1	81.00 ± 00	2	76.00 ± 9.90
Total DAS	157	51.38 ± 9.65	63	49.75 ± 10.30	93	52.41 ± 9.11

Mean early maladaptive schemas scores were also calculated among the sub-scales of the DAS test. Results show that mean early maladaptive schemas scores of the moderately negative subscale and the extremely negative subscale are higher than the mean of other subscales.

As shown in Table 2, those who are in two sub-scales of Moderately negative and Extremely negative have an attitude toward substance abuse, we can conclude that when an individual tends to be in these two sub-scales, has more early negative maladaptive schemas.

Table 2: Mean and standard deviation of the early maladaptive schemas and its subscales in students, divided by the attitude toward substance abuse.

Variable	Total DAS M & SD	Extremely Positive M & SD	Positive M & SD	Neutral M & SD	Moderately Negative M & SD	Extremely Negative M & SD
	N=157	N=16	N=23	N=37	N=38	N=3

Emotional Deprivation	14.26 ± 5.48	14.12 ± 5.1	13.26 ± 4.62	12.41 ± 4.33	15.53 ± 5.92	12.67 ± 3.51
Abandonment/Instability	15.48 ± 5.65	13.44 ± 5.12	15.17 ± 5.91	15.70 ± 5.28	15.72 ± 5.86	20.00 ± 4.58
Mistrust/Abuse	13.14 ± 5.82	10.69 ± 6.78	11.57 ± 5.17	12.19 ± 5.03	14.28 ± 5.82	20.33 ± 4.72
Social/Isolation	13.73 ± 6.29	11.69 ± 5.64	12.04 ± 5.97	11.54 ± 4.6	15.46 ± 6.57	19.67 ± 9.29
Defectiveness/shame	11.25 ± 6.12	9.56 ± 6.31	7.48 ± 2.79	9.65 ± 5.37	13.33 ± 6.44	14.67 ± 2.31
Failure	11.13 ± 6.67	9.38 ± 5.43	6.87 ± 3.52	9.38 ± 5.71	13.56 ± 7.21	11.67 ± 1.53
Incompetence/Dependence	10.45 ± 5.78	7.81 ± 4.86	6.91 ± 3.30	9.00 ± 4.25	12.65 ± 6.28	12.00 ± 5.57
Vulnerability to Harm or Illness	11.73 ± 6.31	9.88 ± 6.47	8.48 ± 4.25	10.38 ± 5.18	13.29 ± 6.49	22.33 ± 6.51
Enmeshment Undeveloped Self	11.70 ± 6.13	12.06 ± 7.35	8.22 ± 4.410	9.78 ± 5.16	13.31 ± 6.07	18.33 ± 5.77
Subjugation	12.38 ± 6.34	11.88 ± 6.52	9.61 ± 4.83	10.35 ± 5.48	13.95 ± 6.50	20.33 ± 5.50
Self-Sacrifice	14.82 ± 5.31	14.81 ± 5.94	13.26 ± 3.71	13.08 ± 3.88	15.93 ± 5.8	19.33 ± 7.57
Emotional Deprivation	13.93 ± 5.62	13.50 ± 6.79	13.04 ± 5.03	12.38 ± 5.45	14.97 ± 5.53	15.00 ± 5.29
Unrelenting Standards/Hyper Criticalness	18.46 ± 5.78	18.56 ± 6.33	20.91 ± 5.06	18.59 ± 5.4	17.78 ± 6.00	15.33 ± 2.08
Entitlement/Grandiosity	16.27 ± 5.80	15.38 ± 6.47	16.78 ± 7.42	16.43 ± 5.71	16.18 ± 5.08	17.67 ± 10.69
Insufficient Self/Discipline	13.04 ± 5.69	9.88 ± 5.045	11.52 ± 6.01	11.03 ± 4.96	14.95 ± 5.43	17. 0 ± 4.00

Moreover, none of the mean early maladaptive schemas scores was higher than the cut-off point. In addition, mean early maladaptive schemas scores among girls were higher than that of boys in all schemas.

After analyzing the data, as demonstrated in Table 3, there was a significant positive correlation between the total DAS score and the schemas of Emotional Deprivation (R=0.176, P<0/05), Mistrust/Abuse (R=0.251, P<0/01), Social/Isolation (R=0.311, P<0/01), Defectiveness/shame (R=0.397, P<0/01), Failure (R=0.340, P<0/01), Incompetence/Dependence (R=0.401, P<0/01), Vulnerability to harm or illness (R=0.329, P<0/01), Enmeshment Undeveloped Self (R=0.320, P<0/01), Subjugation (R=0.292, P<0/01), Self-sacrifice (R=0.245, P<0/01), Emotional Deprivation (R=-0.173, P<0/05), Unrelenting standards/Hyper criticalness (R=-0.157, P<0/05), Insufficient Self/Discipline (R=0.398, P<0/01) in medical students.

Table 3: The correlation matrix of DAS and its subscales with the early maladaptive schemas among medical students.

Schemas	SAD	Men	Female	Clinical	Attitude
	N=157	63	93	157	157
Emotional Deprivation	0.176*	0.298*	0.053	0.107	0.199*
Abandonment/Instability	0.121	0.29	-0.027	0.14	0.07
Mistrust/Abuse	0.251**	0.442**	0.112	0.227**	0.214**
Social/Isolation	0.311**	0.403**	0.211*	0.334**	0.168*
Defectiveness/Shame	0.397**	0.557**	0.272**	0.372**	0.275**
Failure	0.340**	0.326**	0.311**	0.301**	0.287**

Incompetence/Dependence	0.401**	0.419**	0.343**	0.364**	0.308**
Vulnerability To Harm Or Illness	0.329**	0.349**	0.284**	0.298**	0.226**
Enmeshment Undeveloped Self	0.320**	0.440**	0.179	0.292**	0.212**
Subjugation	0.292**	0.372**	0.185	0.268**	0.211**
Self- Sacrifice	0.245**	0.319*	0.16	0.131	0.251**
Emotional Deprivation	0.173*	0.198	0.108	0.169*	0.103
Unrelenting Standards/Hyper Criticalness	-0.157*	-0.071	-0.213*	-0.118	-0.14
Entitlement/Grandiosity	0.063	0.261*	-0.086	0.119	0
Insufficient Self/Discipline	0.398**	0.531**	0.296**	0.355**	0.291**

**$p<0.01$, *$p<0.05$, N=157

In Clinical sub-scale, there is a significant positive correlation between the total DAS score and the subscales of Mistrust/Abuse, Social/Isolation, Defectiveness/Shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Enmeshment/Undeveloped Self, Subjugation, Emotional Deprivation and Insufficient Self /Discipline in medical students.

In the Attitude subscale, there was a significant positive correlation between the total DAS score and the schemas of Emotional Deprivation, Mistrust/Abuse, Social/Isolation, Defectiveness/shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Enmeshment/Undeveloped Self, Subjugation, Self-sacrifice and Insufficient Self/Discipline in medical students.

In male medical students, there is a significant positive correlation between the total DAS score and the early maladaptive schemas of Emotional Deprivation, Mistrust/Abuse, Social/Isolation, Defectiveness/Shame, Failure, Incompetence/Dependence, Vulnerability to harm or Illness, Enmeshment Undeveloped Self, Subjugation, Self- sacrifice, Entitlement/Grandiosity and Insufficient Self/Discipline.

Also in female medical students, there is a significant positive correlation between the total DAS scores and the schemas of Social/Isolation, Defectiveness/Shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Unrelenting standards/Hyper criticalness and Insufficient Self/Discipline.

We used the sequential regression model in order to investigate the relationship between the sub-scales of the attitude toward substance abuse test and the early maladaptive schemas and we can predict sub-scales of the DAS test through the early maladaptive schemas. After analyzing the results, the regression model was firstly proven to be a suitable model.

Chi-square (Chi-Square=86.625, P<0.01) and independent variables are able to well explain and predict the changes of the dependent variable. As demonstrated in Table 4, the values of all three variables related to the Pseudo R Square (Cox and Snell=0.424, Nagelkerke=0.460, McFadden=0.216) could predict between 21.4% and 41.6% of the variance of attitude toward substance abuse, and the rest of these factors are predicted by other variables that are not found in this research.

Table 4: The Sequential Regression results for predicting the attitude toward substance abuse through the early maladaptive schemas in medical students.

Parameter Estimates		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Threshold	[Status of Das=1.00]	-2.194	0.529	17.178	1	0	-3.231	-1.156
	[Status of Das=2.00]	-1.154	0.49	5.547	1	0.02	-2.114	-0.194
	[Status of Das=3.00]	-0.16	0.472	0.115	1	0.74	-1.086	0.766
	[Status of Das=4.00]	2.42	0.577	17.567	1	0	1.289	3.552

Location	Emotional Deprivation	-0.041	0.026	2.362	1	0.12	-0.092	0.011
	Abandonment/ Instability	-0.049	0.026	3.638	1	0.06	-0.1	-1.001
	Mistrust/Abuse	0.081	0.031	6.873	1	0.01	0.021	0.142
	Social/Isolation	0.036	0.029	1.606	1	0.21	-0.02	0.092
	Defectiveness/shame	0.016	0.034	0.228	1	0.63	-0.05	0.083
	Failure	0.001	0.032	0	1	0.98	-0.063	0.064
	Incompetence/ Dependence	0.031	0.041	0.594	1	0.44	-0.048	0.111
	Vulnerability to harm or Illness	0.028	0.033	0.728	1	0.39	-0.036	0.093
	Enmeshment Undeveloped Self	0.016	0.03	0.296	1	0.59	-0.043	0.076
	Subjugation	-0.047	0.036	1.694	1	0.19	-0.119	0.024
	Self-sacrifice	0.042	0.028	2.183	1	0.14	-0.014	0.097
	Emotional Deprivation	-0.013	0.026	0.244	1	0.62	-0.064	0.038
	Unrelenting standards/Hyper Criticalness	-0.049	0.022	4.966	1	0.03	-0.092	-0.006
	Entitlement/ Grandiosity	-0.027	0.024	1.262	1	0.26	-0.075	0.02
	Insufficient Self/ Discipline	0.043	0.029	2.3	1	0.13	-0.013	0.099

Among the early maladaptive schemas, the schemas of Mistrust/ Abuse and the Unrelenting standards/Hyper criticalness have been able to anticipate the attitude toward addiction. As shown in Table 4, the result of the regression effect of the Mistrust/ Abuse schema and the Unrelenting standards/Hyper criticalness schema on the attitude toward substance use is significant at a level of 0.05.

Also, the coefficient and direction of the effect of these two variables on the attitude toward substances abuse is positive, which means that as these amounts increase, the attitude toward substance abuse increases. Also, the estimation of these two variables is Mistrust/Abuse=0.08 and Unrelenting standards/ Hyper criticalness=-0.049, in other words, one unit change of the maladaptive schemas results in change in Mistrust/Abuse in amount of 0.08 and unrelenting standards/hyper criticalness in amount of -0.499 in the depended variable logarithmic ratios of the attitude toward substance abuse.

In other words, those who have more early maladaptive schemas have more attitudes toward substance abuse. Also, the results show that the early maladaptive schemas values (location) are not the same among all classes of the attitude toward substance abuse (Chi-Square=280.98, P<0.01).

DISCUSSION

In this research we aimed to assess and compare the early maladaptive schemas and the attitude towards substance abuse in medical students of Shaheed Beheshti University of Medical Sciences, with reliance on cognitive-behavioral models and the studies conducted on early maladaptive schemas and attitude toward substance abuse.

We found a significant positive correlation between total Drug Attitude Scale test (DAS) score and schemas of Emotional deprivation, Mistrust/Abuse, Social/Isolation, Defectiveness/ Shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Enmeshment Undeveloped Self , Subjugation, Self-sacrifice, Emotional Deprivation, Unrelenting standards/ Hyper criticalness, Insufficient self/Discipline in medical students.

In clinical subscale, there is a significant positive correlation between the total DAS score and the schemas of Mistrust/Abuse, Social/Isolation, Defectiveness/Shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Enmeshment/Undeveloped self, Subjugation, Emotional Deprivation and Insufficient Self /Discipline in medical students. In attitude subscale, there is a significant positive correlation between the total DAS score and the schemas of Emotional deprivation, Mistrust/Abuse, Social/Isolation, Defectiveness/Shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Enmeshment/Undeveloped self, Subjugation, Self-sacrifice and Insufficient Self/Discipline in medical students. In male medical students, there is a significant positive correlation between the total DAS score and the schemas of Emotional Deprivation, Mistrust/Abuse, Social/Isolation, Defectiveness/shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Enmeshment Undeveloped Self, Subjugation, Self- sacrifice, Entitlement/Grandiosity and Insufficient Self/Discipline.

Moreover, among female medical students, there is a significant positive correlation between the total DAS score and the schemas of Social/Isolation, Defectiveness/Shame, Failure, Incompetence/Dependence, Vulnerability to harm or illness, Unrelenting standards/Hyper criticalness and Insufficient Self/Discipline. We used the sequential regression test in order to investigate the relationship between sub-scales of the attitude toward substance abuse and the early maladaptive schemas in addition to predict the sub-scales of the DAS test through the early maladaptive schemas.

After analyzing the data, results showed that regression model is a suitable model.

Among the early maladaptive schemas, the two Unrelenting standards/Hyper criticalness schema and the Mistrust/Abuse have been able to anticipate the attitude toward addiction. In other words, those who have more of the Unrelenting standards/Hyper criticalness schema and the Mistrust/Abuse schema have more attitudes toward substance abuse.

The results of this study are similar to the results of Dale et al., Brummet et al., Petrocelli et al., Bamber et al., Volubrén et al., and Kirsch [38-45].

Schema therapy also seems to be an appropriate approach for treatment of substance abuser patients. For example a high score in Yang's early maladaptive schemas test is related to substance abuse in both clinical and non-clinical samples [48-53].

Substance abusers are suffering from some early maladaptive schemas which can cause tendency to substance abuse [54].

Some studies have defined a correlation between early maladaptive schemas and addiction to addictive substance [55,56].

According to the schema therapy approach a theoretical explanation for this relationship is that one who has early maladaptive schemas chooses a maladaptive response style to prevent experiencing an intense and desperate emotion. Hence, by adopting an avoidant coping style, avoids schema provocative

situations such as intimate relationships or job challenges and conducts harmful behaviors [22].

Also, according to the meaning assignment structure theory/schema [23,57-59], which considers cognition and schemas as the origin of processing, and according to the opinion of Moore Wincowist and Rector, Segal, and Gamar explaining that individuals sufficiently process the information which is compatible to themselves, but they process the information incompatible with themselves less or worse [26,60].

Therefore, it is concluded that those who have more attitude toward substance abuse, similar to depressed people, eliminate the positive self-referral information from their information processing system so they remember the negative information related to themselves better and more, and this bias is based on the individual's early maladaptive schemas. In the schema therapy approach, there are two approaches about the relationship between schemas and disorders. The first approach is that according to the cognitive pathology model in an emotional disorder status the activation of all early maladaptive schemas is possible [22].

The second approach believes that the nonspecific activation of all schemas does not so much help to predict the type of the emotional disorder. Based on the content specificity hypothesis, anxiety-related cognition is related to the risk and threat evaluation, while the depression-related cognition is related to failure and loss. Anger-related cognition is associated with injustice evaluation and emotional-related cognition is related to achieving benefits evaluation [61-63].

On the other hand, researches have also suggested that the early maladaptive schemas are the maladaptive mechanisms that directly or indirectly lead to psychological disorders [37].

So it can be concluded that the early maladaptive schemas can explain psychological disorders, including the tendency to use substances.

Also, according to a cognitive view, it is believed that a large number of studies, theories, and patterns of cognitive pathology have focused on the explanation of emotional disorders based on the cognitive processing of emotional information [64-66].

It can be concluded that the effect of the early maladaptive schemas on our knowledge leads us to not having an appropriate processing of events, and as a result of this inappropriate processing; individuals tend to psychological disorders and substance abuse.

CONCLUSION

There is a relationship between early maladaptive schemas and attitude toward substance abuse. This study is a basis for further investigation in the cognitive content of attitude toward substance abuse and addiction this area needs to be more investigated in order to illustrate and draw a picture of the early maladaptive schemas which influence the attitudes toward substance abuse and addiction to clarify etiology and tendency to substance abuse and addiction, which has significant effects on prevention, rehabilitation, and treatment of addiction.

ACKNOWLEDGMENT

AVAILABILITY OF DATA AND MATERIAL

The datasets used and analyzed during the current study are available from the corresponding author on request.

COMPETING INTERESTS

The author(s) declared no conflicts of interest with respect to the authorship or the publication of this article.

TRANSPARENCY DECLARATION

The authors ensure that the manuscript is reported clearly, truthfully and accurately with no omission of any important aspect.

FUNDING

AUTHORS' CONTRIBUTIONS

AMB contributed in designing the study, data collection, analysis, and interpretation of data and drafted the manuscript and revised and approved the final manuscript.

KA contributed in designing the study, data collection, data analysis, and revised and approved the final manuscript.

MB contributed in data collection, and analysis and interpretation of data and revised manuscript and approved the final manuscript.

ETHICS APPROVAL

We have considered all ethical principles in this article. But since it's conducted without any institutional funding, we have no formal institutional ethics approval. All steps are described in methods with details and we have considered all ethical principles.

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