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Fear of COVID-19 During the Pandemic: Alcohol Craving Behavior and Compulsive Online Buying in Individuals with Potential Alcohol Use Disorder

Pandemi Döneminde COVID-19 Korkusu: Potansiyel Alkol Kullanım Bozukluğu Olan Bireylerde Alkol İsteği Davranışı ve Zorlayıcı Çevrim İçi Satın Alma

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ABSTRACT

Objective: This study aimed to examine the determinants of alcohol craving behavior and compulsive online shopping behavior among individuals with alcohol use disorder during the Coronavirus Disease 2019 (COVID-19) pandemic.

Methods: This cross-sectional and descriptive study collected data via an online survey created through Google Forms. Participants were invited through social media platforms. A total of 350 participants completed the survey; however, data from 22 participants were excluded due to missing critical variables, resulting in a final sample size of 328 participants. Data collection tools included the Sociodemographic Data Form, COVID-19 Phobia scale, Satisfaction with Life scale, Compulsive Online Shopping scale, CAGE test, and PACS.

Results: The findings revealed that psychosomatic symptoms of coronavirus phobia significantly predicted alcohol craving behavior. Additionally, compulsive online shopping behavior was significantly associated with the mood regulation sub-dimension. Women and younger individuals were found to be more prone to compulsive shopping behavior.

Conclusion: The study highlights the importance of supporting individuals with alcohol use disorder during the pandemic and improving their mood regulation strategies. Targeted interventions can help reduce maladaptive coping strategies. Further large-scale studies are needed to evaluate the long-term effects of the pandemic on addiction behaviors.

Keywords: COVID-19, alcohol craving, compulsive online shopping, mood regulation, pandemic

ÖZ

Amaç: Bu çalışma, Koronavirüs Hastalığı 2019 (COVID-19) pandemisi sırasında alkol kullanım bozukluğu olan bireylerde alkol aşerme davranışı ve zorlayıcı çevrim içi alışveriş davranışını etkileyen belirleyicileri incelemeyi amaçlamaktadır.

Yöntemler: Bu kesitsel ve tanımlayıcı çalışma, Google Formlar aracılığıyla oluşturulan çevrim içi bir anket kullanılarak yürütülmüştür. Katılımcılar sosyal medya platformları üzerinden davet edilmiştir. Toplam 350 katılımcı anketi tamamlamış ancak 22 katılımcının verileri kritik değişkenlerin eksikliği nedeniyle hariç tutulmuş ve böylece nihai örneklem büyüklüğü 328 olmuştur. Veri toplama araçları Sosyodemografik Veri Formu, COVID-19 Fobi Ölçeği, Yaşam Doyumu ölçeği, Zorlayıcı Çevrim İçi Alışveriş ölçeği, CAGE testi ve PACS'tır.

Bulgular: Bulgular, koronavirüs fobisinin psikosomatik semptomlarının alkol aşerme davranışını anlamlı şekilde yordadığını ortaya koymuştur. Ayrıca, zorlayıcı çevrim içi alışveriş davranışı, duygu düzenleme alt boyutu ile anlamlı olarak ilişkili bulunmuştur. Kadınlar ve genç bireylerin zorlayıcı alışveriş davranışına daha yatkın oldukları görülmüştür.

Sonuç: Çalışma, pandemi sırasında alkol kullanım bozukluğu olan bireylerin desteklenmesinin ve duygu düzenleme stratejilerinin geliştirilmesinin önemini vurgulamaktadır. Hedefe yönelik müdahaleler uyumsuz başa çıkma stratejilerinin azaltılmasına yardımcı olabilir. Pandeminin bağımlılık davranışları üzerindeki uzun vadeli etkilerini değerlendirmek için daha geniş ölçekli çalışmalara ihtiyaç vardır.

Anahtar Sözcükler: COVID-19, alkol isteği, kompulsif çevrim içi alışveriş, duygu düzenleme, pandemi

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INTRODUCTION

In December 2019, the Coronavirus outbreak, which began in Wuhan, China, spread worldwide, causing feelings of danger and uncertainty across the globe, with no proven specific treatment available (1). While the virus has impacted societies broadly, behavioral changes associated with the pandemic have emerged, reshaping daily life (2).

Alcohol and other psychoactive substances are often used by individuals to cope with unpleasant emotions, stress, anxiety, and other psychological difficulties (3). In this context, the consumption of alcohol and other psychoactive substances has been proposed as a self-medication practice (4). According to the Global Status Report on Alcohol published by the World Health Organization, the prevalence of alcohol dependence among individuals over the age of 15 was reported as 2.6% in 2016. Data from the Institute for Health Metrics and Evaluation indicate that the rate of alcohol use disorder in Türkiye was reported as 0.78%. The Pan American Health Organization reported an increase in the consumption of informally produced alcohol, including homemade varieties, during the pandemic.

Various studies have reported an increase in the frequency of alcohol and substance use among individuals who develop psychological problems after disasters that affect society as a whole, such as pandemics. Conversely, individuals who increase their alcohol and substance use after such disasters are also more likely to develop psychological problems (5). When studies related to alcohol misuse during crisis periods are considered, concerns about increased alcohol consumption during the Coronavirus Disease 2019 (COVID-19) pandemic also arise (6). Additionally, quarantine and social isolation measures implemented as part of pandemic precautions are predicted to lead to changes in alcohol consumption (7). A study conducted by Nielsen Company (8) found a 240% increase in online alcohol sales. In another study (9), it was reported that during the coronavirus pandemic, some participants who had previously quit alcohol started drinking again, while some regular alcohol users increased their alcohol intake. Similarly, another study (10) showed that participants who consumed alcohol heavily before the pandemic, failed to develop effective coping strategies for stress, and had poor mental health, increased their alcohol consumption during the pandemic. During the Severe Acute Respiratory Syndrome (SARS) outbreak, a study (11) reported an increase in symptoms of alcohol dependence/misuse among healthcare workers exposed to the outbreak.

Compulsive buying is a type of behavioral addiction that has increased in prevalence over the last two decades (12). Studies indicate that behavioral addictions tend to rise during periods of crisis (9,13). Although there is no universally agreed-upon definition of compulsive buying, it is characterized by preoccupation with shopping, overspending beyond one's budget, and purchasing unnecessary items (14). In the literature, depression, anxiety, or feelings of dissatisfaction with oneself are reported as risk factors for this disorder (15). Additionally, health crises such as epidemics and pandemics can serve as significant triggers for compulsive buying. It has been suggested that compulsive buying might act as a maladaptive coping strategy during the COVID-19 pandemic (16). Due to shortened store hours and prolonged closures during the pandemic, consumers have experienced increased anxiety, leading to heightened panic buying (17). E-commerce has surged during the pandemic, becoming a prominent component of economic activities (18,19). With the implementation of quarantine and social isolation measures during the pandemic, an increase in online shopping behavior has been observed (20,21).

Life satisfaction is defined as an individual's assessment of their quality of life based on their own criteria and is considered an essential component of well-being. High life satisfaction is positively associated with high self-esteem, strong social support, and better living conditions (22). In a multicenter study, an increase in distress, a decrease in social participation and individual well-being, and an overall decline in life satisfaction were reported during the coronavirus pandemic, similar to the SARS pandemic (23).

In this study, we aimed to identify the determinants affecting alcohol craving in individuals with alcohol use disorder during the COVID-19 pandemic. Additionally, the objective was to examine whether changes in purchasing behavior during the pandemic differ with respect to alcohol consumption.

Hypotheses

1. COVID-19 phobia significantly predicts alcohol craving behavior.

2. Compulsive online buying behavior is associated with mood regulation.

3. Compulsive buying behavior is more prevalent among women and younger individuals.

MATERIALS AND METHODS

This research is a cross-sectional descriptive study conducted between July and September 2020. The COVID-19 pandemic period, with lockdowns, quarantine measures, and restrictions on social life, posed significant challenges in reaching participants. In situations where accessing the target population is difficult, the snowball sampling method is known to be effective (24). Therefore, in this study, the purposive (non-probability) sampling method, specifically the snowball sampling technique, was employed. In studies utilizing non-probability sampling methods, the population is not clearly defined (25). Similarly, in our study, although the sample size was not precisely determined, the two primary groups in the sample consisted of healthcare workers from Gazi University, and their relatives.

The sample size for the study was calculated using the G*Power software package (26). A non-probability sampling method was employed, and the study was conducted with a cross-sectional and descriptive design. Individuals over the age of 18 without a diagnosis of psychotic disorders were included in the study. Using the snowball sampling method, it was planned to include 350 participants. To reach this sample size, an online survey link created via Google Forms was distributed to healthcare workers through social media. Additionally, healthcare workers who completed the survey were encouraged to share the research link with people in their networks.

After selecting the "I Agree" option on the electronic informed consent form, participants completed the survey. With approval obtained from the Gazi University Measurement and Evaluation Ethics Subcommittee, the survey link was shared between August 1, 2020, and October 1, 2020.

During this period, the survey was completed by 350 participants. Data from 22 participants were excluded from the study due to missing critical variables for the research. Finally, data from 328 participants were included in the analysis.

Scales

In the study, the sociodemographic information form, the Coronavirus-19 Phobia scale (C19P-S), the Satisfaction with Life scale (SWLS), the Compulsive Online Shopping scale (COSP), the CAGE Test, and the Penn Alcohol Craving scale (PACS) were used.

Sociodemographic Information Form

This form, created by the researchers, consists of 11 questions addressing age, gender, marital status, income level, work style, household size, psychiatric disorders, alcohol use, and online shopping behavior.

Coronavirus-19 Phobia Scale

Developed by Arpacı et al. (27), the C19P-S consists of 20 items designed to measure phobia related to the coronavirus. Participants rate each item on a 5-point Likert scale ranging from "Strongly Disagree (1)" to "Strongly Agree (5)" items 1, 5, 9, 13, 17, and 20 measure the

Psychological Sub-dimension

Items 2, 6, 10, 14, and 18 measure the somatic sub-dimension; items 3, 7, 11, 15, and 19 measure the social sub-dimension; items 4, 8, 12, and 16 measure the economic sub-dimension.

Satisfaction with Life Scale

Developed by Diener et al. (28), the SWLS consists of 5 items. The Turkish validity and reliability study was conducted by Dağlı and Baysal (29). The scale is based on a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree".

Compulsive Online Shopping Scale

Developed by Bozdağ and Alkar (29) as an adaptation of the Bergen Shopping Addiction scale for compulsive online shopping behavior. The scale consists of 28 items, rated on a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree". It includes five dimensions: Problematic behavior, mood regulation, tolerance, preoccupation, and withdrawal.

CAGE Test

Developed by Ewing (30), the CAGE test is widely used for screening alcoholism. It consists of four yes/no questions, answered directly by the participant.

Penn Alcohol Craving Scale

Developed by Flannery et al. (31), the PACS is a 5-item self-report questionnaire designed to assess craving in individuals with alcohol use disorder. It evaluates the severity of alcohol craving over the previous week, including frequency, intensity, duration, resistance, and overall craving. Each item is scored on a scale ranging from 0 to 6. The Turkish validity and reliability study was conducted by Evren et al. (32).

Ethics Committee Approval

This study was reviewed by the Gazi University Measurement and Evaluation Ethics Subcommittee and received ethical approval (references number: 91610558-604.01.02, research code: 2020-324, date: 06.06.2020).

Statistical Analysis

The study data were analyzed using the SPSS 23.0 software package. Descriptive statistics were expressed using frequency, percentage, mean, and standard deviation. The chi-square test was used to compare categorical variables between groups, and Fisher's exact test was applied when necessary. Since the skewness and kurtosis values of the numerical variables ranged between −1 and +1, it was assumed that the numerical data followed a normal distribution (33). Therefore, parametric tests were used in the analysis. Numerical variables between two groups were analyzed using the independent samples t-test. In the multiple linear regression analysis, the PACS total score was considered the dependent variable. The stepwise regression method was applied in this analysis. The model included age, gender, marital status, income level, education level, family type, SWLS, C19P-S sub-dimensions, and COSP sub-dimensions. For statistical analyses, a p-value <0.05 was considered significant.

RESULTS

The sociodemographic characteristics of the sample are shown in Table 1. The mean age of the participants was 32; 62.2% were female; 58.5% were university graduates; 69.8% were single; and 68% lived in a nuclear family structure. This educational profile does not align well with the general population. There was a significant difference between groups with low and high risk of alcohol use disorder in terms of marital status (X^2=4.365, p=0.037). However, the groups were similar in terms of age (t=, p=), gender (X^2=3.480, p=0.062), education level (X^2=1.874, p=0.599), income level (X^2=3.889, p=0.421), work system (X^2=3.653, p=0.455), and family structure (X^2=1.228, p=0.268). Among individuals with a high risk of alcohol dependence, 49.4% (n=41) reported having a psychiatric disorder, while this rate was 32.7% (n=80) in those with a low risk of alcohol dependence. When participants were asked about their frequency of online shopping, among those at low risk of alcohol dependence, 19.2% (n=47) reported shopping once a year, 49.8% (n=122) reported shopping once a month, 19.2% (n=47) reported shopping once a week, and 8.6% (n=21) reported shopping more than once a week. In individuals with a high risk of alcohol dependence, these rates were: 13.3% (n=11) reported shopping once a year, 43.4% (n=36) reported shopping once a month, 15.7% (n=13) reported shopping once a week, and 18.1% (n=15) reported shopping more than once a week. Participants who reported not engaging in online shopping made up 4.9% (n=16) of the sample. The groups showed a significant difference in terms of online shopping frequency (X^2=12.445, p=0.014).

The comparison of the applied scales based on alcohol dependence risk is shown in Table 2. Among individuals with a high risk of alcohol dependence, the psychosomatic (p=0.010) and economic (p=0.036) sub-dimension scores of the C19P-S were found to be significantly higher.

The evaluation of variables predicting alcohol craving in patients with a high risk of alcohol misuse using multiple linear regression analysis is shown in Table 3. To avoid issues with multicollinearity, the stepwise method was used in the multiple linear regression analysis. In the constructed model, age, gender, marital status, income level, education level, family type, SWLS, C19P-S sub-dimensions, and the sub-dimensions of the COSP were not significant predictors. The PACS was used as the dependent variable. The model was statistically significant and explained 11% of the variance ($F=10.959$, $p<0.001$). The only variable significantly associated with alcohol craving was the psychosomatic sub-dimension of the C19P-S scale ($\beta=3.310$, $p<0.001$).

DISCUSSION

There is widespread concern that the physical, social, and mental health of alcohol and substance users, as well as individuals with addiction, could be significantly affected by the COVID-19 pandemic. Harmful alcohol consumption leads to neuroadaptations that intensify alcohol craving during periods of stress (34). Therefore, social isolation, changes in employment status, or uncertainty about the future can trigger increased alcohol consumption in individuals with alcohol use disorder (6).

In our study, as psychosomatic symptoms related to COVID-19 phobia increased, craving also increased in individuals at high risk of alcohol dependence. A bidirectional relationship can be discussed here. During alcohol withdrawal, physical complaints such as pain, tension, sleep problems, and palpitations may occur. Complaints related to alcohol withdrawal are among the internal triggers for alcohol consumption in individuals who are attempting to quit drinking (35). Indeed, an increase in craving has been reported among individuals with alcohol use disorder during the pandemic (36).

A three-path psychobiological model has been proposed for craving. One of the components of this model, relief drinking, refers to the consumption of alcohol to eliminate aversive psychological or physical conditions (37). It is well known that alcohol is used to alleviate physical complaints such as pain and tension (4,38). In one study, it was reported that pain intensity increased during quarantine compared to the pre-quarantine period in patients with

Table 1. Sociodemographic characteristics of the sample

Variable		Low risk of alcohol dependence (n=245)		High risk of alcohol dependence (n=83)		Total (n=328)	
		Mean	SD	Mean	SD	Mean	SD
Age		32.38	10.61	32.30	9.01		
		n	%	n	%	n	%
Gender	Female	160	65.3	44	53.0	204	62.2
	Male	85	34.7	39	47.0	124	37.8
Education level	Primary school	5	2.0	0	0.0	5	1.5
	High school	47	19.2	17	20.5	64	19.5
	University	142	58.0	50	60.2	192	58.5
	Postgraduate	51	20.8	16	19.3	67	20.4
Marital status	Single	163	66.5	66	79.5	229	69.8
	Married	82	33.5	17	20.5	99	30.2
Income level	0-2324	72	29.4	20	24.1	92	28.0
	2325-4000	51	20.8	25	30.1	76	23.2
	4001-6000	42	17.1	11	13.3	53	16.2
	6001-10000	45	18.4	17	20.5	62	18.9
	Above 10000	35	14.3	10	12.0	45	13.7
Family type	Nuclear family	162	66.1	61	73.5	223	68.0
	Extended family	83	33.9	22	26.5	105	32.0
Work system	Shift work	30	12.2	8	9.6	38	11.6
	Home office	64	26.1	26	31.3	90	27.4
	Unemployed during pandemic	24	9.8	13	15.7	37	11.3
	Not working before/after pandemic	74	30.2	21	25.3	95	29.0
	Same work pattern	53	21.6	15	18.1	68	20.7

Note: *p<0.05 indicates statistical significance.
SD: Standart deviation

Table 2. Comparison of applied scales based on alcohol dependence risk

Scales and subscales		Alcohol dependence low risk (n=245)	Alcohol dependence high risk (n=83)	Statistical analysis	
		Mean + SD	Mean + SD	t	p
C19P-S	Psychological	21.80±5.25	22.59±5.09	-1.180	0.239
	Psychosomatic	8.57±3.76	**9.92±4.93**	-2.597	0.010
	Social	14.20±4.43	14.65±4.64	-0.790	0.430
	Economic	8.53±2.93	**9.34±3.33**	-2.108	0.036
COSP	Problem	15.04±5.63	15.21±6.34	-0.238	0.812
	Preoccupation with thoughts	7.04±2.68	6.72±2.62	0.960	0.338
	Mood regulation	8.22±4.28	8.73±4.75	-0.919	0.359
	Withdrawal	9.06±2.32	9.08±2.57	-0.049	0.961
	Tolerance	9.02±4.32	9.21±4.72	-0.342	0.733
Satisfaction with life scale		13.86±4.77	13.34±5.05	0.832	0.406
CAGE test		0.33±0.47	**2.77±0.78**	-33.769	<0.001

*p<0.05 indicates statistical significance
C19P-S: COVID-19 Phobia scale, COSP: Compulsive Online Shopping scale, SD: Standard deviation

Table 3. Evaluation of variables predicting alcohol craving in patients with high risk of alcohol dependence using multiple linear regression analysis

	Unstandardized coefficients		Standardized coefficients	t	p-value	95.0% Confidence interval for B		CI
	B	Standard error	Beta (β)			Lower	Upper	
C19P-S psychosomatic	0.559	0.169	0.345	3.310	0.001	0.223	0.894	4.283

Model Fit: F=10.959, p<0.001, R^2=0.11
*p < 0.05 indicates statistical significance
CI: Confidence interval, C19P-S: COVID-19 Phobia scale

chronic pain (39). In this case, the sensation of pain poses a risk for alcohol consumption. Additionally, alcohol can be used hypnotically in cases of insomnia (40). However, individuals with alcohol use disorder develop tolerance to the hypnotic effects of alcohol, leading to chronic insomnia. In one study (41), insomnia in individuals with alcohol use disorder was found to be associated with higher craving levels.

Craving is a strong predictor of relapse in individuals with alcohol use disorder (42). Moreover, craving is a significant phenomenon in the development of alcohol dependence in all individuals (43). Furthermore, alcohol craving increases during periods of stress even in individuals without alcohol use disorder (44). Therefore, during pandemic conditions, craving and subsequent alcohol dependence may emerge in individuals at high risk.

As shopping has increasingly shifted to online platforms globally, compulsive buying behavior has also found a new domain online. The internet offers a wide variety of shopping options, simultaneous access to multiple online stores, and instant gratification of emotional and identity-related expectations. Additionally, accessibility, anonymity, availability, and affordability-characteristics unique to the internet-have been associated with compulsive online shopping behavior (45).

A review of the literature shows that studies examining compulsive online shopping behavior during the pandemic are limited. In one study (20), an increase in impulsive online shopping behavior was reported during the pandemic. Compulsive buying is more commonly observed as a response to negative affect. Relief from negative emotions or experiencing euphoria is among the most common psychological outcomes of compulsive buying (46). Compulsive buying may also be associated with dysfunction in emotion regulation (12).

In our study, in line with the literature, a significant relationship was observed between COVID-19 phobia and the mood regulation sub-dimension of online shopping behavior. Young women are more prone to developing compulsive buying behavior (47). The higher prevalence of compulsive shopping among women has been linked to sociocultural factors, such as the perception of shopping as a recreational activity (48). In our study, it was also observed that women and young individuals engaged in more frequent online shopping to regulate their mood.

The findings of our study reveal that during the pandemic period, the emotional and physical symptoms of individuals with alcohol use disorder have led to increased alcohol craving. Similarly, compulsive buying behavior was observed as being used as an emotion regulation strategy.

Study Limitations

Despite the significant findings obtained from our study, there are some limitations. Conducting our study with a larger sample size could have enhanced the generalizability of the findings, providing stronger and more meaningful results. Furthermore, evaluating alcohol use disorder based on the CAGE scale cut-off score and using a non-probability sampling method (snowball sampling) are additional limitations of our study.

CONCLUSION

Our results indicate that fear of COVID-19 is associated with an increase in alcohol craving, online shopping for mood regulation, and preoccupation with online shopping activity. In individuals at high risk of alcohol dependence, increased fears and bodily sensations related to COVID-19 are associated with higher craving levels. Therefore, during the pandemic, alcohol craving may increase in individuals at high risk of alcohol dependence. Additionally, women, young individuals, and those in the high-income group engage in more frequent online shopping as a mood regulation strategy.

The COVID-19 pandemic has had a significant impact on alcohol craving and compulsive buying behavior. It is recommended that individuals with alcohol use disorder should receive support during the pandemic aimed at improving mood regulation skills and enhancing support mechanisms. Further research involving larger populations and encompassing other areas of addiction is needed to evaluate the broader impact of the pandemic on addiction-related behaviors.

Ethics

Ethics Committee Approval: This study was reviewed by the Gazi University Measurement and Evaluation Ethics Subcommittee and received ethical approval (references number: 91610558-604.01.02, research code: 2020-324, date: 06.06.2020).

Informed Consent: It was obtained.

Footnotes

Authorship Contributions

Surgical and Medical Practices: S.C., Concept: S.C., Design: S.C., Data Collection or Processing: S.C., Ç.H.Y., Analysis or Interpretation: S.C., Ç.H.Y., Literature Search: S.C., Ç.H.Y., Writing: S.C.

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