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Research / Araştırma

The Relationship Between Self-Harming Behavior, Suicide Attempt History and Defense Mechanisms in Patients with Opioid-Use Disorder

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ABSTRACT

The relationship between self-harming behavior, suicide attempt history and defense mechanisms in patients with opioid-use disorder

Objective: The aim of this study was to investigate the relationship between defense mechanisms and a history of self-harming behaviors (SHB) and suicide attempts (SA) in patients with opioid-use disorder (OUD).

Method: The study group consisted of 100 inpatients diagnosed with OUD. A Sociodemographic and Clinical Data Form, Defense Style Questionnarie-40 (DSQ-40), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI) were applied to all participants.

Results: Subscale scores for passive aggression (p=0.001), somatization (p<0.001), and immature factor (p=0.004) were higher in OUD patients with a SHB history than in those without. The anticipation subscale score was higher in patients with SHB and no relationship was found between other mature defense mechanisms and SHB (p=0.013). There was no significant relationship between SHB and BAI and BDI scores. Passive aggression (p=0.048), somatization (p=0.001), and immature factor (p=0.044) defense mechanism subscale scores were higher in patients with a history of SA. There was no relationship between SA history and mature defense mechanisms in OUD patients. BDI (p=0.05) and BAI (p=0.05) scores were higher in the presence of a SA history. In logistic regression analysis, passive aggression subscale scores and younger age determined the history of SHB in OUD patients. A history of SA was determined by lower age and suppression, dissociation, somatization, BAI, low idealization, projection, devaluation, splitting, and rationalization scores.

Conclusion: This study showed that immature defense styles were used more frequently by patients with a history of SHB and SA, and a history of SA was associated with higher anxiety and depression scores; SHB history was used as a kind of coping mechanism and was not associated with anxiety and depression scores in OUD. Association of a history of SHB or SA with the use of immature defense mechanisms may require consideration of the application of therapeutic programs that include a more effective use of mature defenses in addition to specific pharmacotherapies for patients with OUD. Therapeutic success rates could be increased if it is considered during planning pharmacotherapy that a history of SA is related with high anxiety and depression scores.

Keywords: Defense mechanisms, opioid use disorder, self-mutilation, suicide attempt

ÖZ

Opioid kullanım bozukluğu tanılı hastalarda kendine zarar verme davranışı ve intihar girişimi öyküsü ile savunma mekanizmalarının ilişkisi

Amaç: Bu çalışmanın amacı, kendine zarar verici davranış (KZVD) ve intihar girişimi (İG) öyküsü olan opioid kullanım bozukluğu (OKB) tanılı hastalarda savunma biçimlerinin bu davranışlarla ilişkisini araştırmaktır.

Yöntem: OKB tanısı almış yatarak tedavi gören 100 kişiden çalışma grubu oluşturuldu. Çalışmaya katılan tüm katılımcılara Sosyodemografik ve Klinik Veri Formu, Savunma Biçimleri Testi-40 (SBT-40), Beck Depresyon Envanteri (BDE) ve Beck Anksiyete Envanteri (BAE) uygulandı.

Bulgular: OKB ve KZVD öyküsü olanlarda KZVD öyküsü olmayanlara göre pasif saldırganlık (p≤0.001), somatizasyon (p<0.001) ve immatür faktör (p=0.004) alt ölçek puanları daha yüksekti. Olgun savunma mekanizmalarından beklenti alt ölçek puanı KZVD öyküsü olanlarda, olmayanlara göre daha yüksekken (p=0.013), diğer olgun savunma mekanizmalarıyla KZVD öyküsü arasında ilişki bulunamadı. KZVD öyküsü ile BDE ve BAE arasında anlamlı bir ilişki yoktu. İG öyküsü olanlarda pasif saldırganlık (p=0.048), somatizasyon (p=0.001), immatür faktör (p=0.044) savunma mekanizmaları alt ölçek puanları daha yüksekti. OKB tanılı hastalarda İG öyküsü ile olgun savunma mekanizmaları arasında ilişki tespit edilemedi. İG öyküsü yüksek BDE puanı (p≤0.05) ve yüksek BAE puanı (p≤0.05) ile ilişkiliydi. Lojistik regresyon analizinde OKB tanılı hastalarda pasif saldırganlık alt ölçek puanı küçük yaşla birlikte KZVD öyküsünü belirledi. İG öyküsünü ise küçük yaşla birlikte düşük idealleştirme, yansıtma, değersizleştirme, bölünme ve rasyonalizasyon puanları ile baskılama, inkâr, disosiyasyon, bedenselleştirme ve BAE puanları belirledi.

Sonuç: Çalışmada OKB tanısı olup KZVD öyküsü ve İG öyküsü olan hastalarda olgun olmayan savunma mekanizmalarının daha çok kullanıldığı, İG öyküsünün yüksek anksiyete ve depresyon puanlarıyla ilişkili olduğu ve KZVD'ın bir çeşit baş etme mekanizması olarak kullanılıp, anksiyete ve depresyon puanlarıyla ilişkili olmadığı gösterilmiştir. KZVD öyküsü ve İG öyküsünün olgun olmayan savunma mekanizmalarıyla ilişkili olduğu göz önünde bulundurularak OKB tanılı hastalarda spesifik farmakoterapinin yanısıra olgun savunma mekanizmalarının daha etkin kullanılmasına yönelik terapötik programlar uygulanması dikkate alınabilir. Farmakoterapi planlanırken İG öyküsünün yüksek anksiyete ve depresyon puanlarıyla ilişkili olduğunun göz önünde tutulması tedavinin başarı oranının artırabilir.

Anahtar kelimeler: Savunma mekanizmaları, opioid kullanım bozukluğu, kendine zarar verme, intihar girişimi

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INTRODUCTION

Self-harming behavior (SHB) is defined as 'the deliberate, non-suicidal destruction of one's own body tissue' (1). While SHB may exist in many different forms, it is generally seen in behaviors such as cutting or burning the skin, plucking at wounds, banging one's head and arms, punching oneself, chewing on fingers, piercing one's body and inserting foreign objects under the skin (1,2). In the general population, 2-4% of individuals are known to undergo at least one episode of self-harm during their lifetime (3). This rate was reported to be 26-29% among hospitalized alcohol-dependent patients in Turkey (4,5). There are also studies showing a relationship between SHB and substance use disorder or other psychiatric disorders (4,6). Studies investigating the relationship between SHB and substance use disorder reported that alcohol intake and substance injection were a kind of SHB; and that the consumption of a substance may trigger SHB by impairing the ability to assess reality, raising the pain threshold, and triggering imaginary pleasure sensation (7). Maloney et al. (8), compared patients with or without opioid use disorder (OUD) based on their history of SHB or suicide attempt (SA). They found that patients with and without OUD did not differ in terms of SHB prevalence, contrary to the findings of previous studies (9,10). The authors further pointed out that OUD did not specifically increase the risk for SHB; rather, its increase was due to an unfavorable life style and other risk factors that actively involve the development of substance addiction or result from such addiction (8). SHB is a critical problem as it predicts increased risk for completed suicide (11,12) and important problems in therapeutic or interpersonal relationships (13). Its prevalence is reported to rise gradually (14).

Suicide attempt (SA) has been defined as "a self-destructive act deliberately carried out where there is a clear expectation of death" (15). It is not a random and purposeless movement, but a way of escaping from a problem or crisis that inexorably leads to an intense grievance. It is associated with ambivalent conflicts between despairing thoughts and unendurable stress factors and an accompanying limitation of options the individual is faced with (16). The association of suicide with substance use and alcoholism is reported to be as high as 15%. Patients with OUD also have an increased risk of SA compared to the general population (9).

Defense mechanisms are defined as an indicator of an individuals' way of coping with a conflict (17). Defense mechanisms are involuntary cognitive processes that occur at the unconscious level to reduce sudden changes in the internal and external world by changing the conscious experience of feeling, emotion, and thought (18,19). Defense mechanisms first appeared in DSM-IV as a psychoanalytic concept (20). The concept is considered as equivalent to coping mechanisms and defined as 'automatic psychological processes that protect the individual against anxiety and from the awareness of internal or external dangers or stressors' (21). Defense mechanisms are divided into three groups: mature defense mechanisms, neurotic defense mechanisms, and immature defense mechanisms. While mature defense mechanisms are generally assumed to operate to protect self-esteem, immature defense mechanisms are thought to operate through rigid and extreme distortions in order to preserve the integrity of the self. Whereas the use of immature defense mechanisms is rather associated with disturbed personal and interpersonal relationships, the use of mature defense mechanisms is associated with mental well-being (22,23).

The aim of this study was to investigate the association of a history of SA and SHB with defense mechanisms in OUD patients to establish a base for determining appropriate therapeutic approaches to reduce SA and such behaviors that influences patient management adversely.

METHOD

After obtaining ethics approval, the study was performed with 100 patients hospitalized in a Mental Health and Disorders Hospital with a diagnosis of OUD according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (24) after

presenting to the outpatient clinic of the Alcohol and Substance Addiction Therapy and Research Center (AMATEM). Participants were interviewed about 4-6 weeks after the last use of the substance, i.e. after the detoxification process.

Study inclusion criteria were as follows: 18-65 years of age, established diagnosis of OUD as defined by DSM-5, no other associated DSM-5 disorder, no previous or current neurological disease or treatment, no significant somatic pathology or disease that may influence the variance of existing psychiatric symptoms, and giving written informed consent.

Measures

All patients were administered a Sociodemographic and Clinical Data Form, Defense Style Questionnaire-40 (DSQ-40), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI).

Sociodemographic and Clinical Data Form: This form was prepared in accordance with the clinical experience and information gleaned from the literature with respect to the aims of the study. The semi-structured form consists of sociodemographic data including age, gender, marital status, education status, occupation, place of residence, economic status, and family structure, and of clinical data including duration of disease, number of hospitalizations, and psychosocial stress etiology at disease onset.

Defense Style Questionnaire (DSQ-40): The DSQ-40 is a self-assessment scale consisting of a total of 40 items and 20 defenses that evaluate empirically the reflections of unconscious defense styles on the level of consciousness. In the test described by Andrews et al. (25), each item is rated between 1 (strongly disagree) and 9 (strongly agree). The 20 defensive mechanisms in the questionnaire are grouped in three dimensions, namely immature, neurotic, and mature defenses. Immature defenses are projection, passive aggression, acting out, isolation, devaluation, autistic fantasy, denial, displacement, dissociation, splitting, rationalization, and somatization; neurotic defenses are undoing, pseudo-altruism, idealization, and reaction formation; and mature defenses are sublimation, humor, anticipation, and suppression. The Turkish validity and reliability study of the questionnaire was performed by Yilmaz (26).

Beck Depression Inventory (BDI): The scale was developed by Beck (27) in 1961 to measure the risk of depression in adults with the change in severity of depressive symptoms and their level. Its validity and reliability in the Turkish language was confirmed by Hisli (28) in 1989. The cut-off point of the inventory was set at 17. It is a 21-item Likert-type self-assessment questionnaire that is frequently used in depression studies. Every item is related with a behavioral characteristic of depression. The items are scored from 0 to 3 according to the severity of the depression. The total score ranges from 0 to 63. While a score of 0-9 indicates that there are no depressive symptoms, scores between 10-16 points indicate mild, 17-24 points moderate, and ≥25 points severe depression.

Beck Anxiety Inventory (BAI): This is a self-assessment inventory developed by Beck et al. (29) to determine the frequency of anxiety symptoms experienced by individuals. It consists of 21 items and is a Likert-type scale scored between 0-3. The reliability and validity for Turkey was confirmed by Ulusoy (30).

Statistical Analysis

As the data obtained exhibited a normal distribution (Kolmogorov-Smirnov test), Student's t-test was used to compare independent groups (presence or absence of SHB and SA history) and Pearson correlation test to investigate the association of intra-group variables. In addition, logistic regression analysis was applied for SHB and SA, respectively. Statistical evaluation was performed using version 22 of the SPSS software package.

RESULTS

The study was conducted between May and September of 2016 in hospitalized patients at AMATEM. Among 137 patients with OUD, 37 patients were excluded from the study for having the following comorbidities: anxiety disorder (n=15), depressive disorder (n=11), attention deficit hyperactivity disorder (n=4), somatization disorder (n=2), and other psychiatric disorder (n=5).

Participants' average age was 25.36±6.43 years. Thirty patients (30%) were married, 68 (68%) were single, and two (2%) were divorced. One-fourth of the patients were unemployed (25%). Only four patients were living alone; the remaining were living with their family (96%). The average number of siblings was five. Education status showed 4% being litare, 33% had primary school education, 37% secondary school, 19% high school, and 7% university education. Seventy-one participants (71%) had social security, whereas the other 29 did not (29%). The number of subjects experiencing legal issues was 59 (59%), the other 41 (41%) had no legal problems.

The number of patients with SHB and SA was 57 (57%) and 30 (30%), respectively; and their co-occurrence was seen in 25 patients (25%). The rate of SHB history declined with age ($r=-0.219$; $p<0.05$). Age was positively associated with the rate of suicidal thoughts ($r=0.217$; $p<0.05$) and negatively associated with the number of SA ($r=-0.97$, $p<0.05$). The rate of SHB history was not correlated with marital status ($p=0.087$). The number of SA increased in single patients ($r=0.221$; $p<0.05$). Currently employed subjects had lower rates of having a history of SHB ($r=-0.239$; $p<0.05$) and SA ($r=-0.209$; $p<0.05$).

There was no significant correlation between a history of SHB and BAI or BDI score (Table 1).

Subscale scores for passive aggression ($p<0.001$), somatization ($p<0.001$), and immature factor ($p<0.01$) were significantly higher in patients with a SHB history than those without. Among mature defense mechanisms, the anticipation score was also significantly higher in patients with a SHB history ($p<0.05$) while no association was detected based on SHB history in terms of other mature defense mechanisms (Table 1).

Table 1: Findings in cases with history of self-harming behavior

	No self-harming behavior (n=43)		Self-harming behavior (n=57)			
	Mean	**SD**	**Mean**	**SD**	**t**	**p**
Defense Style Questionnaire						
Passive aggression	3.79	2.18	5.35	2.44	-3.31	0.001
Somatization	3.97	2.46	5.75	2.40	-3.64	<0.001
Immature factor	4.43	1.00	5.07	1.14	-2.93	0.004
Anticipation	6.51	2.52	7.54	1.56	-2.52	0.013
Beck Depression Inventory	16.91	11.95	21.84	14.06	-1.85	0.067
Beck Anxiety Inventory	18.70	11.12	23.74	14.95	-1.86	0.066

SD: Standard deviation

Table 2: Significant findings in cases with history of suicide attempt

	No suicidal attempt (n=70)		Suicidal attempt (n=30)			
	Mean	**SD**	**Mean**	**SD**	**t**	**p**
Defense Style Questionnaire						
Passive aggression	4.36	2.26	5.42	2.74	-2.00	0.048
Somatization	4.42	2.48	6.28	2.31	-3.51	0.001
Immature factor	4.65	1.03	5.14	1.27	-2.04	0.044
Beck Depression Inventory	17.31	11.49	25.33	15.76	-2.85	0.005
Beck Anxiety Inventory	17.90	10.11	30.13	16.74	-4.50	<0.001

SD: Standard deviation

Table 3: Factors that affected history of self-mutilation behavior at most in logistic regression analysis

	B	S.E.	Wald	df	p	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Age	-0.095	0.045	4.516	1	0.034	0.910	0.834	0.993
Passive aggression	0.350	0.121	8.366	1	0.004	1.420	1.120	1.800

Table 4: Factors that affected history of suicide attempt at most in logistic regression analysis

	B	S.E.	Wald	df	p	Exp(B)	95% C.I. for EXP (B)	
							Lower	Upper
Age	-1.086	0.423	6.612	1	0.010	0.337	0.147	0.772
Suppression	0.876	0.385	5.171	1	0.023	2.402	1.129	5.110
Idealization	-1.400	0.547	6.545	1	0.011	0.247	0.084	0.721
Projection	-1.074	0.393	7.466	1	0.006	0.342	0.158	0.738
Devaluation	-1.470	0.547	7.234	1	0.007	0.230	0.079	0.671
Denial	1.617	0.538	9.016	1	0.003	5.036	1.753	14.465
Dissociation	1.604	0.578	7.703	1	0.006	4.974	1.602	15.440
Disintegration	-1.268	0.492	6.634	1	0.010	0.281	0.107	0.739
Rationalization	-0.787	0.347	5.138	1	0.023	0.455	0.231	0.899
Somatization	2.260	0.838	7.266	1	0.007	9.582	1.853	49.560
Beck Anxiety Inventory	0.194	0.070	7.567	1	0.006	1.214	1.057	1.393

History of SA declined with age in patients with OUD (r=0.97, p<0.05). The rate of having a SA history was higher in single patients (r=0. 221, p<0.05). In patients with a SA history, BDI (p<0.05) and BAI (p<0.05) scores were higher than in those without (Table 2).

Passive aggression (p<0.05) and somatization (p<0.001) rates were higher in patients who had a history of SA compared to those who did not. The rate of immature factor was also found higher in patients with a SA history than in those without (p<0.05). No association was found between SA history and other mature defense mechanisms (Table 2).

Logistic regression analysis showed that passive aggression subscale scores and younger age were the determinants for a history of SHB in patients with OUD (Table 3). On the other hand, the SA history was determined by younger age, low idealization, projection, devaluation, splitting, rationalization, suppression, denial, dissociation, somatization, and BAI scores (Table 4).

DISCUSSION

The study conducted by Evren et al. (31) on alcohol dependent patients examining the styles of defense with respect to SHB and SA histories reported that acting out was more common in patients with a SHB history; and together with younger age, it was a determinant of a SHB history. It was further reported that in alcohol dependent patients with SA history, scores for sublimation, anticipation, and suppression (and for total mature defense style) were lower, and a low score for anticipation and younger age were determinants of SA history. This observation was attributed to the earlier therapy-seeking behavior of alcohol-dependent patients with a history of SHB or SA.

In our study, passive aggression subscale score and younger age predicted the SHB history; and low idealization, projection, devaluation, splitting, rationalization, suppression, dissociation, somatization, and BAI scores together with younger age determined the SA history. The finding that younger age determined the history of SHB and SA in patients with OUD indicates earlier treatment-seeking in these patients, as reported in alcohol-dependent patients. In addition, it was detected that idealization, projection, devaluation, splitting, rationalization, suppression, denial, dissociation, somatization, and BAI scores determined the history of SA, and that the SHB history was predicted by passive aggression. This

suggests that OUD subjects used more complex defense mechanisms than did patients with alcohol dependence.

In the current study, scores for the passive aggression and somatization subscales of immature defense mechanisms were found to be higher in OUD subjects with a SHB history. The immature factor subscale score was higher. Passive aggression is the expression of angry and aggressive feelings towards others by influencing them indirectly and negatively, e.g. by job failure, procrastination, diversion, or malingering, rather than by directly communicating them verbally or through behavior. Somatization is a defense mechanism to relieve anxiety and distress for which no reason or source is known by attributing these to a known concrete reason, source, or situation (32). The reason for a higher utilization of passive aggression and somatization in patients with a SHB history may be their inadequate ability to express their problems verbally in an appropriate manner, to seek help, and to use problem-solving techniques effectively. The lower scores of passive aggression and somatization subscale scores in patients with OUD and without a SHB history suggest that these styles of defense mechanisms are related to SHB rather than OUD. The anticipation subscale score in our study was higher in patients with SHB. The anticipation defense mechanism is defined as a realistic calculation of the problematic and negative outcomes that may be encountered in the future and to make purposeful plans accordingly, considering the bad possibilities and being prepared for difficulties based on the worst possible outcome (32). SHB is considered by some researchers as a coping mechanism or affection stabilization strategy as it helps to alleviate strong feelings and to reduce tension (33). The use of SHB as a coping mechanism for helping to alleviate strong feelings and reduce tension may be related with the use of mature defense mechanisms by these group of patients (1). In our study, no relationship was found between other mature defense mechanisms and a SHB history. The fact that there was no association of SHB history with either BAI or BDI supports the idea that SHB is used as a coping mechanism to reduce internal conflict and tension, not increasing BAI or BDI scores unlike in those with a SA history. In fact, patients with SHB stories have stated that they are acting in this way to reduce tension, to stabilize affection, to improve their mood, and to move away from the discomfort of dissociative experiences (13,34). It is known that a depressive profile is associated with low mature, high immature, and highly neurotic defense mechanisms, whereas the anxiety profile is related with high immature and highly neurotic defenses (35). On the other hand, in our study, a SA history was only associated with higher immature defense mechanisms despite higher BAI and BDI scores, while against our expectation, no association of SA history with mature or neurotic defense mechanisms was found.

Patients with a diagnosis of substance use disorder were reported to be more likely to use rationalization, denial, suppression, and projection defense mechanisms than do healthy controls (36,37).

A Turkish study reported that individuals with substance addiction were more likely to use autistic fantasy, sublimation, pseudo-altruism, and isolation (38). In another study comparing patients with and without alcohol dependence, the former group was less likely to use neurotic defense mechanisms, some immature defense mechanisms (splitting, somatization, projection, acting out), and only humor among the mature defense mechanisms compared to the healthy control group (39). It was emphasized that the use of immature defense mechanisms is related to the severity of dissociative experiences, addiction, and childhood trauma, and that these patients had more psychological problems. Patients with substance use disorders who often use mature defense mechanisms may need the substance as a way of coping with the anxiety caused by their conflict, resulting in an increased severity of addiction (38).

No studies in the literature reported a relationship of defense mechanisms with SHB or SA history in patients with OUD. Nevertheless, such a relationship was investigated in patients with alcohol-use disorder (40). The study by Evren et al. (39) reported a higher rate of acting out in patients with SHB history, which was further associated with younger age. Similarly, several

other studies reported that SHB and SA history were associated with younger age in patients with alcohol use disorder and early onset of alcohol use disorder (4,5,41). In agreement with these findings, our study showed SHB to decrease with age.

Longitudinal studies reported an annual mortality rate of 1-3% among patients with OUD (10). Standardized mortality rates are reported as 2.4- to 55-fold higher than those in the normal population. The major causes of death among opioid users include overdose, diseases, trauma, and suicide (10). A study evaluated the prevalence of SA with its subtypes (10), yet no study was found to investigate the relationship between SA and defense mechanisms. In our study, passive aggression and somatization subscale scores as well as immature factor scores were higher in patients with OUD and a history of SA. It is known that the lifetime SA history is positively correlated with immature defense mechanisms (42) and that immature defense mechanisms are the best indicator of an existing SA (43). In our study, as in previous ones, there was no relationship between SA and mature defense mechanisms in patients with OUD. The increase in the rate of suicide with age may explain the increase in suicidal thoughts, mainly due to anxiety and depression associated with traumatic childhood trauma, problematic family relationships, and unemployment-induced economic problems in patients with substance use disorder. In parallel, BDI and BAI scores were higher in patients with a SA history. Moreover, we also showed that SHB and SA were reduced among working patients.

As the presence of SHB and SA histories is related with comorbid psychopathology and complicates the therapy, these conditions should be clinically evaluated with caution. Our study revealed that immature defense mechanisms were more commonly used by OUD patients with SHB and SA history; SA history co-occurred with anxiety and depression, and SHB, used as a coping mechanism, was not associated with anxiety or depression scores. Considering that immature defense mechanisms are related with symptom severity and the lifetime SA history is positively correlated with immature defenses (41), clinical approaches to patients with OUD may include therapeutic programs that involve a more effective use of mature defense mechanisms in addition to specific pharmacotherapy.

The fact that our study only included male patients due to the special conditions of the hospital may be considered as a limitation for the generalization of the findings. Our study could be regarded as baseline research in the field, which may be elaborated with further studies including participants from both sexes.

Contribution Categories		**Author Initials**
Category 1	Concept/Design	S.B.
	Data acquisition	K.A.
	Data analysis/Interpretation	S.B.
Category 2	Drafting manuscript	S.B.
	Critical revision of manuscript	K.A.
Category 3	Final approval and accountability	S.B., K.A.
Other	Technical or material support	S.B.
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