

Effect of Severity of Depression and Perceived Social Support on Suicidal Ideation among Patients Hospitalized with Substance Use Disorder

Madde Kullanım Bozukluğu İle Hastaneye Yatırılan Hastalarda Depresyonun Şiddeti ve Algılanan Sosyal Desteğin İntihar Düşüncesi Üzerindeki Etkisi

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Abstract

Objective: The aim of this study was to investigate the effects of perceived social support and depression on suicidal ideation in inpatients receiving substance abuse disorder treatment.

Method: A total of 110 inpatients in an Alcohol and Drug Treatment Center were included in the study. A sociodemographic and clinical information form, Beck Depression Inventory, Suicidal Ideation Scale, and Multidimensional Perceived Social Support Scale were administered to all patients.

Results: No significant correlation was identified between total social support score and suicidal ideation, whereas a weak negative but statistically significant correlation was found between social support from family and suicidal ideation scores ($r=-0.231$; $p=0.016$). The mean value of suicidal ideation was 2.22 in the non-depressed group and 10.13 in the severely depressed group. We also found that patients who were exempted from military service and those who had attempted suicide before had statistically significantly higher scores on the suicidal ideation scale.

Conclusion: In patients diagnosed with substance use disorder, various factors may increase the risk of suicidal behavior. In particular, patients with insufficient social support, depressive symptoms, unable to carry out their military service and those who have attempted suicide before should be closely followed for suicidal ideation.

Keywords: Substance use disorder, suicide ideation, social support

Öz

Amaç: Çalışmamızda, madde kullanım bozukluğu nedeniyle yatan hastalarda algılanan sosyal desteğin ve çeşitli belirleyicilerinin intihar düşüncesini nasıl etkilediğini ve depresyon ile ilişkisini araştırmayı amaçladık.

Yöntem: Çalışmaya Alkol Madde Tedavi Merkezinde yatarak tedavi gören 110 hasta dahil edilmiştir. Hastalara sosyodemografik ve klinik bilgi formu, Beck Depresyon Envanteri, İntihar Düşüncesi Ölçeği ve Çok Boyutlu Algılanan Sosyal Destek Ölçeği uygulandı.

Bulgular: Toplam sosyal destek puanı ile intihar düşüncesi arasında anlamlı bir korelasyon saptanmazken, aileden alınan sosyal destek ile intihar düşüncesi puanları arasında negatif yönde zayıf ancak istatistiksel olarak anlamlı bir korelasyon bulundu ($r=-0.231$; $p=0.016$). İntihar düşüncesi ortalama değeri depresyonda olmayan grupta 2,22 iken ağır depresyonda olan grupta 10,13'tür. Ayrıca, askerlikten muaf olan ve daha önce intihar girişiminde bulunmuş olan hastaların intihar düşüncesi ölçeğinden istatistiksel olarak anlamlı derecede daha yüksek puan aldıkları bulunmuştur.

Sonuç: Madde kullanım bozukluğu tanısı almış hastalarda çeşitli faktörlerin intihar davranışını rislini arttırabilceği göz önünde bulundurulmalıdır. Özellikle sosyal desteği yetersiz, depresif semptomları olan, askerlik görevini yerine getiremeyen ve daha önce intihar girişiminde bulunmuş hastalar intihar düşüncesi açısından yakından takip edilmelidir..

Anahtar kelimeler: Madde kullanım bozukluğu, intihar düşüncesi, sosyal destek

Introduction

Depressive symptoms are among the most common problems reported by people seeking treatment for drug addiction and this comorbidity contributes to a significant proportion of disability attributed to mental disorders (1). Depression and drug addiction are critical not only because of their high prevalence, but also because of their negative consequences; these patients are at risk of depressive symptoms, psychosocial impairment and dysfunction, which can be exacerbated by comorbid stressors (2). These psychiatric conditions and SUD comorbidity have been evaluated as an important determinant for suicidal thoughts and behaviors (3). Furthermore, conditions specific to SUD treatment such as withdrawal, relapse of addiction and transition to treatment are also thought to increase the risk of suicide (4). Inpatients with SUD may be at particularly increased risk of suicidal ideation and behavior. Patients who are hospitalized due to suicide attempt and have comorbid SUDs are more likely to present to substance abuse treatment with more severe diagnoses and addiction profiles such as severe depression or heavy substance use and to experience suicidal thoughts and behavior both during treatment and after discharge (5,6). Social support is one of the key factors related to suicide risk during SUD treatment. Studies show that perceived social support is associated with a decrease in suicidal thoughts and behaviors. Additionally, the perception of being supported by others changes over time, which can be correlated with changes in suicidal ideation (7). Low social support is commonly observed during treatment for SUD which can be a detriment to treatment, especially among patients receiving inpatient care (8).

Inpatient settings are inherently more limiting than outpatient settings in terms of patients' ability to engage more freely and meaningfully with their support networks. Therefore, inpatients may frequently report loneliness and perceived social isolation (9). In view the available data, we aimed to investigate in the current study how perceived social support and its various determinants affect suicidal ideation in patients hospitalized for SUD treatment and to investigate its correlation with depression.

Method

Setting and Sample

The Alcohol and Drug Treatment Center, where the study was done, is affiliated with a state hospital and has a 30-bed service and two outpatient clinics. The number of daily admissions to the outpatient clinic is around 50 in total and 3-4 new patients are admitted on average every day. The average number of inpatient admissions was around 800 in the year the study was conducted. 110 patients who were diagnosed with substance use disorder (SUD) according to the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) (10) criteria by a psychiatrist, were informed about the study and provided written informed consent were included in the study. A semi-structured sociodemographic and clinical information form was completed by a psychiatrist. The sample size of the study was calculated as 29 individuals with a type 1 error level of 5% and 80% power using the G*Power software program, with the primary outcome of a measure of perceived suicidal ideation and with reference to the study by Altıntaş et al (11). Participants were assessed with the Beck Depression Scale, sociodemographic data form, Suicidal Ideation Scale, and Multidimensional Perceived Social Support Scale. The inclusion criteria were as follows: age between 18-65 years, being able to read and write, and having a diagnosis of SUD according to DSM-5. The exclusion criterion was the presence of an obvious mental (mental retardation, bipolar manic episode, psychotic disorders) or physical disability. Prior to the start of the study, ethical evaluation and permission were obtained from the Harran University Faculty of Medicine ethics committee dated 20.05.2022 and numbered 22.12.19 at its meeting numbered 12.

Measures

Sociodemographic Data Form

This form, developed by the researchers, gathers data on age, gender, marital status, employment status,

family structure, past forensic events and psychiatric history of the patients.

Beck Depression Scale (BDS)

The BDS was developed by Beck and colleagues (12) in 1961 to measure behavioral symptoms of depression. It was designed to determine the level of depression and to monitor the changes in response to treatment. The BDS defines symptoms and behaviors related to depression and each item in the scale is given a score between 0-3. The severity is defined as 0-9= Minimal, 10-16= Mild, 17-29= Moderate, 30-63= Severe depression. It was translated into the Turkish as "Beck Depression Inventory" and Turkish validity and reliability studies have been conducted. The reliability study results of the scale showed that the coefficient of consistency was 0.80 and the two-half reliability was calculated as 0.74 (13).

Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS was originally designed by Zimet et al. in 1988 to determine the social support factors perceived by individuals (14). The scale was validated and the reliability study was conducted in Türkiye by Eker and Arkar in 1995 (15). The scale includes a total of 12 items and is a 7-point Likert-type scale (1-7 points) ranging from "absolutely no" to "absolutely yes". In the study in which the translation of the scale into Turkish was reviewed, it was reported that Cronbach's Alpha internal consistency reliability coefficient was 0.89 for the total scale, 0.85 for the Family sub-dimension, 0.85 for the Friends sub-dimension, and 0.92 for the A Special Person sub-dimension (15).

Suicidal Ideation Scale:

This is a 17-question self-assessment scale that was developed by Levine et al. (16). The aim of the form is to determine the severity of suicidal ideation. The total score of the scale ranges between 0 and 17. Higher scores indicate that the person has more serious and significant suicidal ideation. The validity and reliability study of the Turkish version of the Suicidal Ideation Scale was conducted in 1995. The test and retest reliability was found to be $r=0.88$, Cronbach's alpha coefficient was 0.84, and the lowest and highest item-test correlation coefficients were 0.20 and 0.61, respectively (Dilbaz et al. 1995) (17).

Statistical Analysis

Statistical analyses were performed by a biostatistician. The data were statistically analyzed with IBM SPSS v23. Compliance with normal distribution was analyzed with skewness kurtosis coefficients and (± 3) coefficients. To investigate the relationship between the suicidal ideation scale score and the other scale scores, Pearson correlation coefficient was used. Analysis of Variance (ANOVA) test was used to compare normally distributed data according to three or more groups and the Tamhane's T2 test was used to analyze multiple comparisons. Linear Regression analysis was applied to evaluate the independent variables affecting the suicidal ideation score. $P<0.050$ was accepted for significance level.

Results

The average age of the patients included in the current study was 29.49 years with a range of 18- 57 years. Evaluation of substance use habits indicated that 62.7% of the participants used heroin, 38.2% used marijuana, 62.7% used methamphetamine and 20.9% of the participants used other substances (Table 1).

Among the patients recruited to the study, 22.9% reported mild depression, 35.8% reported moderate depression and 7.3% reported severe depression. The average suicidal ideation score of the participants was 5.00, with a minimum of 0.00 and a maximum of 17.00. The average total social support score was 4.18, with a minimum of 1.00 and a maximum of 7.00 (Table 2).

No significant relationship was identified between the total social support score and suicidal ideation; however, a statistically significant but weak negative correlation was identified between the social support received from family and suicidal ideation scores ($r=-0.231$, $p=0.016$). There was no statistically significant relationship between the other scores and suicidal ideation ($p>0.050$) (Table 3).

Table 1. Descriptive statistics of demographic characteristics

Variable	Mean. \pm s. deviation / n	Median (min. - max.) / %
Age of the patient	29.49 \pm 6.74	28.00 (18.00 - 57.00)
Place of residence		
City Center	72	65.5
Township	23	20.9
Rural	15	13.6
With whom he lives		
Parents and Siblings	62	56.4
Partner and Children	34	30.9
Alone	6	5.5
Parents and Partner	8	7.3
Marital Status		
Married	44	40.0
Single	60	54.5
Widow	6	5.5
Education Status		
Primary School	31	28.2
Middle School	56	50.9
High School	18	16.4
University	5	4.5
Employment Status		
Active	52	47.3
Temporary	16	14.5
Not working	42	38.2
Controlled Probation		
Yes	77	70.0
No.	33	30.0
Incarceration		
Yes	66	60.0
No.	44	40.0
Military Service		
Seamless-Complete	89	80.9
Exempt	21	19.1
Heroin Use		
Yes	69	62.7
No.	41	37.3
Marijuana Use		
Yes	42	38.2
No	68	61.8
Methamphetamine Use		
Yes	69	62.7
No.	41	37.3
Does anyone else use it?		
Yes	23	20.9
No.	87	79.1
Alcohol Use		
Yes	5	4.5
No.	105	95.5
Substance Use Period (years)	8.91 \pm 5.07	9.00 (1.00 - 25.00)

Previous Inpatient Treatment		
Yes	64	58.2
No.	46	41.8
Number of Inpatient Treatments	2.46±1.53	2.00 (1.00 - 9.00)
Suicide Attempt		
Yes	33	30.0
No.	77	70.0
Substance Use in the Family		
Yes	25	22.7
No.	85	77.3
Socioeconomic Status		
Less than Minimum Wage	68	61.8
More than Minimum Wage	42	38.2

Table 2. Descriptive statistics of the scales

	Mean. ± SD or n	Median (min. - max.) or %
Depression		
No Depression	37	33.9
Mild Depression	25	22.9
Moderate Depression	39	35.8
Severe Depression	8	7.3
Suicidal Ideation Score	5.00±4.09	4.00 (0.00 — 17.00)
Friend Social Support Score	2.59±1.85	2.00 (1.00 — 7.00)
Special Social Support Score	4.35±2.36	5.00 (1.00 — 7.00)
Family Social Support Score	5.60±1.80	6.50 (1.00 — 7.00)
Total Social Support Score	4.18±1.51	4.25 (1.00 — 7.00)

SD: Standard deviation, n= number of patients

Table 3. Relationship between scale scores and suicidal ideation score

	Suicidal Ideation Score	
	r	p
Friend Social Support Score	0.012	0.902
Special Social Support Score	-0.165	0.087
Family Social Support Score	-0.231	0.016
Total Social Support Score	-0.173	0.072

r: Pearson correlation coefficient

A statistically significant difference was obtained in the mean suicidal ideation score when the score was separately determined for the four depression groups (no, mild, moderate and severe, $p < 0.001$). The mean suicidal ideation score was 2.22 in the group assigned as “no depression” and 10.13 in the group assigned as “severe depression” (Table 4).

Table 4. Comparison of suicidal ideation score in patients separated to depression groups

	Mean ± SD	Suicidal Ideation Score		Test	p*
		Median (min. - max.)			
No Depression	2.22±2.45	1.00 (0.00 - 9.00)		19.46	<0.001
Mild Depression	4.64±3.78	3.00 (0.00 - 15.00)			
Moderate Depression	6.82±3.60	7.00 (0.00 - 15.00)			
Severe Depression	10.13±4.19	10.50 (4.00 - 17.00)			

SD: Standard deviation, One-Way Variance Analysis

The independent variables that can affect the suicidal ideation score were analyzed in a linear regression model (Table 5, $F=4.116$, $p < 0.001$). Suicidal ideation was 2.512 units higher ($p=0.005$) in patients with

mild depression, 3.621 units higher ($p < 0.001$) in patients with moderate depression and 7.867 units higher ($p < 0.001$) in patients with severe depression compared to patients without depression. Suicidal ideation was 3.627 units lower in patients who participated in the full duration of their military service compared to patients who were exempt from military service ($p = 0.005$). Suicidal ideation was also 1.836 units higher in patients who had a history of attempted suicide compared to patients who did not ($p = 0.031$). Other variables did not have a statistically significant effect ($p > 0.050$).

Table 5. Linear regression analysis of independent variables affecting suicidal ideation score

	β_1 (%95 CI)	S.E	β_2	p	r1	r2
Constant	6.311 (1.541 – 11.08)	2.397		0.010		
Friend Social Support Score	0.336 (-0.073 – 0.745)	0.206	0.152	0.106	0.012	0.180
Special Social Support Score	0.143 (-0.221 – 0.507)	0.183	0.082	0.438	0.165	0.087
Family Social Support Score	-0.247 (-0.687 – 0.194)	0.221	0.109	0.269	-0.231	-0.124
Depression (Reference: No Depression)						
Mild Depression	2.512 (0.784 – 4.239)	0.868	0.260	0.005	-0.048	0.308
Moderate Depression	3.621 (2.069 – 5.173)	0.780	0.427	<0.001	0.334	0.461
Severe Depression	7.867 (5.066 – 10.667)	1.407	0.504	<0.001	0.355	0.530
Probation (Reference: No)	-0.696 (-2.246 – 0.855)	0.779	0.079	0.375	-0.025	-0.099
Incarceration (Reference: No)	-1.25 (-2.761 – 0.261)	0.759	0.150	0.104	-0.009	-0.181
Military Service (Reference: Full)	-3.627 (-6.113 – -1.141)	1.249	0.345	0.005	-0.338	-0.309
Heroin Use (Reference: No)	1.14 (-0.381 – 2.661)	0.764	0.135	0.140	0.066	0.164
Cannabis Use (Reference: No)	1.331 (-0.307 – 2.97)	0.823	0.159	0.110	0.102	0.178
Methamphetamine Use (Reference: No)	-0.624 (-2.264 – 1.016)	0.824	0.074	0.451	0.037	-0.084
Alcohol Use (Reference: No)	0.2 (-3.041 – 3.442)	1.629	0.010	0.902	0.140	0.014
Suicide Attempt (Reference: No)	1.836 (0.172 – 3.5)	0.836	0.206	0.031	0.322	0.238
Socioeconomic Status (Reference: More than Minimum Wage)	0.179 (-1.22 – 1.578)	0.703	0.021	0.800	0.088	0.028

F=4.116 $p < 0.001$, $R^2=0.590$, adjusted $R^2=0.447$, β_1 : Unstandardized beta coefficient, β_2 : Standardized beta coefficient, r1: Zero-order correlation coefficient, r2=Partial correlation coefficient; SE: Standard error

Discussion

One of the primary findings of the current study is that social support from the family and the degree of depression in the patient can have a significant effect on suicidal ideation in inpatients treated for SUD. Several studies have shown that social support is one of the factors associated with suicide risk during SUD treatment. Social support, or "feeling cared for, loved, respected and part of a network of intimate relationships" (18) has been documented as a variable associated with suicide risk and resilience (19). Patients who apply for treatment for SUD may also experience problems in their interpersonal relationships due to substance abuse, which especially results in low social support in this patient population (20). Inadequate perception of social support in SUD patients can lead to an exacerbation in the correlation between depression and suicidal ideation (21), which may be of concern especially in the inpatient treatment process. It is well accepted that inpatient psychiatric patients are more restricted in their contact with the outside world than outpatients. Similarly, low perceived social support could predict mid-treatment suicide attempts in an adult patient population from China who were registered for involuntary inpatient SUD treatment (22).

We observed in the current study that as the degree of depression increased, the scores on the suicidal ideation scale also increased. Depression and substance abuse are frequently observed together in clinical samples (23, 24). Mood disorders and depressive symptoms are known to increase the risk of suicidal behavior in individuals with SUD (25, 26). A recent community health survey in Canada, in which 25,113

individuals were screened, indicated that the strongest and most consistent risk factor for suicidal ideation was the comorbidity of SUD and major depressive episode, and this risk was much higher than the risk associated with a diagnosis of major depressive episode alone (27). Several other studies have also shown that suicidal ideation among individuals with major depression and comorbid SUD tends to occur with more severe mood symptoms, higher risk of suicide attempts, worse functioning, more psychiatric comorbidities and increased mortality (28).

Another interesting finding of the current study was that patients who did not complete their military service or were reported unfit for the army, along with the patients who had a history of suicide attempt scored higher on the suicidal ideation scale. A study carried out in the USA showed that approximately 50% of patients hospitalized due to a mental disorder left the military service within 6 months while only 12% of those hospitalized due to any of the other 15 main disease categories left military service. Additionally, the rate of leaving the military service within 6 months after hospitalization due to a mental disorder was between 11% to 45% (29). Numerous studies on psychopathology in the military service have revealed that mood, anxiety and SUD are associated with and predict suicidal ideation (30, 31). Suicide risk is also found to vary among those in military service and factors such as previous mental health problems, combat-related experiences, personal stressors or substance use disorder may contribute to the risk and affect an individual's vulnerability to suicidal thoughts or actions (32). We suggest that the deficiencies in emotional and behavioral functioning and/or underlying psychiatric conditions in the patients who were ineligible for military service may have increased their suicidal thoughts.

A meta-analysis using 365 studies on suicide carried out in the last 50 years in which risk factors for suicidal thoughts and behaviors were examined indicated that previous suicidal thoughts and behaviors were important risk factors (33). Moreover, the strongest correlation for suicidal behavior was reported to be with a personal history of suicide (34, 35). We found that past suicidal behaviors could positively affect the current suicidal thoughts of the participants in our study, supporting previous data.

The study findings need to be considered in light of a number of methodological limitations. First, we did not have the option of including female patients as only male patients were admitted to the inpatient ward from where we collected the data. The sample size was relatively small, narrowly focused and restricted to a single-center, limiting its potential applicability to other populations. Second, we used a self-report scale for depressive symptoms instead of a more comprehensive diagnostic interview. Finally, we did not include a control group without any diagnosis of SUD, which precluded any comparative analysis of the effects of social support and depression on suicidal ideation.

In conclusion, despite all these limitations, clinicians should not ignore the fact that approximately 90% of unplanned first suicide attempts and 60% of planned first suicide attempts occur within 1 year after the onset of suicidal ideation (28). In particular, individuals with inadequate social support, depressive symptoms, those who are exempt or unable to carry out military service and those who have attempted suicide before should be investigated in depth for suicidal ideation.

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Yazar Katkıları: Tüm yazarlar ICMJE'in bir yazarda bulunmasını önerdiği tüm ölçütleri karşılamışlardır
Etik Onay: Bu çalışma için ilgili Etik Kuruldan etik onay alınmıştır.
Hakem Değerlendirmesi: Dış bağımsız.
Çıkar Çatışması: Yazarlar çıkar çatışması olmadığını beyan etmişlerdir.
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