

The Prediction of Depression by the Early Trauma and Maladaptive Schema in 11 - 13 Year-Old Students

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Abstract

Background: Depressive disorder spectrum has been shown to be a significant mental health issue for school-age children. Yet little work has been done to investigate the predictive factors correlated with this early form of depression.

Objectives: The aim of this study was to determine the predictive role of early trauma and maladaptive schema in dimensions of depression in 11 - 13 year-old students.

Materials and Methods: Multi-stage random sampling was used to select 292 school-age children (201 females, 91 males) with mean age 12.33. All subjects were asked to complete children's depression inventory (CDI), childhood trauma questionnaire (CTQ) and schemas inventory for children (SIC). The analysis of data was done using canonical correlation.

Results: Structural coefficients showed that the pattern of high scores in early trauma and maladaptive schema correlate with the pattern of high scores in depression dimensions. Therefore, the findings indicate that the combination of low early trauma and maladaptive schema can probably decrease the likelihood of depression.

Conclusions: In general, the findings of this study showed that early trauma and maladaptive schema can predict depression in children and explain a considerable variance of survival index.

Keywords: Depression, Trauma, Schema, Children

1. Background

Depressive disorder is one of the most important issues in mental health. It is known as the most common cause of illness, disability, and poor quality of life (1). The lifetime prevalence of depression in children is estimated to be 17%. Research literature indicates that depression surges in childhood and adolescence and predicts high rates of comorbidity, long-term negative consequences, and high rates of depression recurrence. Two-thirds of adolescents with depression also suffer from at least one other psychiatric disorder such as anxiety disorders, attention deficit hyperactivity disorder (ADHD), conduct disorder, and substance abuse disorder. Depressed adolescents are also at higher risks of academic failure, interpersonal problems, and suicidal tendencies (2).

Epidemiological studies have provided much evidence that adverse childhood experiences such as abuse and neglect are significantly correlated with fourfold increase in risk of depression (3). In particular, early life stress and traumatic experiences such as childhood maltreatments are strongly correlated with psychopathology in adults, particularly with major depression. In this regard, childhood traumas not only increase the lifetime risk of developing major depression, but also make the disease process more severe (1). Researchers believe that if these

traumas occur at a younger age, depression is more likely to occur. However, if traumas evolve in adolescence, it increases the likelihood of developing post-traumatic stress disorder (4). In fact, childhood traumas cause hypersensitivity in hypothalamic-pituitary-adrenal axis, which is positively correlated with greater vulnerability to major depression (3). Despite the impact of childhood traumas on neurobiology and neurochemistry, they also affect cognitive and emotional aspects (1).

The research conducted in the field of developmental psychology suggests that children in elementary schools can experience cognitive symptoms associated with depression. Cognitive models of depression in children are similar to models of depression in adults (5). Beck's cognitive model of depression explains that people who are vulnerable to experience depressive episodes exhibit negative self-schema. This schema is stimulated (activated) by exposure to adverse environmental factors that finally leads to negative biased distortions of self, the world, and future, which in turn increases the risk of depression (6). According to Young et al. (7), early maladaptive (negative) schemas arises from the deprivation of psychological major needs in childhood (e.g., secure attachment style, expression of main needs, realistic limits) through persistent patterns

of incompatible experiences with family members and traumatization. A mismatch between parental rearing behavior and the innate temperament of the child may also lead to the development of early maladaptive schemas (8). Early maladaptive schemas preserve themselves through cognitive distortions, self-defeating life patterns, and dysfunctional coping strategies that directly or indirectly lead to psychological distress (7). More specifically, schemas are a main determinant of how individuals think, feel, behave, and interact socially (9). Indeed, negative cognitive schemas are formed in childhood and become active again in response to psychological stress (real or perceived). When the schemas are activated, individual experiences pass through a set of filters, which distorts reality in a negative way (5). In addition, when biased data are self-relevant, negative information retrieval in people with depression becomes more severe. Similarly, depressed children have less self-referential characteristics compared with non-depressed children (6). Along with Beck's cognitive model, depressed children compared with non-depressed children have less self-esteem, perceived competence, and hope for the future, and more distorted thinking (5).

Extensive research has reported negative impact of early trauma and maladaptive schema on mental and physical health of adults, but to the best of our knowledge this study is the first to examine the predictive role of these two on children's depression.

2. Objectives

The purpose of the present study is to extend results of previous research by investigating the impact of childhood trauma history and maladaptive schema development on children's symptoms of depression including negative mood, interpersonal problems, ineffectiveness, anhedonia and negative self-esteem, in a large homogeneous group of male-female students aged from 11 to 13 years. We hypothesized that early trauma and maladaptive schema would be a robust predictor of depression dimensions in children.

3. Materials and Methods

This is a cross sectional descriptive study, studying the relationship between early trauma and maladaptive schema and depression in 11 - 13 year-old-students. The data obtained by questionnaires were examined with canonical correlation analysis, using SPSS version 18. Canonical correlation is similar to multiple regression analysis; several independent variables are applied to predict dependent variables. The difference lies in number of dependent variables where in multiple regression there is only one, while in canonical analysis there is more than one dependent variable (10).

3.1. Participants

Students from four regions in Shiraz, studying in 6th and 7th grades of elementary and first secondary school

in educational year 2014 - 2015 (Iranian year of 1393 - 1394) were solicited to participate in the questionnaire surveys. Inclusion criteria comprised having minimum of 11 and maximum age of 13 years, and absence of physical and mental diseases. The sample size was determined using Cochran formula, that included 292 students (68.8% females, 32.2% males) selected by multistage random sampling. First, two girl's schools and two boy's schools were chosen randomly, then two classes in each were randomly selected and finally half of the students in each class were randomly chosen to answer the questionnaire. The age range of the participants was 11 to 13 years, with an average of 12.33 and standard deviation 0.83. 36% of subjects were in 6th grade, 64% in 7th grade elementary school. The average cumulative grade point average (CGPA) of students in sample was 18.31, SD = 1.03.

3.2. Instruments

3.2.1. Children's Depression Inventory (CDI)

CDI (Kovacs 1980 - 1981) is considered one of the few existing diagnostic measures in studies of depressed versus non-depressed 8 - 13 year-old-children. The CDI is a 27 item self-report questionnaire that ask subjects to endorse one of the three descriptions that best applies to him/her during last 2 weeks. CDI is scored on a 0 - 2 scale, with 0 representing the absence of depressive symptoms and 2 designating severe forms of depression. This scale evaluate 6 subscales including negative mood, interpersonal problems, ineffectiveness, anhedonia and negative self-esteem (11). The cut-off point for CDI reported as 15 for mild, 20 for moderate and 25 for severe depression (2). The CDI has shown adequate reliability and validity in previous studies; previous studies reported high internal consistency with a Cronbach's α of 0.82 (12) and 0.86 (13). Rajabi (14) also reported good psychometric properties for CDI (Cronbach's $\alpha > 0.88$). In the present study Cronbach's α was 0.94.

3.2.2. Childhood Trauma Questionnaire (CTQ)

CTQ (Thombs et al. (15)) is one of the most widely used instruments that measures the severity of different types of childhood trauma, designed for both clinical and non-clinical populations. CTQ is 34 item retrospective self-report questionnaire to evaluate five depression dimensions including (a) physical abuse; (b) emotional abuse; (c) sexual abuse; (d) physical neglect; and (e) emotional neglect (15). The items are scored on 5-point Likert scale ranging from 1 (never) to 5 (very often) (16). Previous research reported strong psychometric properties with Cronbach's α of 0.79 to 0.94 (17), which was highly consistent with the results of prior research in Iran ($\alpha > 0.94$) (18). In the current sample Cronbach's α was 0.80.

3.2.3. Schemas Inventory for Children (SIC)

SIC (Rijkeboer and deBoo, 2010 (19)) is a 40 item self-

report inventory designed for assessing maladaptive schema in children aged 8 - 13 years. The items are scored on 5-point Likert scale ranged from 1) "not true" to 5) "yes definitely". SIC designed in order to represent the 11 schema construct of Young schema questionnaire (YSQ). These include loneliness, vulnerability, submission, mistrust/abuse, defectiveness/shame, unrelenting standards, self-sacrifice, enmeshment/undeveloped self, entitlement/grandiosity, insufficient self-control, and failure to achieve. Prior research in Iran examining this instruments with a large community sample of male students in guidance school showed high consistency ($\alpha > 0.73$) (20). In current study Cronbach's α was 0.82.

4. Results

Descriptive statistics and correlational matrix for main study variables are reported in Table 1.

As shown in Table 1, the mean (SD) scores obtained by the sample ($n = 292$) on variables of depression was 39.4 (15.12), early trauma 15.80 (13.1), schema 1.08 (22.4), and depression subscales including negative mood 8.75 (3.94), interpersonal problems 5.01 (2.67), ineffectiveness 5.57 (2.67), anhedonia 11.61 (4.57) and negative self-esteem 8.51 (2.99).

To investigate the relationship between depression, early trauma and maladaptive schema in the total scale and sub-scales, a matrix for Pearson correlation coefficient was calculated. Bivariate correlation between study variables (Table 1) showed that not all of the variables have a significant correlation with each other, but significant alpha coefficients range from 0.11 to 0.93.

Focusing on the main study variables, as seen in Table 1, significant positive relationship were found between

depression and negative mood ($r = 0.93$; $P < 0.01$), interpersonal problems ($r = 0.87$; $P < 0.01$), ineffectiveness ($r = 0.85$; $P < 0.01$), anhedonia ($r = 0.93$; $P < 0.01$) and negative self-esteem ($r = 0.86$; $P < 0.01$). A significant positive relationship was found between depression and early trauma ($r = 0.36$; $P < 0.01$), as well as a significant correlation between maladaptive schema and depression ($r = 0.28$, $P < 0.01$).

In the current study, canonical correlation analysis was used to investigate variables relationship. Early trauma and maladaptive schema are considered as predictors of depression in order to determine the joint multivariate relationship between these two variable classes. The results of multivariate test of significance for canonical correlation full model are presented in Table 2.

Wilks lambda ($P < 0.001$) being statistically significant, explains a relationship between early trauma and maladaptive schema, and depression (Table 2). λ is a sign of unexplained variance, thus $1 - \lambda$ is the full model effect size in r^2 matrix. Accordingly, the effect size of three canonical correlation function equals $1 - 0.86 = 0.14$. The effect size is the joint variance between 2 classes of variables (predictor and dependent variables) explained by the full model, therefore, the obtained model in this study explains 14% of variance between early trauma and maladaptive schema, and depression including negative mood, interpersonal problems, ineffectiveness, anhedonia and negative self-esteem.

The number of functions obtained from canonical analysis is equal to the number of variables in the smallest class (dependent or independents). Two functions are acquired by having two independent variables, early trauma and maladaptive schema (Table 3).

Table 1. Correlational Matrix, Means and Standard Deviation for Main Study Variables ($N = 292$)^a

Variables	1	2	3	4	5	6	7	Mean (SD)
Depression								39.4 (15.12)
Negative mood	0.93							8.75 (3.94)
Interpersonal problems	0.87	0.78						5.01 (2.67)
Ineffectiveness	0.85	0.73	0.69					5.57 (2.64)
Anhedonia	0.93	0.81	0.77	0.77				11.61 (4.57)
Negative self-esteem	0.86	0.80	0.70	0.64	0.72			8.51 (2.99)
Early trauma	0.36	0.41	0.30	0.38	0.34	0.28		15.80 (13.1)
schema	0.28	0.27 ^a	0.43	0.42	0.37	0.43	0.17	1.08 (22.4)

^a $P < 0.01$.

Table 2. Multivariate Test of Significance for Canonical Correlation Full Model

Test Name	Value	F	DF1	DF2	P Value
Pillais	0.137	4.20	10	572	< 0.001
Wilks	0.865	4.26	10	570	< 0.001
Hotellings	0.152	4.32	10	568	< 0.001

Abbreviations: DF, degree of freedom; F, mean-square between/mean-square within.

Table 3. Functions Obtained From Canonical Correlation Analysis

Root Number	Eigenvalue	Percent	Cumulative Percent	Canonical Correlation	Square Correlation
1	0.12	84.40	84.40	0.33	0.11
2	0.23	15.59	100	0.15	0.02

Table 4. Results for Dimension Reduction Analysis of Canonical Functions

Roots	Wilks L	F	DF1	DF2	P Value
1 to 2	0.86	4.26	10	570	< 0.001
2 to 2	0.97	1.69	4	286	0.15

Abbreviations: DF, degree of freedom; F, mean-square between/mean-square within.

Table 5. Standard, Structural and Square Structural Coefficients of Research Variables

Variables	Standard Coefficient	Structural Coefficient	Square Structural Coefficient
Negative mood	0.72	0.46	0.21
Interpersonal problems	-0.35	0.16	0.02
Ineffectiveness	-0.35	0.03	0.0009
Anhedonia	-0.80	0.06	0.0036
Negative self-esteem	1.15	1.32	0.44
R ² C	NA	NA	0.11
Early trauma	-0.95	-0.98	0.96
Schema	-0.17	-0.34	0.11

Abbreviation: NA, not available.

In canonical correlation analysis there is no convenient way to test significance level of functions separately. One way to investigate the issue is to consider the amount of variance that explains each function. As shown in Table 3, canonical correlations square (R² C) of functions are 0.11 and 0.02. Regarding findings by Sherry and Henson (21), functions explaining less than 10% variance are disregarded and are not interpreted, thus only the first function explaining 11% of joint variance is accepted and other function (2%) are not interpreted.

In addition to the foregoing method, researcher can test the significance level by dimension reduction analysis (Table 4).

Test of significance results of cumulative effect of functions 1 and 2 is presented in the first row of Table 4. The test checks if the structure of functions is significant or not. As mentioned, cumulative effect of function 1 and 2 (full model) is statistically significant ($F = 4.26$, $\lambda = 0.86$, $P < 0.001$), but the 2 to 2 cumulative effect is not significant ($F = 2.21$, $\lambda = 0.8$, $P = 0.15$). In other words, only first function explains a significant amount of joint variance between the two classes of variables.

Results, so far, explain that there is a significant relationship between 2 classes of variables and only the first function explains a significant variance. The standard and structural coefficients of variables were considered to determine the role of each variable in functions. Table 5 presents standard coefficients, structural coefficients and square structural coefficient for dependent and in-

dependent variables in the first canonical function.

Following Alpert and Peterson (1972), only variables with minimum structural coefficients of 0.3 are interpreted. Therefore, data presented in Table 5 indicate that in first function, early trauma (SC = 0.98), and maladaptive schema (SC = 0.34) have respectively more important roles in linear structure of predictor variables. The dependent variables, negative self-esteem (SC = 1.32), negative mood (SC = 0.46), interpersonal problems (SC = 0.16), anhedonia (SC = 0.06), and ineffectiveness (SC = 0.03) play a role in linear structure of dependent variables.

More specifically, depression dimensions are predicted by early trauma and maladaptive schema. Also, canonical R square coefficient (R²C) is 11% that determines the amount of joint variance between two canonical classes of independent and dependent variables. Furthermore, based on standard coefficients presented in Table 5, for each standard deviation increment in early trauma, the first canonical function score decreases is indicated by -0.95, and with a unit increase in standard deviation of maladaptive schema, first function score decreases presented by -0.17. For each unit increase in standard deviation of negative mood and negative self-esteem, the score of first canonical function increases by 0.72 and 1.15. Finally, for each standard deviation increment in interpersonal problems, ineffectiveness and Anhedonia, the score of first canonical function decreases to -0.35, -0.35, -0.80 respectively. Conceptual relationship between dependent and predictor variables are presented in Figure 1

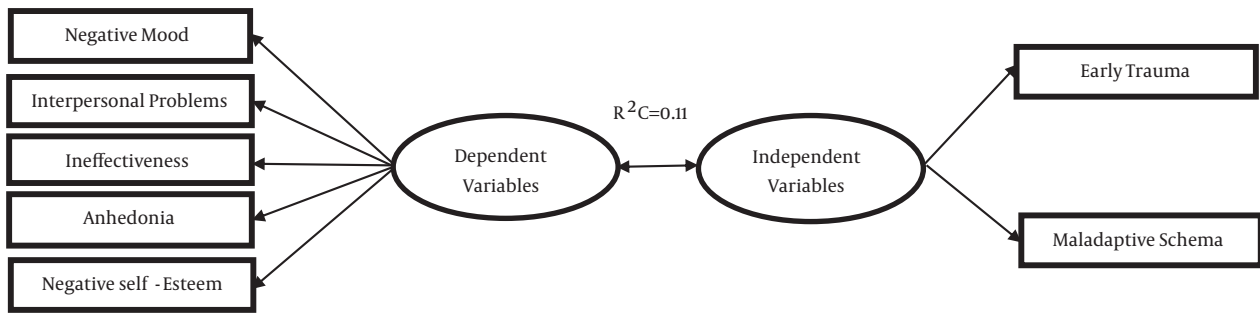


Figure 1. Conceptual Relationship Between Dependent and Predictor Variables

5. Discussion

This study aimed to examine the role of early trauma and early maladaptive schema in predicting depression of elementary school students. The findings suggest that such prediction is possible. Canonical analysis led to the formation of a statistically significant function. The findings are explained based on cross-loading that is the best way to interpret the conventional functions. Cross-loadings of significant function are representative of a pattern of high scores of early trauma and maladaptive schema which is correlated with a pattern of high scores in children's depression.

Findings are consistent with pioneering work that highlighted maladaptive schema proposed to strongly associate with depression (5, 6, 22) and results obtained showed that the association between early trauma and depressive symptoms were largely consistent with those of previous findings (1, 3, 23, 24). One possible explanation of these findings could be based on Bowlby's attachment theory. This theory posits that secure attachment to the primary caregivers would lead to the development of successful emotion, which is a protective factor against psychopathology. Therefore, violent and traumatic experiences, particularly from caregivers, are detrimental to a child's system of beliefs, expectations, emotions, and behaviors in relation to himself and others. This may lead to learned helplessness, external locus of control, maladaptive coping styles, and finally greater vulnerability to stress and anxiety disorders (1). The ability to identify and describe emotions is essential for processing and integrating emotional experiences in daily life. Therefore, a possible explanation for emotional irregularities caused by traumatic experiences is that trauma prevents identifying and labeling the emotional estates. In other words, the inability to understand the emotional experiences can make traumatic experiences more dangerous (25), since emotional dysregulation cause negative mood, lack of pleasure, inefficiency, low self-esteem and distorted interpersonal relationships which all represented depression dimensions.

Diathesis-stress model of depression also suggests that some people are prone to depression during negative life events. Both theories and empirical results have reported that cognitive vulnerability is the core feature of depression in those people with an adverse childhood experiences. In fact, early maladaptive schemas resulting from childhood interpersonal conflicts will influence the interpretation of subsequent future experiences. Compared with other cognitive vulnerabilities, early maladaptive schemas, which are related to core issues of life such as autonomy and intimacy, are unconditional and automated and can trigger high levels of negative emotion (22). This process called secondary activation by Beck (1967) in which original schemas such as loss, worthlessness, failure, and incompetency reactivated and fewer schemas are activated in relation to particular circumstances and training styles of individual (26). Overall, much of the research literature appears to focus on three maladaptive schemas including defectiveness/shame, mistrust/abuse, and enmeshment/undeveloped self, in predicting depression. However, depression symptoms are mostly related to defectiveness/shame schema that includes unfair behavior toward self and disconnection/rejection from others that indicate unsatisfied requirements such as incertitude and insecure empathy in family. Individuals with defectiveness/shame schema have negative attitude toward themselves about self-control and distress tolerance that is one of the important components of Beck cognitive triad in etiology of depression. In sum, when individuals experience the rejected/abused child schema, they feel great pain and fear of abandonment that refers to history of abuse in childhood that manifests itself in the form of depression, fear, frustration and humiliation. This schema will be reactivated with the abandonment or abuse treat (real or perceived).

Although this study has major strengths, some limitations merit discussion. First, it did not include clinical population with psychopathology of depression, and therefore no conclusions could be drawn regarding the

specificity of our findings. A second limitation related to the self-report measures. Despite these limitations, the current study has notable implications for school health. We found that early trauma and early maladaptive schema were related to depressive symptoms in children. These findings need further replication in more controlled setting with a clinical sample in order to determine the specificity of early trauma and early maladaptive schemas to depression. Further studies should also examine the casual relationship between change in early maladaptive schemas and improvement in depressive symptoms. In sum, our study provides empirical support regarding the fact that exposure to early trauma and maladaptive schemas can predict depressive symptoms.

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Footnote

Authors' Contribution: Leila Zare was responsible for collection, analysis and interpretation of and the statistical analysis. Zhaleh Refahi was responsible for the study supervision.

References

- Schulz A, Becker M, Van der Auwera S, Barnow S, Appel K, Mahler J, et al. The impact of childhood trauma on depression: Does resilience matter? Population-based results from the Study of Health in Pomerania. *J Psychosom Res.* 2014;**77**(2):97-103. doi: 10.1016/j.jpsychores.2014.06.008. [PubMed: 25077849]
- Bang YR, Park JH, Kim SH. Cut-Off Scores of the Children's Depression Inventory for Screening and Rating Severity in Korean Adolescents. *Psychiatry Investig.* 2015;**12**(1):23-8. doi: 10.4306/pi.2015.12.1.23.
- Heim C, Newport DJ, Mletzko T, Miller AH, Nemeroff CB. The link between childhood trauma and depression: Insights from HPA axis studies in humans. *Psychoneuroendocrinology.* 2008;**33**(6):693-710. doi: 10.1016/j.psyneuen.2008.03.008. [PubMed: 18602762]
- Maercker A, Michael T, Fehm L, Becker ES, Margraf J. Age of traumatization as a predictor of post-traumatic stress disorder or major depression in young women. *Br J Psychiatry.* 2004;**184**:482-7. [PubMed: 15172941]
- Kaslow NJ, Stark KD, Printz B, Livingston R, Ling Tsai S. Cognitive Triad Inventory for Children: Development and Relation to Depression and Anxiety. *J Clin Child Psychol.* 1992;**21**(4):339-47. doi: 10.1207/s15374424jccp2104_3.
- Asarnow LD, Thompson RJ, Joormann J, Gotlib IH. Children at risk for depression: Memory biases, self-schemas, and genotypic variation. *J Affective Dis.* 2014;**159**:66-72. doi: 10.1016/j.jad.2014.02.020.
- Young JE, Klosko JS, Weishaar ME. *Schema therapy: A practitioner's guide.* New York: Guilford Press; 2003. [PubMed: 19750562]
- Thimm JC. Relationships between early maladaptive schemas and psychosocial developmental task resolution. *Clin Psychol Psychother.* 2010;**17**:219-30. doi: 10.1002/cpp.647.
- Ehsani HB, Bahramizadeh H. Early Maladaptive Schemas and Agreeableness in Personality Five Factor Model. *Procedia - Social and Behavioral Sciences.* 2011;**30**:547-51. doi: 10.1016/j.sbspro.2011.10.107.

- Sajadi SF, Hajjari Z, Zargar Y, Mehrabizade Honarmand M, Arshadi N. Predicting Addiction Potential on the Basis of Early Traumatic Events, Dissociative Experiences, and Suicide Ideation. *Int J High Risk Behav Addict.* 2014;**3**(4):1-7. doi: 10.5812/ijhrba.20995.
- Saylor CF, Finch AJ, Spirito A, Bennett B. The children's depression inventory: A systematic evaluation of psychometric properties. *J Consult Clin Psychol.* 1984;**52**(6):955-67. doi: 10.1037/0022-006x.52.6.955. [PubMed: 6520288]
- Samm A, Varnik A, Tooding LM, Sisask M, Kolves K, Knorrning ALV, Varnik. Children's depression inventory in Estonia. *Eur Child Adolesc Psychiatry.* 2008;**17**:162-70. doi: 10.1007/s00787-007-0650-z. [PubMed: 17876502]
- Thastum M. The Children's Depression Inventory and classification of major depressive disorder. *Eur Child Adolesc Psychiatry.* 2005;**14**(6):328-34. doi: 10.1007/s00787-005-0479-2. [PubMed: 16220217]
- Rajabi GR. Investigating the reliability and validity of children depression inventory in 13-15 year-old students [in Persian]. *J Psychol Edu sci.* 2006;**37**:23-6.
- Thombs BD, Lewis C, Bernstein DP, Medrano MA, Hatch JP. An evaluation of the measurement equivalence of the Childhood Trauma Questionnaire—Short Form across gender and race in a sample of drug-abusing adults. *J Psychosom Res.* 2007;**63**(4):391-8. doi: 10.1016/j.jpsychores.2007.04.010. [PubMed: 17905047]
- Villano CL, Cleland C, Rosenblum A, Fong C, Nuttbrock L, Marthol M, et al. Psychometric utility of the childhood trauma questionnaire with female street-based sex workers. *J Trauma Dissociation.* 2004;**5**(3):33-41. doi: 10.1300/J229v05n04_03. [PubMed: 16957783]
- Roy A. Combination of family history of suicidal behavior and childhood trauma may represent correlate of increased suicide risk. *J Affect Disord.* 2011;**130**(1-2):205-8. doi: 10.1016/j.jad.2010.09.022. [PubMed: 20943272]
- Yeilagh MS, Mikaeeli N, Shokrkon H, Haghghi J. Investigating child abuse prevalence and predicting child abuse on the basis of general health of parents, adjustment, self-esteem and educational performance of students and demographic variables in abused and non-abused female students of guidance school [in Persian]. *J Psychol Educ Sci Shahid Chamran Uni Ahvaz.* 2007;**3**:167-94.
- Rijkeboer MM, de Boo GM. Early maladaptive schemas in children: development and validation of the Schema Inventory for Children. *J Behav Ther Exp Psychiatry.* 2010;**41**(2):102-9. doi: 10.1016/j.jbtep.2009.11.001. [PubMed: 19944408]
- Montazeri MS, Farsani ZK, Mehrabi H, Shakiba A. Relationship between early maladaptive schemas and depression in Guidance School in Falavarjan [in Persian]. *J Mazandaran Univ Med Sci.* 2013;**23**(98):179-88.
- Sherry A, Henson RK. Conducting and interpreting canonical correlation analysis in personality research: a user-friendly primer. *J Pers Assess.* 2005;**84**(1):37-48. doi: 10.1207/s15327752jpa8401_09. [PubMed: 15639766]
- Harris AE, Curtin L. Parental perceptions, early maladaptive schemas, and depressive symptoms in young adults. *Cogn Ther Res.* 2002;**26**(3):405-16. doi: 10.1023/a:1016085112981.
- Fowler JC, Allen JG, Oldham JM, Frueh BC. Exposure to interpersonal trauma, attachment insecurity, and depression severity. *J Affect Disord.* 2013;**149**(1-3):313-8. doi: 10.1016/j.jad.2013.01.045. [PubMed: 23507367]
- Kessler RC, McLaughlin KA, Green JG, Gruber MJ, Sampson NA, Zaslavsky AM, et al. Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *British J Psychiatry.* 2010;**197**(5):378-85. doi: 10.1192/bjp.bp.110.080499.
- Gaher RM, Hofman NL, Simons JS, Hunsaker R. Emotion Regulation Deficits as Mediators Between Trauma Exposure and Borderline Symptoms. *Cogn Ther Res.* 2013;**37**(3):466-75. doi: 10.1007/s10608-012-9515-y.
- Darvishi F, Rahmani MA, Akbari B, Rahbar M. A Comparison of Relationship between Early Maladaptive Schemas with Depression Severity in Suicidal Group and Non-clinical Sample. *Procedia Soc Behav Sci.* 2013;**84**:1072-7. doi: 10.1016/j.sbspro.2013.06.702.