THE RELATIONSHIP BETWEEN ADDICTION SEVERITY AND HEALTH LITERACY IN SUBSTANCE USE DISORDER CASES

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34

ABSTRACT

Aim: The aim of this study was to examine the relationship between addiction severity and health literacy in cases of substance use disorder.

Methods: A total of 60 cases with substance use disorders were evaluated. The severity of substance addiction was determined using the Addiction Profile Index Short Form (API-SF). Thus, 30 participants diagnosed with substance use disorder and showing symptoms of severe addiction and 30 participants who did not show symptoms of severe addiction were evaluated. The Demographic Information Form and the Health Literacy Scale were administered to all participants.

Results: All cases were male and the average age was 25.87±4.88 years. Rates of polysubstance use disorder (X^2 =4.34, p=0.037), methamphetamine use disorder (X^2=6.67, p=0.010), cocaine use disorder (X^2 =4.29, p=0.038), and cannabinoid use disorder (X^2 = 6.67, p=0.010) were found to differ between severely and mildly dependent cases. No significant relationship (r=-0.29, p=0.118) was found between the HLS-SF and API-SF scores in the severely addicted cases. A significant negative relationship between the scores (r=-0.42, p=0.021) was present in the cases with mildly levels of addiction. Multivariate Binary Logistic Regression Analysis revealed that an increase in HLS-SF scores reduced the risk of severe addiction at a statistically significant level (OR = 0.94, p = 0.043).

Conclusions: Increasing health literacy may be useful in reducing severe substance use in addicted individuals.

Keywords: Substance use disorder, health literacy, severe addiction

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Cite this article as: Budak, E. & Turan, C. (2023). The Relationship Between Addiction Severity and Health Literacy in Substance Use Disorder Cases. European Health Literacy Journal 3(4), 34-41.

Introduction

Substance use disorders are one of the important mental disorders that negatively affect people's mental and physical characteristics [1]. A large population study has reported that more than 1 in 10 adults (27.5 million) have a substance use problem in the United States [2]. In a large population study conducted in Turkey, the prevalence figures for using a single substance and using more than one substance at least once in life were determined as 4.5% and 2.6%, respectively [3]. Environmental characteristics such as age, gender, and educational status have been reported to be effective in substance use disorder, while severe substance addiction has genetic roots [4].

Health literacy is a concept characterized by accessing general health-related information, evaluating the advantages and disadvantages of treatments, knowing what to do in an emergency, understanding what health service you need, and using various activities that can be good for mental and physical health [5]. In a study conducted in the general population in Turkey, it was found that the health literacy level was inadequate in 25.9% of the participants, problematic/limited in 41.4%, adequate in 23.6%, and excellent in 9.1% [6]. A study conducted on adolescents in Turkey has reported that the participants had a medium level of health literacy and that the health literacy levels of the individuals were related to the income level and the education level of the parents [7].

Health literacy has been found to be lower in people with mental disorders compared to the general population, and people with mental disorders also have difficulty accessing, evaluating, and applying health information [8]. A studyfound that 20.4% of cases receiving psychological treatment had low and 61.3% had medium levels of health literacy, and health literacy scores were lower in people with mental problems when compared to other disease groups [9]. Health literacy is low in cases diagnosed with severe mental illness, and health literacy has great potential in preventing the risk of developing preventable chronic diseases in this group [10].

It is known that risky health behaviors are common in substance addiction, with low risk perception and high impulsivity [11]. Serious health problems such as HIV are especially common in cases with substance use disorders [12]. Studies on health literacy in cases experiencing mental illness are limited [9]. In addition, the health literacy literature is more limited regarding substance use disorder cases where risky health behaviors are common. In a systematic review study, it was concluded that health literacy in those with substance use disorder was lower than in the general population [13]. Only 13.1% of cases with substance use disorders have been found to have adequate health literacy, and the quality of life is lower and psychological distress is higher in addicts with low health literacy [14].

Increasing health literacy may contribute to improving health outcomes and reducing

behaviors related to high-risk substance use in cases receiving addiction treatment [15]. On the other hand, studies on health literacy in cases with substance use are limited, and the relationship between addiction severity and health literacy has not been adequately examined. This study aimed to examine the relationship between addiction severity and health literacy.

Methods

Cases diagnosed with substance use disorder that presented at a hospital's Alcohol and Substance Treatment Center for treatment were evaluated in the current study. Substance use disorder diagnosis was examined via the DMS-V. All participants were first informed about the study. Signed consent was obtained from the participants who volunteered to participate, and those who were at least primary school graduates and over the age of 18 years were evaluated. Subjects with intellectual disabilities, acute psychotic or bipolar attacks, under the influence of alcohol or substances, or with severe neurological disorders were excluded from the study. The research was conducted within the framework of the Declaration of Helsinki. Ethics committee approval (2011-KAEK-25 2023/12-21) was obtained.

Assessment and Tools

Psychiatric diagnoses were determined through face-to-face interviews. TheDemographic Information Form was administered by the clinicians. All participants were evaluated using self-report scales, the Addiction Profile Index Short Form, and the Health Literacy Scale-Short Form.

Demographic Information Form:This form was created by the researchers. The Demographic Information Form includes questions on the age, educational status, economic status, and employment status.

Addiction Profile Index Short Form (API-SF): API-SF is a measurement tool that evaluates alcohol and substance use disorders, as well as addiction severity [16]. API-SF was developed in Turkish. The measurement tool consists of 22 questions, and high scores on the API-SF indicate an increase in addiction symptoms. Cronbach's α value of API-SF was found to be 0.89. A correlation of 0.96 was shown between the API-SF and the API scale. In API-SF, a general addiction severity is calculated by adding the scale item scores and dividing by the number of items. A score of three or more on the API-SF was considered to define severe addiction.

Health Literacy Scale-Short Form (HLS-SF):HLS-SF was developed to measure health literacy in individuals [5]. HLS-SF is a Likert-type measurement tool. There are 12 items in the measurement tool, and the scale items are scored between one and four. High scores on the HLS-SF indicate an increase in health literacy.The Turkish validity study of the scale was conducted by Yılmaz and Eskici [17]. In this study, the Cronbach α value of HLS-SF was found to be 0.85.

Statistics

The demographic and clinical characteristics of cases with substance use disorders were evaluated with descriptive statistical analyses such as mean, standard deviation, and percentage. Proportional data related to education, marital status, and substance use characteristics between the cases showing mild and severe levels of addiction were compared with the Chi-Square Test. Age and HLS-SF scores were compared between the cases with mild and severe levels of addiction with the Independent Groups t test. The relationship between API-SF and HLS-SF scores was examined with Pearson Correlation Analysis. Whether HLS-SF increased the severity of addiction was evaluated by Logistic Regression Analysis. Variables related to addiction severity were examined with Logistic Regression Analysis. For all analyses, the significance level was accepted as $p<0.05$. The suitability of the data for normal distribution was examined with kurtosis and skewness coefficients (±1.5). IBM SPSS 26.0 program was used to analyze the data.

Results

All cases were male and the average age was 25.87±4.88 years. According to the Independent Groups t test, the average ages of the cases with severe and mild levels of addiction were similar (t = 0.79, p = 0.853). The Chi-Square Test revealed that the level of education (X^2 = 0.79, p = 0.853), marriage status (X^2 = 1.18, p = 0.278), employment status (X^2 = 3.22, p = 0.359), and income status ($X2=0.16$, p=9.926) were statistically similar among cases with severe and mild levels of addiction. The rates of polysubstance use disorder (X^2=4.34, p=0.037), methamphetamine use disorder (X^2=6.67, p=0.010), and cocaine use disorder (X^2=4.29, p=0.038) were statistically significantly higher in cases with severe addiction than in cases with a low level of addiction. The cannabinoid use disorder rate was statistically significantly higher ($X2 = 6.67$, p = 0.010) in cases with low levels of addiction than in cases with high levels of addiction (Table 1).

According to the Independent Groups t test, the HLS-SF (t=-2.17, p=0.034) the average of the cases with severe addiction were found to be statistically significantly higher than the average of those with mild level addiction (Table 2).

No significant relationship (r=-0.29, p=0.118) was found between the HLS-SF and API-SF scores in cases with severe addiction. There was a significant negative relationship between the scores (r=-0.42, p=0.021) in cases with mild levels of addiction (Table 3)

Age, marital status, education level, and income level did not have a statistically significant effect on increasing the risk of severe addiction (p>0.05) (Table 4). In addition, the regression model showed that an increase in HLS-SF scores reduced the risk of severe addiction at a statistically significant level (OR = 0.94, p = 0.043).

Table 1. Comparison of demographic and clinical characteristics according to addiction severity

		Severe		Mild			
		Mean/n	SD/%	Mean/n	SD/%	Analysis	p
Age		25.67	4.56	26.07	5.25	t=-0.32	0.754
Education level	Primary school	7	23.3	10	33.3	X^2=0.79	0.853
	Middle school	3	10.0	3	10.0		
	High school	19	63.3	16	53.3		
	University	1	3.3	1	3.3		
Marital status	Single	24	80.0	27	90.0	X^2=1.18	0.278
	Married	6	20.0	3	10.0		
Occupation	Small business	3	10.0	2	6.7	X^2=3.22	0.359
	Retired	0	0.0	2	6.7		
	Employee	13	43.3	9	30.0		
	Other	14	46.7	17	56.7		
Income	Income is more than expenses	4	13.3	5	16.7	X^2=0.16	0.926
	Income equals expenses	14	46.7	14	46.7		
	Income is less than expenses	12	40.0	11	36.7		
Polysubstance UD	No	13	43.3	21	70.0	X^2=4.34	0.037
	Yes	17	56.7	9	30.0		
Methamphetamine UD	No	13	43.3	23	76.7	X^2=6.94	0.008
	Yes	17	56.7	7	23.3		
Cannabinoid UD	No	20	66.7	10	33.3	X^2=6.67	0.010
	Yes	10	33.3	20	66.7		
Ecstasy UD	No	22	73.3	24	80.0	X^2=0.37	0.542
	Yes	8	26.7	6	20.0		
Cocaine UD	No	26	86.7	30	100.0	X^2=4.29	0.038
	Yes	4	13.3	0	0.0		
Synthetic cannabinoid UD	No	26	86.7	28	93.3	X^2=0.74	0.389
	Yes	4	13.3	2	6.7		
Alcohol UD	No	21	70.0	25	83.3	X^2=1.49	0.222
	Yes	9	30.0	5	16.7		

US=Use Disorder, SD=Standard Deviation, t=Independent Groups t test, X^2=Chi-Square Test

Table 2. Comparison of HLS-SF according to addiction severity

	Severe		Mild			
	Mean	SD	Mean	SD	t	p
HLS-SF	25.67	4.56	26.07	5.25	-2.17	0.034

SD=Standard Deviation, t=Independent Groups t test.

Table 3. Correlation between HLS-SF and API-SF scores

		Severe (HLS-SF)	Mild (HLS-SF)
API-SF	r	-0.29	-0.42
	p	0.118	0.021

r =Pearson Correlation Analysis.

Table 4. The effectiveness of age, marital status, education level, income level and HLS-SF in increasing the risk of severe addiction

	β	SE	Wald	df	p	Odds Ratio	95% CI	
							LL	UL
Age	-0.002	0.06	0.00	1	0.969	1.00	0.89	1.12
Marital status[#]	-0.918	0.82	1.27	1	0.261	0.40	0.08	1.98
Education*	-0.423	0.57	0.56	1	0.454	0.66	0.22	1.98
Income[$]	-0.165	0.56	0.09	1	0.767	0.85	0.28	2.53
HLS-SF	-0.063	0.03	4.11	1	0.043	0.94	0.88	1.00

Multivariate Binary Logistic Regression Analysis, SE = Standard Error, CI=Confidence Interval, LL= Lower Limit, UL = Upper Limit. #Categorical variable; Reference = Single. *Categorical variable; Reference = High school education/above. $Categorical variable; Reference = Sufficient income.

Discussion

The aim of the study was to investigate the relationship between addiction severity and health literacy in cases with substance use disorders. The study revealed that health literacy was low in cases with severe addiction symptoms and an increase in health literacy reduced the severity of addiction.

All of the cases evaluated in the study were male, and the majority of the cases were found to have high school education or lower together with a low income level. Studies in the literature have reported that the diagnosis of substance use disorder is more common in males, and that people with substance use have a low education level and lower economic levels [4, 18, 19]. Therefore, the results of the current study are consistent with the literature. In addition, it should not be forgotten that our results consist of data obtained from a public hospital.

Methamphetamine use disorder was present in 56.7% of the cases with severe addiction while cannabinoid use disorder was present in 66.7% of the cases with mild addiction. Methamphetamine is a stimulant substance and has a high risk of addiction even with a single use [20]. Withdrawal symptoms are not observed in cannabinoid disorder [21]. For this reason, cannabinoid use disorder is a milder addiction. It is therefore somewhat expected for individuals with severe addiction to frequently use multiple substances and also abuse stimulants more frequently.

The study found that individuals with severe addiction had lower health literacy knowledge than those who did not. Health literacy is a process related to people learning and understanding health information and developing healthier behaviors in line with the information [5]. For this reason, these behaviors are likely to be less common in cases that show symptoms of severe addiction. It is known that functionality is significantly impaired in cases with severe addiction and that the ties with life gradually decrease [22]. Substance addicts who experience serious physical and mental collapse may not find

the energy to improve their health literacy. Therefore, it may be beneficial for clinicians to focus on improving health literacy in severe addicts approaching recovery.

The study found that addiction symptoms were not associated with health literacy in individuals with high levels of addiction, whereas health literacy was associated with addiction symptoms in individuals with mild addiction symptoms. Various variables may play a role in the relationship between health literacy and addiction symptoms in cases with severe addiction symptoms. People with high levels of addiction symptoms have been reported to be more impulsive and therefore have a lower tendency to avoid risky health behaviors [11]. In addition, it can be said that the relationship between addiction symptoms and health literacy is more visible in cases with low-severity addiction, and there are fewer variables that may affect health behaviors in these people. It is known that health literacy research in cases with mental problems is limited. Therefore, it may be useful to examine variables that may have an impact on the relationship between addiction symptoms and health literacy in future studies.

Demographic characteristics affect health and substance use [4]. Therefore, we tried to control the effects of the demographic characteristics on the relationship between health literacy and addiction severity in the current study. As a result, we found that an increase in health literacy could reduce the severity of addiction. It should be noted that there were a limited number of participants in the study and that the data were collected from a single hospital. However, the results obtained from the study show that increasing health literacy may be a good way to reduce the severity of addiction.

Conclusions

Health literacy is an inadequately studied subject in the field of mental health, and also in cases with substance use disorders. The results obtained from this study show that improving health literacy will be useful in reducing the severity of addiction. Therefore, investigating this issue with larger samples in future studies will contribute to the literature.

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