

Alcohol use disorder and emotional abuse: the mediating role of early maladaptive schemas

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ABSTRACT

Objective: Studies have shown a relationship between the development of alcohol use disorder (AUD) and the existence of childhood traumas (CT). In this study, in order to gain a better understanding of the association between CT and AUD, the relationship between CT and AUD was analyzed. Further, it was investigated whether Early Maladaptive Schemas (EMS) play a mediating role in the relationship between emotional abuse (EA) and AUD. **Methods:** The participants were consecutively admitted male alcohol-dependent inpatients (n=220) and healthy controls (n=108). The participants were investigated with the Childhood Trauma Questionnaire (CTQ-28), Young Schema Questionnaire-Short Form (YSQ-SF) and Michigan Alcoholism Screening Test (MAST). Mediation analyses were conducted in order to evaluate the mediating effect of EMS between the relationship of AUD and CT. **Results:** The difference between CT total score and the EA score between the control group and the AUD group were statistically significant. An analysis of different types of traumas in the correlation with AUD revealed EA as the main predictor of AUD both directly and through its mediating effect with the EMS. In addition, it was determined that in the relationship between EA and AUD, EMS such as Enmeshment, Emotional Inhibition, Dependence and Insufficient Self-Control had mediating effect. **Discussion:** CT, especially EA are quite common in male inpatients with AUD and the negative effects of EA may play an important role in the development of AUD by causing EMS. Our findings imply that those with EA history in childhood may be particularly vulnerable to the development of AUD in adulthood. Therefore, in the prevention of the development and in the treatment of AUD, it may be useful to take into consideration EA experiences, to screen EMS that may mediate such relationship through scales and to conduct interventions in this regard. (*Anatolian Journal of Psychiatry* 2019; 20(2):125-132)

Keywords: childhood maltreatment, childhood trauma, early maladaptive schemas, alcohol use disorder

Alkol kullanım bozukluğu ve duygusal kötüye kullanım: Erken dönem uyumsuz şemaların aracılık rolü

ÖZ

Amaç: Araştırmalar yetişkinlikte alkol kullanım bozukluğu (AKB) gelişmesi ile çocukluk çağı travmalarının (ÇÇT) varlığı arasında bir ilişki olduğunu göstermiştir. Bu çalışmada, AKB ile ÇÇT arasındaki ilişki ele alınmış ve ayrıca erken dönem uyumsuz şemaların (EDUŞ), çocukluk çağı travmalarından biri olan duygusal kötüye kullanım (DKK) ile AKB arasındaki ilişkide aracı değişken olup olmadığına da bakılmıştır. **Yöntem:** Katılımcılar erkek alkol kullanım bozukluğu olan yatan hastalar (s=220) ve sağlıklı kontrol gruptan (s=108) oluşmuştur. Katılımcılara Çocukluk Çağı Travmaları Envanteri, Young Şema Envanteri-Kısa Formu ve Michigan Alkolizm Tarama Testi verilmiştir. AKB ve ÇÇT arasındaki ilişkide EDUŞ'un aracı etkisine bakmak için aracılık etkisi kullanılmıştır. **Sonuçlar:** Kontrol grubu ile alkol kullanım bozukluğu grubunun ÇÇT ve DKK toplam puanları arasında istatistiksel açıdan anlamlı bir fark

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vardır. Farklı ÇÇT'nin analizlerinin sonucunda, DKK'nin hem doğrudan, hem de EDUŞ gelişimine katkı yolu ile AKB'nin ortaya çıkışına temel hazırladığı söylenebilir. AKB'nin ek olarak, EDUŞ'lardan iç içe geçme, duygu yoksunluğu, bağımlılık ve yetersiz öz denetim gibi şemaların DKK ve AKB arasındaki ilişkide aracı rol oynadığı düşünülmüştür. **Tartışma:** Yatan erkek AKB hastalarında ÇÇT'lerinde özellikle DKK oldukça yaygındır ve DDK'ın negatif etkileri EDUŞ'ların oluşmasına ve AKB'nin gelişmesine neden olmaktadır. Çalışmamızın sonuçları çocukluğunda DDK'ya uğrayan kişilerin yetişkinlikte AKB geliştirmeye eğilimli olduklarına işaret etmektedir. Bundan dolayı, AKB'nin önlenmesinde ve tedavisinde, DKK deneyimlerini ve EDUŞ'ların aracı rollerini göz önüne alacak taramaların yapılması yararlı olabilir. (*Anadolu Psikiyatri Derg* 2019; 20(2):125-132)

Anahtar sözcükler: Çocukluk çağı kötüye kullanımı, çocukluk çağı travmaları, erken dönem uyumsuz şemalar, alkol kullanım bozukluğu

INTRODUCTION

Various studies have shown that people with childhood trauma history may resort to alcohol in order to cope with stressful conditions that emerge at adulthood and eventually start consuming alcohol at an earlier age and in larger amounts.¹ Their childhood traumas (CT) also have clinical significance as they negatively influence the treatment process creating higher risk of giving up treatment and higher rates of resistance to treatment.^{2,3}

There exist studies that analyze the correlation between various CT such as sexual abuse,⁴ physical abuse, physical neglect,^{5,6} emotional abuse and neglect^{7,8} and alcohol use. Even though emotional abuse (EA) is considered as a common type of trauma⁹ and it has been reported that among all childhood abuse cases, its prevalence varies between 5% and 35% depending on the type of sample studied.¹⁰⁻¹² Studies assert that the consequences of EA are as severe as those of physical or sexual abuse.¹³ Particularly, it has been shown that EA is associated with an extensive range of psychopathology in adolescence.^{13,14} Studies have shown that EA is correlated with alcohol and substance use in adulthood and that it enhances problems related to alcohol used disorders (AUD).¹⁵⁻¹⁷ However, there are not many clinical studies that focus on the conditions that cause the relationship between EA and AUD.^{18,19}

According to Young's schema theory, it is considered that people who have gone through traumatic experiences in early childhood internalize these experiences and develop dysfunctional character traits called 'Early Maladaptive Schemas (EMS)'.²⁰ According to Young these schemas that begin to develop in early childhood and continue throughout adulthood become permanent cognitive patterns. It is argued that people who had been subject to EA are under the risk of developing EMS and that EA plays a role in the development of psychopathology.⁹

It has been detected that patients under alcohol treatment; self-sacrifice, unrelenting standards, insufficient self-control and punitiveness schemas are more common in both groups compared to other schemas.²¹⁻²³

The studies conducted thus far have shown a relationship between AUD and EA and AUD and EMS, yet there are not many studies that focus on the role of EA on the etiology of AUD. For understanding the underlying features in this relationship, research on the mediating role of EMS may provide significant contribution. Defining the EMS that are effective in people with AUD may constitute a therapeutical approach for treatment.

The aim of this study is to investigate the relationship between AUD and EA and EMS as a mediator. No previous studies have been conducted about this potential relationship.

METHODS

Subjects

The study was conducted at the Alcohol and Substance Addiction Treatment and Research Center (AMATEM), Bakırköy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery in Istanbul, between September 2014 and July 2015 and was approved by the Ethical Committee of the Institution (6th January 2015, number: 441). The patients' written informed consent was obtained after thorough explanation of the study protocol. Two hundred and twenty admitted male alcohol-dependent inpatients according to the DSM-5 diagnostic criteria were considered for participation in the study. A healthy control group (n=108) was formed from male relatives of the patients that attended the general surgery outpatient department.

Measures

Sociodemographic Data Form: It was developed by the researchers in line with the objective of the study.

The Childhood Trauma Questionnaire (CTQ) (28-item version): It is a retrospective self-report instrument that inquires childhood maltreatment in five areas: emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect. It comprises 28 items about childhood experiences that are rated on a 5-point Likert-type scale ('never true' to 'very often true'). Reliability and validity of the CTQ have been documented.^{24,25} The CTQ-28 was validated in Turkish populations.²⁶

Young Schema Questionnaire-Short Form (YSQ-SF): It is a 90-item questionnaire developed by Young for measuring early maladaptive schemas. Each item is assessed by a Likert type 6-item scale (1=totally false for me, 6=describes me perfectly). YSQ-SF consists of 18 early maladaptive schemas, namely emotional deprivation, abandonment, mistrust/abuse, social isolation, defectiveness/shame, failure, dependence, vulnerability to harm, enmeshment, subjugation, self-sacrifice, emotional inhibition, unrelenting standards, entitlement, insufficient self-control, approval seeking, negativity/pessimism and punitiveness.²⁷ Studies related to the original form of the questionnaire showed that it is valid and reliable.²⁸ Studies related to the Turkish version of the questionnaire were performed and it was found that the questionnaire was valid and reliable.²⁹

Michigan Alcoholism Screening Test (MAST): The severity of alcohol-related problems was assessed using the MAST.³⁰ Total score reflects the severity of alcohol-related problems. The Turkish version of the MAST is valid and reliable for screening the severity of dependency of both alcohol- and drug-dependent patients.³¹

RESULTS

The AUD group was older than the control group ($t_{(326)}=7.19$, $p<0.001$). There was a statistically significant difference between the groups in terms of the marital status variant ($\chi^2_{(2)}=17.26$, $p<0.001$). The percentage of divorced people-widows in the AUD group was observed to be higher than that of the control group. There was a statistically significant inter-group difference with respect to the familial alcohol use variable (In the alcohol-dependency group, the ratio of those individuals with alcohol users in the family is higher than that of the control group, $\chi^2_{(1)}=36.36$, $p<0.001$). (Table 1)

We examined differences among the groups on their MAST scores. The results demonstrated that, as expected, the AUD sample (30.87 ± 10.43) scored higher on the MAST than the control group (3.37 ± 5.57). ($p<0.001$)

Table 1. Comparison of sociodemographic data of the subjects

	Control (n=108)		Alcohol use disorder (n=220)		p
	n	%	n	%	
Age - Mean±SD (Median)	35.19±9.96 (35)		43.57±9.89 (44)		<0.001*
Marital status					<0.001**
Married	62	57.4	123	55.9	
Single	37	34.3	42	19.1	
Divorced-separated-widow	9	8.3	55	25.0	
Familial alcohol use					<0.001**
No	90	83.3	107	48.6	
Yes	18	16.7	113	51.4	

*: Student's t test; **: Chi-square test;

The relation among alcohol use condition, the independent variable of the study, CTQ score, schema scale points and pathological narcissism scores was assessed using Pearson correlation method. AUD is a dichotomous variable and it is known that Pearson correlation may be used in evaluating the relation of this type of variable with continuous variables using SPSS

and the coefficient obtained is equal to the point biserial correlation coefficient. (Table 2).

There was a statistically significant inter-group difference in terms of the age variable ($p<0.05$). The covariance was included in the analysis a variable and MANCOVA was used when assessing whether there was a difference between

Table 2. Comparison of the Pearson's correlation among AUD, CTQ and EMS

	AUD r	EA r	FA r	SA r	EN r	FN r	CTQ r
Early maladaptive schemas							
Emotional abuse	0.219**	-					
Physical abuse	0.111*	0.672**	-				
Sexual abuse	0.004	0.428**	0.480**	-			
Emotional neglect	0.039	0.336**	0.272**	0.140*	-		
Physical neglect	0.133*	0.409**	0.338**	0.216**	0.081	-	
CTQ	0.135*	0.858**	0.816**	0.646**	0.542**	0.517**	-
Emotional deprivation	0.343**	0.513**	0.357**	0.183**	0.322**	0.234**	0.452**
Abandonment	0.376**	0.272**	0.231**	0.038	0.079	0.187**	0.218**
Mistrust/abuse	0.430**	0.376**	0.295**	0.109*	0.141*	0.196**	0.306**
Social isolation	0.230**	0.371**	0.344**	0.180**	0.258**	0.194**	0.376**
Defectiveness/shame	0.351**	0.340**	0.329**	0.151**	0.174**	0.287**	0.345**
Failure	0.331**	0.365**	0.278**	0.156**	0.199**	0.201**	0.331**
Dependence	0.377**	0.304**	0.262**	0.139*	0.160**	0.207**	0.292**
Vulnerability to harm	0.409**	0.349**	0.238**	0.086	0.143**	0.180**	0.274**
Enmeshment	0.432**	0.235**	0.202**	0.018	-0.014	0.177**	0.159**
Subjugation	0.355**	0.379**	0.279**	0.212**	0.161**	0.211**	0.335**
Self-sacrifice	0.303**	0.234**	0.169**	0.049	0.017	0.090	0.149**
Emotional inhibition	0.238**	0.252**	0.175**	0.128*	0.158**	0.218**	0.252**
Unrelenting standards	0.255**	0.252**	0.190**	0.110*	0.084	0.135*	0.208**
Entitlement	0.359**	0.307**	0.235**	0.086	0.088	0.199**	0.245**
Insufficient self-control	0.466**	0.317**	0.223**	0.094	0.142**	0.189**	0.264**
Approval seeking	0.218**	0.164**	0.083	0.078	-0.042	0.088	0.090
Negativity/pessimism	0.386**	0.320**	0.209**	0.026	0.104	0.205**	0.235**
Punitiveness	0.294**	0.233**	0.177**	0.041	0.116*	0.187**	0.206**

Pearson's correlation; *: $p < 0.05$; **: $p < 0.01$; AUD: Alcohol use disorder, CTQ: The Childhood Trauma Questionnaire (28-item version), EMS: Early maladaptive schemas, EA: PA, SA: EN, PN, ED:

the scores obtained from the questionnaires applied to the groups for checking probable effects of this condition. There was a statistically significant inter-group difference with respect to the scale scores applied ($V^{(s)}=0.309$, $F_{(24,302)}=5.63$, $p < 0.001$, partial $\eta^2=0.31$). Because the overall MANCOVA for group differences in EMS and CTQ was significant, we conducted univariate analysis of covariance tests for each of the 18 schemas and CTQ subscales separately to determine which schemas significantly differed between the groups, after controlling for differences in age. Bonferroni correction (0.05/number of independent variables) was used to reduce type I error in the assessment of these results. For this reason, the level of significance was accepted to be $p < 0.002$ (0.05/24) for all comparisons. Accordingly, when the age was controlled, all schema scales and CTQ EA scores of the AUD group were higher with statistical significance ($p < 0.002$). (Table 3)

Multi-variable hierarchical regression analysis was performed for determining the variables pre-

dicting AUD. This variable was the first one entered in the model to control the effect of the age variable, then at the second block followed by EA, physical abuse, physical neglect variables assessed by CTQ. In the final step, at the third block Schema scale scores were included in the model. In this case, it was seen that dependence, enmeshment, emotional inhibition and insufficient self-control schemas were also included in the model and EA became insignificant. Accordingly dependence, enmeshment, emotional inhibition and insufficient self-control schemas may also be said to have mediator effect. We examined mediator effects of dependence, enmeshment, emotional inhibition and insufficient self control schemas in the relation between EA and AUD. (Table 4)

The mediation analysis was conducted according to the principles of Baron and Kenny. In all regression models, the effect of EA variable on AUD was reduced upon entering Schema Z variables with Sobel Z test. According to the mediation analysis, while Dependency Schema

Table 3. Comparison of EMS's, CTQ Questionnaire of AUD and control groups using MANCOVA

n=328	Control (n=108) Mean±SD (Median)	Alcohol use disorder (n=220) Mean±SD (Median)	F _(1,325)	p	Partial η^2
Emotional deprivation	8.60±4.48 (7)	12.70±5.64 (12)	44.06	<0.001**	0.12
Abandonment	10.85±4.05 (10)	14.92±5.03 (14)	51.32	<0.001**	0.14
Mistrust/abuse	10.11±5.13 (9)	15.25±5.06 (15)	66.78	<0.001**	0.17
Social isolation	10.37±4.05 (10)	12.84±5.28 (13)	10.53	0.001**	0.31
Defectiveness/shame	8.12±4.73 (6)	11.86±4.67 (11)	43.48	<0.001**	0.12
Failure	9.62±4.57 (8)	13.55±5.59 (12)	49.37	<0.001**	0.13
Dependence	7.65±3.64 (5)	11.56±4.90 (11)	59.16	<0.001**	0.15
Vulnerability to harm	9.04±4.46 (9)	14.10±5.50 (14)	53.02	<0.001**	0.14
Enmeshment	8.69±4.07 (8)	13.70±4.19 (14)	65.79	<0.001**	0.17
Subjugation	13.09±5.54 (12)	12.15±4.40 (12)	47.33	<0.001**	0.13
Self-sacrifice	13.09±5.54 (12)	16.41±4.58 (16)	22.23	<0.001**	0.06
Emotional-inhibition	9.99±4.18 (8)	12.34±4.68 (12)	19.14	<0.001**	0.06
Unrelenting standards	14.33±4.95 (14)	16.79±4.10 (16)	15.34	<0.001**	0.05
Entitlement	10.80±5.35 (10)	14.83±4.71 (15)	26.31	<0.001**	0.08
Insufficient self-control	10.01±5.03 (10)	15.53±4.87 (16)	79.26	<0.001**	0.20
Approval seeking	13.75±5.18 (12)	16.16±5.02 (16)	16.76	<0.001**	0.05
Negativity/pessimism	11.61±4.87 (11)	16.09±5.12 (16)	47.29	<0.001**	0.13
Punitiveness	13.18±3.35 (14)	16.44±4.30 (16)	23.42	<0.001**	0.07
Emotional abuse	6.69±2.72 (5)	8.20±3.55 (7)	24.71	<0.001**	0.07
Physical abuse	6.17±3.40 (5)	6.98±3.40 (5)	4.34	0.038	0.01
Sexual abuse	6.14±2.80 (5)	6.16±2.60 (6)	0.48	0.489	<0.01
Emotional neglect	12.70±4.04 (14)	13.06±4.54 (13)	0.34	0.563	<0.01
Physical neglect	9.80±2.07 (9)	10.50±2.58 (10)	4.59	0.033	0.01
CTQ Total	41.46±11.30 (38)	44.91±12.19 (42)	2.93	0.008	<0.01

MANCOVA **: $p < 0.002$; AUD: Alcohol use disorder; CTQ: The Childhood Trauma Questionnaire (28-item version); EMS: Early maladaptive schemas

Table 4. Multi-variate hierarchical regression analysis for predicting alcohol use disorder

Independent variable	B	S.E.	OR	95% CI for	
				OR lower	OR upper
Block 3					
Age	0.089	0.017	1.093	1.058	1.129
Emotional abuse	0.037	0.055	1.037	0.930	1.155
Dependence	0.100	0.043	1.105	1.017	1.202
Enmeshment	0.162	0.043	1.176	1.081	1.280
Emotional inhibition	-0.116	0.045	0.890	0.815	0.973
Insufficient self-control	0.186	0.042	1.204	1.110	1.306
Constant	-7.001	0.908	0.001		

Forward Stepwise Likelihood Ratio

(Sobel $Z = 3.55$, $p < 0.001$, effect size $P_M = 0.38$), Emotional Inhibition Schema (Sobel $Z = 2.52$, $p < 0.05$, effect size $P_M = 0.18$) and Insufficient Control Schema (Sobel $Z = 4.31$, $p < 0.001$, effect size $P_M = 0.57$) were found to be fully mediator variables, Enmeshment Schema (Sobel $Z = 3.45$, $p < 0.001$, effect size $P_M = 0.46$) was found to be a partial mediator variable. (Table 5)

DISCUSSION

It is claimed that CT play an important role in the formation of alcohol use later in life.^{3,12} In this study both groups were compared in terms of total CT scores and the scores of different types of CT and it was analyzed as to which CT were effective on AUD. Further, it was investigated whether EMS had a mediating role in under-

Table 5. Mediator effect of early maladaptive schemas with respect to the relation between emotional abuse and alcohol use disorder AUD (age variable was checked)

Dependent variable	Independent variable	OR	S.E.	p	95% CI for	
					OR lower	OR upper
Alcohol use disorder	Emotional abuse	0.186	0.050	0.002	0.085	0.267
	Dependence	0.195	0.037	<0.001	0.123	0.268
	Emotional abuse	0.098	0.052	0.057	-0.003	0.199
	Enmeshment	0.224	0.036	<0.001	0.157	0.288
	Emotional abuse	0.107	0.510	0.034	0.016	0.199
	Emotional Inhibition	0.972	0.031	0.002	0.041	0.159
	Emotional Abuse	0.138	0.050	0.539	0.045	0.225
	Insufficient self-control	0.211	0.032	<0.001	0.154	0.273
	Emotional Abuse	0.072	0.053	0.1691	-0.287	0.156

standing the underlying factors in the relationship between EA and AUD and through which EMS this role was performed.

According to our results, while the total CT score of the AUD group was higher compared to controls, an individual study for each trauma type revealed that EA is not only directly different from the control group in a significant way but also the main predictor of AUD through its mediating effect. Previous studies revealed that EA has a more significant role than other CT on alcohol use later in life.^{7,17,32} Our results are in correlation with previous studies.

It was found that EA variable significantly predicted alcohol use, and later, when all 18 EMS were introduced, enmeshment, emotional inhibition, dependence and insufficient self-control schemas entered into the model. The mediating role of enmeshment, emotional inhibition, dependence and insufficient self-control schemas in the relationship between EA and AUD was determined.

According to the schema theory, the person who has 'enmeshment/undeveloped self' (EM) schema adopts the belief that one cannot survive without the constant support of the other, often experienced as a feeling of emptiness.³³ In a study it was reported that in males with AUD, the EM score was higher compared to controls.^{34,35}

Another schema that takes on a mediating role in terms of AUD is 'insufficient self-control/self-discipline.' (IS) Individuals having this schema cannot assume personal responsibility and need the guidance of others. They usually avoid pain, confrontation and responsibility.³³ The inability to resist insistence, to say no and especially not mechanism.^{39,40}

knowing one's own boundaries observed in AUD that result in alcohol use may be associated with IS. Loss of control and continuing with alcohol use despite negative consequences³⁶ may also be due to the IS. It has also been shown that in AUD, there is a correlation between IS and impulsivity. It is acknowledged that lack of self-control is a solid predictor of any behavior that satisfies immediate desires.^{36,37} Accordingly, the fact that IS is effective in both AUD and impulsivity, may provide a partial explanation as to why they are frequently observed simultaneously.

The dependence schema (DS) is defined as a personality in which one is unable to handle one's everyday responsibilities without considerable help from others. Due to feelings of worthlessness, one needs the words of others to feel good. The individual is unable to control his/her own life and resorts to feeling powerful through drinking. It may be considered that the DS determined as a mediator in our study paves the way for the formation of AUD in this way.

As for individuals having emotional inhibition schema (EI), they inhibit usual behavior and feelings to avoid shame and disapproval, and experience difficulty in expressing anger and vulnerability.²⁰ It is claimed that the EI develops in EA situations where the spontaneous expression of feelings are suppressed.²⁰ In our study, the mediating role of EI between EA and AUD has been observed. Individuals with EI may resort to alcohol use in order to avoid expression of feelings for fear of shamefulness of such behavior.³⁸ Intensive consumption of alcohol may be observed for avoiding such feelings. It is also reported in the literature that in the presence of EMS, individuals use more alcohol as a coping

Our findings may be interpreted in a way that EMS develop in individuals who have been subject to EA in childhood which in turn provide a basis for the formation of AUD as a way to cope with such schemas in adulthood. Hence, studies show that early traumatic interaction with parents form the basis of future maladaptive interactions with one's environment as well as psychopathology such as AUD.⁴¹⁻⁴³ In view of our findings, it will be useful for treatment purposes to be aware of the individual's past maltreatment experiences and to focus on the negative cognitive and emotional aspects of EMS. Considering the heterogeneous nature of AUD, in treatment programs for AUD, where necessary, EMS may be evaluated through specific scales and added as treatment targets.

Finally, this study also provides an additional result, namely it is necessary to make an effort for preventing EA by training caregivers in terms of protecting children from future mental illness

risks such as AUD.^{11,44}

Our study has certain limitations. First, it involves only males and inpatients. There are many studies that show that women's alcoholic substance use is different from that of men.^{45,46} Therefore the underlying EMS for AUD may be different for women. Further, inclusion of inpatients brings about more intense comorbid mental health problems. Also the results of the study are dependent on the retrospective recall of childhood trauma. Therefore, memory bias may be involved. Further, our study is a cross-sectional study, therefore longitudinal research is also required for obtaining more solid findings. Apart from all these, our study has significant advantages in that it is a clinical study conducted in a large clinical group where comparison with a control group was also available, and that no previous studies on the same matter have been encountered.

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