

The Relation Between Typed Personality Features And Social Anxiety Among Individuals With Alcohol And Substance Use Disorders

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Abstract

Introduction: Type D personality is characterised by the presence of social inhibition (SI) and negative affectivity (NA). Individuals high in social inhibition (SI) often experience feelings of discomfort, anxiety, stress, and lack of confidence. In contrast, individuals high in negative affectivity (NA) tend to experience unpleasant feelings. The aim of the present study was to determine the relationship between type D personality traits and social anxiety in individuals with alcohol and drug use disorders.

Materials and Methods: A cross-sectional was conducted with 140 individuals who were admitted to the XXX Health Sciences University Training and Research Hospital at the unit of Alcohol and Drug Addiction Treatment and Research Center between July and September in 2023. The Type D personality (DS-14) and Liebowitz Social Anxiety Scale (LSAS) were applied to participants. A linear regression model is used to test the predictive effect of D Type Personality on social anxiety.

Results: It was seen that there was a positive and significant relationship between social anxiety and social inhibition among participants. Similarly, a positive and significant relationship was seen between social anxiety and NA. The linear regression model was revealed that SI was seen significant predictors in social anxiety, but NA was not seen as a predictor in this relation.

Conclusion: In conclusion, the relationship between Type D personality features and social anxiety among individuals with substance use disorders is a complex and multifaceted issue influenced by various psychological, emotional, and personality factors.

Key words: Type D personality; social anxiety; substance use disorders.

Introduction

Drug use is increasing worldwide. In 2021, one in 17 drug users between the ages of 15 and 64 will use drugs. Cannabis remains the most commonly consumed substance with 219 million people. Amphetamines, cocaine and ecstasy are also widely used. Alcohol consumption is also high: 32.5% of the world's population were drinkers in 2016. The average consumption per person is expected to reach 7.6 liters by 2030 (1). Substance use disorders are associated with various risks, including mental health problems, suicide, and violence, road accidents, fatal overdoses, and unsafe injecting practices (2). Given the negative consequences of drug use, it is perhaps not surprising that progress has been made in identifying the individual and environmental factors that contribute to drug use. Among the factors contributing to drug use, personality traits may play an important role in drug use (3). The self-denial hypothesis states that drug use is an

expression of a personality disorder or inadequacy, while the problem behavior theory states that drug use is merely a symptom of a problematic pattern of behavior that leads to personal challenges (4-6). Type D personality traits include social inhibition (SI) and negative affectivity (NA), with high SI leading to discomfort, anxiety, stress and lack of self-confidence, while high NA leads to unpleasant feelings (6). People with type D personality have lower levels of perceived social support (7). The presence of a Type D personality and its SI component is likely to be associated with increased levels of social anxiety. In adults, SI has already been associated with shyness, social timidity, social threat avoidance and low self-esteem (8). In 2019, 301 million people were affected by anxiety disorders, 58 millions of whom were children and adolescents (9). Social anxiety is a common form of anxiety disorder. It causes fear or anxiety in situations where those affected are

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exposed to scrutiny, evaluation, or judgement. This can be the case when speaking in public, at appointments, job interviews, discussions in class and in shops. Routine activities such as eating in public or using communal bathrooms can also trigger anxiety due to concerns about humiliation, scrutiny, and marginalization (7-8). Studies have shown that individuals with type D personality traits, characterised by NA and SI, may be more prone to developing addictive behaviours due to underlying psychological factors (10). In addition, individuals with marked social anxiety may exhibit coping motives for alcohol use that are associated with heavier drinking, particularly in those with low depressive symptoms (11). Individuals with high social anxiety and symptoms of alcohol use disorder may exhibit cognitive distortions that contribute to the maintenance of problematic drinking behaviour (12). In addition, socially anxious individuals may drink alone, which can lead to alcohol-related impairment (13). In summary, the synthesis of these studies suggests that type D personality traits, social anxiety and alcohol dependence are linked, with psychological factors influencing the development and maintenance of addictive behaviour. Understanding these relationships is critical to the development of targeted interventions that address the complex interplay of personality traits, social anxiety and alcohol use disorder. The study found that Type D people had elevated levels of both social and general anxiety. The Type D personality feature of SI had the highest correlation with social interaction anxiety, whereas NA shown a substantial association with general anxiety (7-8). In the light of the findings obtained in another study aiming to evaluate the depression-anxiety scores, type D personality features and alexithymia levels of patients diagnosed with alcohol/substance use disorder, it was determined that; they were found to be more anxious-depressive and also have type D personality features (11). As a result of the literature review, in individuals with alcohol and substance disorders the relationship between type D personality features and social anxiety is generally examined. In studies examining the relationship between type D personality features and social anxiety in individuals with alcohol and substance disorders, it has been revealed that although there are positive relationships, it is insufficient. The aim of the current study was that to determine the relation between type D personality features and social anxiety among individuals with alcohol and substance use disorders. We believe that this study has the

potential to advance our understanding of the complex interplay between social anxiety, personality features, and substance use behaviors, providing valuable insights for developing targeted interventions and treatment strategies for individuals with co-occurring social anxiety and alcohol/substance use disorders. Toward that end, this study sought to answer three research questions:

Research question 1: Are type D personality features seen in individuals with substance use disorders?

Research question 2: What is the social anxiety level of individuals with substance use disorders?

Research question 3: What are the relations between social anxiety and D Type Personality features among individuals with substance use disorders?

Materials and Methods

The sample and data collection: A cross-sectional study was conducted at XXX Health Sciences University Training and Research Hospital's Alcohol and Drug Addiction Treatment and Research Center between July and September in 2023. To be eligible for the study, the participants needed to meet the following inclusion criteria: (a) be at least 18 years of age, (b) continuing treatment in the Alcohol and Drug Addiction Treatment and Research Center during data collection process and (c) having no problems in communication. The exclusion criteria for the study; (a) being under 18 years old, (b) having comorbid mental health disorders. Furthermore, all participants were informed about the study's purpose and asked to complete data collection tools through self-report. Participants signed a written informed consent form after the study procedure was explained to them. Participants were told that the survey was about socio-demographic characteristics, Type D personality scale and Liebowitz Social Anxiety Scale; their responses would remain anonymous, and it would take 15-20 min to complete the survey. During administration of the questionnaire, the voluntary nature of participation in the study was emphasized, and the participants were told that it was important for them to be frank and honest in their responses. Additional time was given for participants to ask questions and share information related to the subject. The sample of the study consisted of 140 participants who met inclusion criteria which is mentioned above and completed the survey completely. G*Power was used to estimate the required sample size. A priori analysis was executed to compute the sample size

for linear multiple regression. The input parameters of a medium effect size of Cohen's $d = 0.15$ with a $p = 0.05$ and 80% power revealed a recommended sample size of 107. Post-hoc power analysis showed that the effect size is 98% with the input parameters of a medium effect size of Cohen's $d = 0.15$ with a $p = 0.05$ and total sample size $N=140$ and two predictors.

Measures: The data were collected with Socio-Demographic Form, Type D personality scale and Liebowitz Social Anxiety Scale (LSAS).

Socio-demographic form: Included the questions about gender, age, marital status, number of siblings, children, living environment, education, profession, income, substance use, duration, frequency, age of first use, method of obtaining, reason for starting, number of admissions to Alcohol and Drug Addiction Treatment and Research Center unit, family-environment history of substance use, and history of domestic violence.

Type D personality scale: The Type D Personality Scale is a standardized assessment tool used to evaluate Type D personality, such as negative affectivity and social inhibition (6). DS14 Developed by Denollet in 2005, its validity and reliability in Turkish hemodialysis patients were made by Alçelik in 2012 (14). A 14-item scale of five-point Likert type, each consisting of 7 items, based on the subjective evaluation of individuals, measures negative affectivity (2,4,5,7,9,12,13) and social inhibition (1,3,6,8,10,11). ,14) and items 1 and 3 are reverse coded. Each statement is scored as 0-4 points as 'false, partially false, undecided, partially true, true'. Subscales can take values between 0-28. A cut-off of 10 on both scales is used to classify subjects as Type D ($NA \geq 10$ and $SI \geq 10$). Emons et al. (14) have found that the items of the DS-14 had the highest measurement precision around this cut-off of 10. According to the Turkish validity and reliability study, the Cronbach's alpha coefficient of the scale was $\alpha=0.82$ for NA, $\alpha=0.81$ for SI; test-retest results are $r=0.84/0.78$ (14).

Liebowitz social anxiety scale (LSAS): Liebowitz Social Anxiety Scale first developed by Liebowitz in 1987 to evaluate the social relations and performance situations in which individuals show fear-anxiety and/or avoidance behavior (15). Its Turkish conformation was made by Tükel et al. in 1998, and its validity and reliability was evaluated by Dilbaz and Guz in 2001 (16). It consists of a total of 24 items that can be applied to adolescents and adults, and two sub-dimensions, 11 of which are social relations and 13 are performance. The questions consist of a 4-

point Likert type, ranging from 1 to 4, considering the severity of the individual's fear and avoidance in the last week. The total score is obtained by summing the fear and avoidance scores. The scores assigned to these questions are assessed as follows: <40 no discomfort, 40-55- mild social discomfort, 55-65- moderate social discomfort, 65-80- marked social phobia, 80-95- severe social phobia and 95+ very severe social phobia. In the validity and reliability study of the scale, Cronbach's alpha was found to be .96 (16).

Ethical approval: All participants provided written permission as required by the Declaration of Helsinki. Ethics Committee permission was obtained from Non-Interventional Clinical Research Ethics Committee of Van Yuzuncu Yil University (Approval Date:12/05/2023-Number:2023/05-07). Institutional approval was received from Van Provincial Directorate of Health and SBU Van Education and Research Hospital (Approval Date:13/07/2023; Number: E:50817530-771-219743089).

Statistical analyses: The study used descriptive statistics for categorical variables, examining normality distributions with Shapiro-Wilk's or Kolmogorov Smirnov tests. If normality was not met, variables were compared using the Independent T-test. Chi-square or Fisher Exact tests were used to determine relationships between categorical variables. The statistical significance level was set at 5%, and calculations were performed using the SPSS (ver.27) statistics package application.

Results

Socio-Demographic characteristics of participants presented in Table 1. 30% ($n = 42$) of participants were ages between 21-30 and 99.3% ($n = 139$) of participants were male. 60.7% ($n = 85$) of participants were married and 39.3% ($n = 55$) were single. 55.7% ($n=78$) of participants were living with their wife and children, 31.4% ($n= 44$) were living with their parents. 51.4 % ($n=72$) of the participants were primary school graduates, 30.7% ($n=43$) were high school graduates and only 6.4% ($n=9$) were university graduates. 41.4% ($n=58$) of participants were unemployed, 17.9% ($n=25$) were self-employed and 10.0% ($n=14$) were farmer. 96 of 140 participants' income level was less than their expenses. 25 of 140 participants were using alcohol and duration were 17.56 ± 13.02 years. 115 of participants use substance. Heroin was the first ($n:97, 43.7\%$), methamphetamine was the second ($n:42, 18.9\%$) and marijuana was the third ($n:33, 14.9\%$) most

Table 1: Socio-Demographic Characteristics of Participants

Age	N	%
Under 20	4	2.9
21-30	42	30.0
31-40	34	24.3
41-50	25	17.9
51-60	26	18.6
60 above	9	6.4
Gender		
Female	1	0.7
Male	139	99.3
Marital status		
Married	85	60.7
Single (divorced)	55	39.3
Who do you live with?		
Alone	12	8.6
With his parents	44	31.4
With his wife	3	2.1
With his wife and children	78	55.7
Other	3	2.1
Educational Status		
Literate	16	11.4
Primary School	72	51.4
High school	43	30.7
University	9	6.4
Profession		
Unemployed	58	41.4
Temporary Worker	12	8.6
Self-Employed	25	17.9
Farmer	14	10.0
Income status		
Income less than expenses	96	68.6
Income equal to expenses	39	27.9
Alcohol use		
Yes	25	17.9
No	115	82.1
Substance Used		
Heroin	97	43.7
Methamphetamine	42	18.9
Marijuana	33	14.9
Age of First Use of the Substance		
20 and under	72	51.4
21-30	45	32.1
First Way to Supplied the Substance		
Through friends	105	75.0
Through family members/relatives	19	13.6
Reason(s) for starting substance		
Curiosity	58	34.7
Friend's Insistence	47	28.1
Emulation	29	17.4
Prison History		
Yes	54	38.6
No	86	61.4
History Of Domestic Violence		
Never	115	82.1
Rare	8	5.7
Sometimes	7	5.0
	Mean	(Min-Max)
Duration of alcohol use (Year)	17.56 ±13.02	(1-50)
Duration of substance use (Year)	11.65±8.70	(1-40)

used substances among participants and substance using duration was 11.65 ± 8.70 years. 72 of participants had first experience of substance use at 20 and under, 45 had between 21-30 ages. 105 of participants had had substance through their friends, 19 through their family members. The reason of starting substance; Curiosity was first, friend's insistence was second and emulation was third most ones among the participants. 56 of participants had experience of prison. 115 of participants expressed that they never had, 8 of

participants expressed rare and 7 of participants expressed that they had domestic violence sometimes. (See in Table 1). The mean score of Liebowitz Social Anxiety Scale were 43.85 ± 12.14 , the social avoidance subscale' mean score was 45.3 ± 13.99 and the social anxiety subscale' was 89.15 ± 25.02 . The mean score of the SI subscale was 12.87 ± 7.41 and the mean scores of NA subscale was 16.75 ± 8.63 (See in Table 2).

Table 2: The mean score of the Social Anxiety Scale and Type D personality Scale of participants

	Minimum	Maximum	Mean	Std. Deviation
Social Anxiety Scale (total)	24.00	79.00	43.85	12.14
Social avoidance	24.00	88.00	45.30	13.99
Social anxiety	48.00	159.00	89.15	25.02
Type D Personality Scale				
Negative affectivity	.00	28.00	16.75	8.63
Social inhibition	.00	28.00	12.87	7.41

Table 3: The frequency and percentage of Type D Personality Scale

	n	%
Social Inhibition (SI>10)	93	66.4
Negative affectivity (NA>10)	47	33.6
Type D Personality (both SI>10; NA>10)	86	61.4

Table 4: The level of social anxiety among participants

Levels of social anxiety	Social anxiety	
	Frequency	Percent
Mild social discomfort	6	4.3
Moderate social discomfort	19	13.6
Marked social phobia	36	25.7
Severe social phobia	31	22.1
Very severe social phobia	48	34.3
Total	140	100.0

The frequency and percentage of Type D Personality Scale presented in Table 3. 86 of 140 (61.4%) participants showed type D personality. 6 of (4.3%) participants have mild, 19 (13.6%) of participants have moderate, 36 (25.7%) of participants have obvious level, 31 (22.1%) of participants have severe and 48 (34.3%) of participants have extreme level of social anxiety (See in Table 4). A strong positive and significant relationship was seen between anxiety and social

avoidance ($r=0.832$; $p<0.05$). Furthermore, a significant positive relation was seen between social anxiety level and NA which is a component of type D personality ($r=0.318$; $p<.05$) and a significant positive relationship was seen between anxiety and SI which is the second component of type D personality ($r= 0.392$; $p<.05$). Moreover, a strong positive and significant relationship was seen between social avoidance and social anxiety level ($r=0.963$; $p<.05$)

Table 5: Correlations between Type D personality and Social Anxiety

	1	2	3	4	5
1-Social Anxiety Total	1	.832**	.950**	.318**	.392**
2- Social Avoidance		1	.963**	.206*	.327**
3- Social Anxiety			1	.269**	.373**
4- Negative Affectivity				1	.705**
5- Social Inhibition					1

*p<.05; **p<0.1

Table 6: Multiple Linear Regression Analyses

Variables	B	Standardized Coefficients Beta	β	t	p
Constant	72.711	4.449		16.341	<.001
D Type Personality					
Social inhibition	.377	.377	3.256	.001	.001
Negative affectivity	.324	.324	.117	.907	.907
R=.37, R ² =.13, Δ R ² = .12					

*p<.05

(See in Table 5). Table 6 shows the results of the D Type Personality Scale in social anxiety linear regression. D Type Personality is a significant predictor of social anxiety among people with substance use disorders (R²=.12, F= 11.078, p<.001). It can be stated that 12 % of the variance regarding social anxiety among people with substance use disorders is explained by participants' D Type Personality Score. In sub-dimension SI was seen significant predictors in social anxiety, but NA was not seen as a predictor in this relation. As SI scores increase, social anxiety score increase.

Discussion

This study is a one of the rare studies that conducted in this field and especially in this region at the national level. A positive and significant relationship between social anxiety and SI was seen in this study conducted for the purpose of to examine the relationship between type D personality features and social anxiety in individuals with substance use disorders. Similarly, a positive and significant relationship was seen between social anxiety and NA. The linear regression model was revealed that SI was seen significant predictors in social anxiety, but NA was not seen as a predictor in this relation. Van is a significant city in the region due to its geographic location, which shares a border with the Islamic Republic of Iran and is a crucial point

on the Balkan drug trafficking route. This results in greater substance accessibility and higher substance use in this province (17). From this side it is also makes this study more important to find the Type D Personality features and social anxiety in alcohol and substance addicted individuals in this city. In this study most nearly of addicted individuals were young adults (21-30 years). At the same time more than half of addicted individuals who took part in this study had their first experience of alcohol and substance use at young age (20 and under). In addition, heroin was the most used substance among participants in this study. As per the Substance Abuse and Mental Health Services Administration (SAMHSA), the marijuana was the most common illegal substance among adults aged 12 or older, with a usage rate of 22.0%, involving 61.9 million people in the previous year. Young adults aged 18 to 25 had the highest usage rate at 38.2%, involving 13.3 million individuals. In the last year, 3.2% of the population, equivalent to 8.9 million individuals, engaged in the improper use of opioids, including heroin or prescription pain medicines (18). It is thought that the difference in the study results is due to the fact that the study was conducted at an Alcohol and Drug Addiction Treatment and Research Center and that individuals with heroin addiction seek treatment more often. According to the Türkiye Drugs and Drug Addiction Monitoring Center Branch Directorate, it was observed that the most commonly used substance

was marijuana, but individuals with heroin addictions applied more frequently for treatment (19). In the current study, nearly almost all participants were male and only one participant was female. In a study was conducted in Spain, showed that there are no gender differences in the risks of using drugs and drug addiction, but there were differences in terms of nationality for drug addiction (20). In contrast, in our study there is a very large difference between genders in the term of alcohol and substance usage. We attribute this difference to the socio-cultural characteristics of the nationality that living in this region. In this study; there was a positive and significant relationship between social anxiety and NA among individuals with substance use disorders. The relationship between social anxiety and negative affect (NA) among individuals with substance use disorders has been extensively studied. Research has consistently shown that social anxiety is positively associated with using substances, such as cannabis, to cope with negative affect. This coping mechanism has been found to mediate the relationship between social anxiety and substance-related problems (21). Moreover, individuals with heightened social anxiety may experience more severe withdrawal symptoms and negative affect during cessation attempts, indicating a clear link between social anxiety and substance withdrawal (22). Furthermore, studies have highlighted the co-occurrence of social anxiety with substance use, particularly alcohol use disorders (23). Social anxiety has been identified as positively correlated with using substances, like cannabis, to manage both negative affect and positive affect in social situations (24). Additionally, research has suggested that social anxiety could predispose individuals to alcohol and substance addiction, indicating a potential vulnerability factor (7-8). In conclusion, the existing body of research strongly supports the significant relationship between social anxiety and negative affect among individuals with substance use disorders. Social anxiety plays a crucial role in substance use behaviors, coping mechanisms, and withdrawal experiences, underscoring the importance of addressing social anxiety within the context of substance use treatment. Secondly, a positive and significant relationship was seen between social anxiety and SI. The current study's results align with those of a previous study, indicating that individuals with Type D personality report higher levels of social anxiety (13). Research has shown that individuals with social anxiety disorder may be at a heightened risk for developing substance use disorders (21). Moreover, studies have

indicated a positive and significant relationship between social anxiety symptoms and substance use problems, with coping motives mediating this association (25). Behavioral inhibition has been identified as a risk factor for social phobia, suggesting a link between inhibition and the development of social anxiety (26). Additionally, anxiety disorders, including social anxiety disorder, have been seen to predict the age at first substance use and the progression to substance use problems among boys (27). Consistent with the literature, the positive relationship between social anxiety and SI in individuals with alcohol and substance use disorders suggests the self-medication hypothesis in these individuals. In addition, the total number of participants in this study showed social anxiety ranging from mild to extreme level. In a study has indicated that alcohol use occurs more commonly among individuals with social anxiety (28). In another recent study in psychiatry has shown that anxiety disorders and substance use disorders occur together at higher rates than expected (29-30).

Limitations and future directions: Our study has several limitations. First, this study is a cross-sectional study, for this reason; the results obtained from it cannot be generalized to all individuals who are addicted to alcohol and substances in Van City. Therefore, we see a longitudinal study as a solution to this limitation. Second, the answers from individuals who participated to this study based on self-report data, so the answers may include social desirability. This is also seen as another limitation in this study by us. We link this social desirability to the stigma that exists in the population of this region towards people who are addicted to drugs. The lack of a control group in the study is another limitation. Future case-control studies will provide a comprehensive understanding of social anxiety and type D personality features in substance use disorders. Despite limitations, the study adds to the existing literature by examining specific traits of Type D personality, such as social inhibition, and their correlation with social anxiety among individuals with alcohol and substance use disorders. This focused approach enables a nuanced analysis of how particular personality characteristics may worsen social anxiety symptoms in the context of substance use disorders.

Conclusion

In this study it was seen, a significant positive relationship between social anxiety and type D personality features among people with alcohol

and substance use disorders. All participants, particularly young adults, displayed social anxiety. The findings may be useful in developing treatment programs for individuals with addiction and social anxiety based on personality features. The study's findings could help inform treatment programs for individuals with addiction and social anxiety.

Ethics approval statement: Permission was obtained from the Non-Interventional Clinical Research Ethics Committee of Van Yuzuncu Yil University (Approval Date:12/05/2023-Number:2023/05-07). Institutional approval was obtained from Van Provincial Directorate of Health and SBU Van Education and Research Hospital (Approval Date:13/07/2023; Number: E:50817530-771-219743089).

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Availability of data and materials: The authors confirm that the data supporting the findings of this study are available within the articles.

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