

ORIGINAL ARTICLE

Examining Compulsive Online Shopping Behavior, Posttraumatic Cognitions, and Death Anxiety in Young Adults*

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*This article is compiled from the master's thesis titled "Examination of compulsive shopping behavior and post-traumatic cognition and death anxiety in young adults" written by Hikmet Beyza Yakıcı under the supervision of Prof. Dr. Zeliha Traş at Necmettin Erbakan University Institute of Educational Sciences.

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Received: September 17, 2024

Revision Requested:
February 8, 2025

Last Revision Received:
February 13, 2025

Accepted: April 25, 2025

Publication Date:
September 15, 2025



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Main Points

- Compulsive online buying behavior scores are significantly higher in female young adults than in male young adults.
- The scores of compulsive online buying behavior are significantly higher in individuals with 5 – 6 hours of daily internet use on weekdays and weekends.
- Compulsive online shopping behavior has a positive association with posttraumatic cognition.
- Compulsive online shopping behavior has a positive association with death anxiety.
- Death anxiety plays a partial mediating role between compulsive online purchasing behavior and posttraumatic cognitions.

Abstract

This study aims to examine the relationships between compulsive online shopping behavior (COSB), post-traumatic cognitions, and death anxiety in young adults. In this study, the relational research model, one of the quantitative research methods, was used. The study group was determined by the criterion sampling method. The study group consisted of 467 young adults ($\bar{x} = 28.09$), 372 females, and 95 males. According to the results, compulsive online shopping behavior differs significantly in favor of female young adults according to the gender variable and in favor of single young adults according to the marital status variable. Compulsive online shopping behavior shows a significant difference in favor of individuals with 5 – 6 hours of daily Internet use on weekdays and weekends according to the duration of internet use on weekdays and weekends. Results of correlation analysis show a significant positive relationship between young adults' COSB scores, posttraumatic cognition scores, and death anxiety scores. According to the hierarchical regression analysis, death anxiety and posttraumatic cognition scores significantly predicted COSB scores. As a result of the mediation analysis, death anxiety plays a mediating role in the relationship between posttraumatic cognitions and COSB. The findings suggest that psychological factors such as posttraumatic cognitions and death anxiety play an important role in shaping compulsive online shopping behavior.

Keywords: Compulsive online shopping behavior, death anxiety, posttraumatic cognitions, young adults

Introduction

Throughout history, people have had different sources of motivation to purchase a product (Heffernan et al., 2022). It is seen that online shopping behavior is preferred for reasons such as good product selection, price comparison options, and ease of use (Ernst & Young, 2000). In certain situations, purchasing behavior can be unplanned and

sudden, and can be associated with a strong sense of impulse or excitement (Weinstein et al., 2016). In recent years, many individuals may prefer online shopping instead of store shopping (Müller et al., 2021). Online purchasing behavior or online shopping is defined as buying and selling products using the Internet (Shih, 2004). Online shopping behavior is expressed as a type of behavior that many individuals enjoy. However, when shopping behavior

Cite this article as: Yakıcı, H. B., & Traş, Z. (2025). Examining compulsive online shopping behavior, posttraumatic cognitions, and death anxiety in young adults. *Addicta: The Turkish Journal on Addictions*, 12(3), 348-354.

becomes compulsive, it can lead to significant problems, especially in personal, professional, and economic areas (Heffernan et al., 2022). With the increasing use of the Internet, changes are occurring in the social lives of individuals. One of these changes is the increase in online shopping behavior. In recent years, many people prefer to shop online rather than in stores (Müller et al., 2021). It is understood that individuals who use the Internet (Sharif et al., 2021) and spend more time on social media applications (Pahlevansharif & Khanekharab, 2017) show more compulsive online shopping behaviors (COSB). Compulsive online shopping behavior is considered one of the behavioral addictions with technological aspects that cannot be controlled despite its negative social, emotional, and economic consequences (Rose & Dhandayudham, 2014; Müller et al., 2021).

Compulsive online shopping behaviors is considered one of the behavioral addictions with technological aspects that cannot be controlled despite its negative social, emotional, and economic consequences (Müller et al., 2021). This behavior is also a tendency to compulsive and problematic shopping based on Internet use, which leads to social, emotional, and economic problems like other behavioral addictions (Griffiths, 2005). Griffiths (2000) points out the importance of distinguishing between addiction to the Internet and the addictive behaviors that occur on the Internet. Many people who spend excessive time online are not addicted to the medium itself but use it to satisfy other addictions (Sharif et al., 2021).

Trauma is defined as the repeated exposure of individuals to traumatic events, such as witnessing negative events experienced by others, experiencing events involving death or death threats, and learning that a negative event has happened to someone in the family or close friends (APA, 2013). It is understood that behaviors with addictive potential observed in individuals are used as an avoidance method to cope with trauma-induced stressful situations (Lehinger et al., 2022). Emotions such as regret, stress, anxiety, and sadness are often observed after trauma (APA, 2013). While shopping, positive emotions such as relaxation, happiness, and pleasure may emerge in individuals with these emotions (Günüç & Doğan-Keskin, 2016). Compulsive online shopping behavior is considered a behavioral addiction. Therefore, it is believed that it causes addiction in individuals who have been exposed to trauma and may trigger COSB (Thege et al., 2017).

The underlying mechanism of PTSD is posttraumatic cognitions, which is one of the main factors contributing to the development and maintenance of PTSD (Foa et al., 1999). One of the changes in the diagnostic criteria for posttraumatic stress disorder in the fifth edition of the DSM-V is the inclusion of “persistent negative beliefs about oneself, others, or the world” as a symptom criterion (Friedman, 2013). Considering these changes, it is understood that negative posttraumatic cognitions are one of the important factors in the persistence of posttraumatic stress disorder symptoms (Kooistra et al., 2023). Losing a loved one and facing the death of a loved one is recognized as a traumatic experience (APA, 2013). As a result of death-related experiences, anxiety may arise in individuals. This is called death anxiety. Death anxiety is defined as the fear of extinction, the fear that one will no longer exist, that one will lose his/her existence in the world. The multidimensional anxiety that arises from thinking about the death

of oneself or others and has an existential origin is referred to as death anxiety (Yalom, 2014). The multidimensional anxiety that arises from thinking about the death of oneself or others and has an existential origin is referred to as death anxiety (Nyatanga & Vocht, 2006).

Death anxiety is considered to be one of the fundamental issues of mental health. Since death is an anxiety-provoking situation in the eyes of modern people, the concept of death anxiety has gained greater importance today (Yalom, 2014). According to existentialist theory, death anxiety is defined as an anxiety that is in the depth of the individual's self, does not reach the level of the individual's consciousness, and is inevitable (Geçtan, 2016). Death anxiety is present in all living individuals, but in cases where the reality of mortality is revealed, death anxiety increases (Greenberg et al., 1990). An individual's level of death anxiety may increase according to the negative thoughts the individual has about death (Tanhan, 2007). Death anxiety is associated with death avoidance and death hostility. The way to deal with death anxiety is to face death and accept the reality of death (Yalom, 2014). In addition, it is stated that when individuals increase their death anxiety levels, they perform online shopping behavior more in order to cope with their anxiety and relax (Dülek, 2022). It is known that individuals make more online purchases during young adulthood (Müller et al., 2013). It is noteworthy that COSB has increased in recent years, especially among young adults. Based on all this information, this study aims to examine the relationships between young adults' COSB, posttraumatic cognitions, and death anxiety.

Material and Methods

Participants and Procedures

In this study, the relational research model, which is one of the quantitative research methods, was used. This study aims to examine the relationships between young adults' COSB and their posttraumatic cognitions and death anxiety. In addition, the mediating role of death anxiety in the relationship between posttraumatic cognitions and COSB was also examined.

The study group was selected using the criterion sampling method within the purposive sampling method. In purposive sampling, the criteria that the study group should have are determined in advance (Faul et al., 2009). In this study, the criterion was defined as engaging in online shopping behavior. It is stated that COSB, the dependent variable of the study, is more common among young adults (Müller et al., 2013). For this reason, the study group of the research consists of young adults who make online purchases. The number of the study group was obtained using the G*Power 3.1.9.6 program (Faul et al., 2009). In the analysis using G*Power, $\alpha = 0.05$, $\beta = 0.80$, and $f^2 = 0.02$ were accepted (Faul et al., 2009), and the number of the study group was determined to be 465. Participants who volunteered to participate were ensured to participate and were provided with an informed consent form. This study was approved by the Ethics Committee of Necmettin Erbakan University (Approval No: 220-121; Date: 18.12.2020). The study group consisted of 467 young adults, 372 females (79.7%), and 95 males (20.3%). The mean age was calculated as 28.09 ($\bar{x} = 28.09$, $ss = 9.70$). When the frequency of online shopping of the participants is analyzed, 184 people (39.8%) shop monthly, 134 people (28.5%) shop every few months, 101 people

(21.5%) shop weekly, 43 people (9.2%) shop several times a year, and 5 people (1.1%) shop daily.

For this study, per the tenets of the Declaration of Helsinki, Necmettin Erbakan University was approved by the decision dated 18.12.2020 and numbered 2020-121;

Measures

Compulsive Online Shopping Behavior Scale

The COSB Scale is a scale that was adapted to Turkish culture by Bozdağ and Yalçınkaya-Alkar (2018) to adapt the Bergen Shopping Addiction Scale developed by Andreassen et al. (2015) to online purchase behavior, and a validity and reliability study was conducted. The scale consists of 27 items. An increase in the score obtained from the scale indicates an increase in an individual’s COSB. The Cronbach’s α internal consistency coefficient of the total score was calculated to be 0.95. The factor loadings of the items ranged from 0.41 to 0.88. The results obtained indicate that the CSCS is highly reliable. For this study, the Cronbach’s α internal consistency coefficient was calculated to be 0.92.

Posttraumatic Cognitions Scale

The Posttraumatic Cognitions Scale developed by Foa et al. (1999) was adapted to Turkish culture by Yağcı-Yetkiner (2010). The scale was designed to assess trauma-related cognitions. The scale consists of 36 items. The high scores obtained from the scale indicate that individuals have intense erroneous cognitions related to the traumatic experiences they have experienced. The Cronbach’s α internal consistency coefficient was calculated to be 0.95. The item-total correlation values of the scale ranged from 0.34 to 0.73. For this study, the Cronbach’s α internal consistency coefficient was calculated to be 0.95.

Death Anxiety Scale

The Death Anxiety Scale was developed by Sarıkaya and Baloğlu (2016). An increase in the score obtained from the scale indicates an increase in the individual’s death anxiety level. The scale consists of 20 items. The Cronbach’s α internal consistency coefficient of the total score of the scale was calculated as 0.95. The factor loading values of the scale vary between 0.52 and 0.83. For this study, the Cronbach’s α internal consistency coefficient was calculated to be 0.96.

Data Analysis

The SPSS program was used for data analysis. Descriptive statistics, one-way analysis of variance, independent sample *t*-test, Pearson correlation coefficient, hierarchical regression analysis, and mediation analysis with the bootstrap method were conducted. Skewness and Kurtosis values of the data were between -1 and +1 (Hair Jr. et al., 2021), indicating a normal distribution.

Results

This section presents the results related to the sub-problems.

Table 1 shows the findings of *t*-test results of COSB according to gender, marital status, and employment status variables. According to Table 1, the COSB of young adults differs significantly by gender variable ($t_{465} = 2.480, p < .05$). The COSB scores of female young adults ($\bar{x} = 18.64$) are statistically significantly higher than the scores of male young adults ($\bar{x} = 14.38$). The COSB of young adults differs significantly by marital status variable ($t_{465} = 2.732, p < .05$). The COSB scores of single young adults ($\bar{x} = 19.47$) are statistically significantly higher than the scores of married young adults ($\bar{x} = 15.67$). The COSB of young adults does not differ significantly according to whether they are employed or not ($t_{465} = 0.055, p > .05$).

Table 2 shows the findings of ANOVA results of COSB according to income level, weekday and weekend daily internet usage time variables. According to Table 2, young adults’ COSB does not differ significantly by perceived income level variable ($F_{2,464} = 0.699, p < .05$). The COSB of young adults differs significantly according to the variable of time spent on the Internet during the week ($F_{3,463} = 2.897, p < .05$). The Scheffe test was used because the variances were homogeneously distributed when looking at the source of differentiation. According to the results of the Scheffe test, the COSB scores of COSB of young adults with 5 – 6 hours of daily Internet use on weekdays ($\bar{x} = 19.91$) are statistically significantly higher than the scores of young adults with 1 – 2 hours of daily Internet use ($\bar{x} = 13.65$).

The COSB of young adults differs significantly according to the variable of daily Internet usage time during the weekend ($F_{3,463} = 3.129, p < .05$). Scheffe’s test was used because the variances were homogeneously distributed when looking at the source of differentiation. According to the results of the Scheffe test, the values

Table 1.
Independent Sample t-Test Results of COSB by Gender, Marital Status, and Employment Status Variables

	Gender	n	\bar{x}	SD	t	p	d
Compulsive Online Shopping Behavior	Female	372	18.64	15.03	2.480	.013*	.028
	Male	95	14.38	14.54			
Compulsive Online Shopping Behavior	Marital Status	n	\bar{x}	SD	t	p	d
	Single	259	19.47	15.03	2.732	.007*	.025
	Married	208	15.67	14.76			
Compulsive Online Shopping Behavior	Employment Status	n	\bar{x}	SD	t	p	
	Employed	256	17.81	15.41	.055	.956	
	Unemployed	211	17.73	14.55			

* $p < .05$.
** $p < .01$.

Table 2.
ANOVA Test Results of COSB According to Perceived Income Level, Weekday and Weekend Daily Internet Usage Time Variables

	Income Level	n	\bar{x}	SD	F	p		
Compulsive Online Shopping Behavior	Low	108	17.49	13.91	.699	.488		
	Middle	307	18.24	15.56				
	High	52	15.63	13.93				
	Daily Internet Usage on Weekdays	n	\bar{x}	SD	F	p	η^2	Significant Difference (Scheffe)
Compulsive Online Shopping Behavior	1-2 Hours	70	13.65	14.91	2.897	.035*	.018	3 > 1
	3-4 Hours	128	17.26	15.19				
	5-6 Hours	156	19.91	13.98				
	7 Hours and above	113	17.98	15.85				
	Daily Internet Usage on Weekends	n	\bar{x}	SD	F	p	η^2	Significant Difference (Scheffe)
Compulsive Online Shopping Behavior	1-2 Hours	75	18.12	17.18	3.129	.026*	.020	3 > 2
	3-4 Hours	121	14.94	14.14				
	5-6 Hours	162	20.30	14.17				
	7 Hours and above	109	16.95	15.15				

* $p < .05$, 1 = 1 – 2 hours, 2 = 3 – 4 hours, 3 = 5 – 6 hours, 4 = 7 hours and above.

of COSB of young adults with 5 – 6 hours of daily Internet use on the weekend ($\bar{x} = 20.30$) are statistically significantly higher than the values of young adults with 3 – 4 hours of daily Internet use ($\bar{x} = 14.94$).

Table 3 shows the results of the correlation analyses between the variables. According to Table 3, a positive low-level ($r = 0.291$, $p < .01$) significant relationship was obtained between COSB scores and posttraumatic cognition scores, and a positive low-level ($r = 0.277$, $p < .05$) significant relationship was obtained with death anxiety scores.

In the hierarchical regression analysis in Table 4, the theoretical rationale was considered in determining the order in which the independent variables were added to the model (Jeong & Jung, 2016). In Model 1, the total score of the Death Anxiety Scale was added, and in Model 2, the total score of the Posttraumatic Cognitions Scale was added. When considering COSB, the contribution of the death anxiety variable entered in Model 1 to the model was significant ($R^2 = 0.077$, $p < .001$). In the second model, with the addition of the posttraumatic cognitions variable, $R^2 = 0.115$ with an increase of 0.038. In step 2, COSB was significantly predicted ($R = 0.339$, $R^2 = 0.115$, $\Delta R^2 = 0.111$, $F_{2,464} = 30.042$, $p < .001$). When the corresponding beta values were examined, the strongest predictor was posttraumatic cognitions ($\beta = 0.214$, $p < .001$), followed by death anxiety ($\beta = 0.189$, $p < .001$). Death anxiety and posttraumatic cognition scores explained 11% of the total variance in COSB scores ($R^2 = 0.11$).

Table 3.
Pearson Correlation Coefficient Results

	Compulsive Online Shopping Behavior
Posttraumatic Cognitions	0.291**
Death Anxiety	0.277**

* $p < .05$.

** $p < .01$.

In the mediation model tested in Table 5, posttraumatic cognitions were taken as the independent variable, death anxiety as the mediating variable, and COSB as the dependent variable. In testing the analyses, the fourth model in the Process macro extension Preacher and Hayes (2008) was used. The bootstrapping technique was employed to calculate the significance of the mediating variable. In the mediation analyses, the confidence interval obtained by bootstrapping 5000 repeated hypothetical samples was used to test the significance of the mediating effect. Posttraumatic cognitions significantly predicted death anxiety ($\beta = 0.41$, $p < .001$), death anxiety significantly predicted COSB ($\beta = 0.27$, $p < .001$), and posttraumatic cognitions significantly predicted COSB. Posttraumatic cognitions and death anxiety significantly predicted COSB with an indirect effect ($\beta = 0.19$, $p < .001$) and explained 34% of the total variance ($R^2 = 0.34$).

The bootstrap coefficient and CI (95%) of these coefficients are examined to determine whether the indirect effects related to mediation are significant. It was found that death anxiety has a partial mediating role in the relationship between posttraumatic cognitions and COSB ($\beta = 0.19$, $SE = 0.03$, 95% CI [0.01, 0.04], $p < .001$). A partial mediator variable refers to the cases where direct and indirect effects are significant. In other words, a partial mediation variable is defined as the relationship between the dependent and independent variables that do not completely disappear when the mediator variable enters between the dependent and independent variables (Preacher and Hayes, 2008).

Discussion

In this study, the compulsive online shopping scores of female young adults were found to be statistically significantly higher than the scores of male young adults. Female young adults exhibit more COSB than male young adults (Puiras et al., 2022; Grazhda et al., 2022; Adamczyk et al., 2020; Zhang et al., 2019). There is a general judgment that COSB is mostly performed by female individuals (Bal & Okay, 2022). In general, there is a common belief that women shop more. Women attach importance to their

Table 4.
Hierarchical Regression Analysis on the Prediction of Compulsive Online Shopping Behavior

Model		B	SE	β	t	p	Tolerance	VIF
1	Constant	10.537	1.343		7.844	.000		
	Death Anxiety	0.196	0.031	0.277	6.218	.000***	1.000	1.000
Model 1: R ² =.077								
2	Constant	3.624	2.035		1.781	.076		
	Death Anxiety	0.134	0.034	0.189	3.949	.000***	0.831	1.204
	Posttraumatic Cognitions	0.085	0.019	0.214	4.456	.000***	0.831	1.204

Model 2: R² = 0.115, R² change = 0.038

Durbin-Watson: 1.921, ***p < .001, **p < .01, *p < .05.

Model 1: R = 0.277, R² = 0.077, $\Delta R^2 = 0.075$, F_{1,465} = 38.662, p < .001.

Model 2: R = 0.339, R² = 0.115, $\Delta R^2 = 0.111$, F_{2,464} = 30.042, p < .001.

appearance and show more shopping behavior because they have more shopping opportunities than men. With the development of technology, shopping behavior has started to be done online. There is also an increase in women’s shopping behavior.

In this study, it was found that the COSB scores of unmarried young adults were statistically significantly higher than the scores of married young adults. Some studies have obtained results similar to this result (Yakın & Aytekin, 2019). It can be seen that there are different results regarding the effect of marital status on COSB. According to another result of the study, it was found that the scores of COSB were not significantly different according to the variable of employment status. There are studies with similar results to this research result (Demirel & Tapan, 2023).

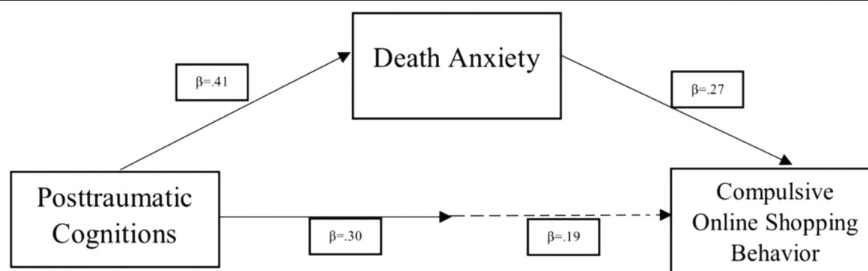
According to another result, the COSB scores of young adult individuals did not differ significantly according to the perceived income level variable. Similarly, there are studies that did not find a relationship between COSB and perceived income level (Traş & Yakıcı, 2023). The COSB is considered a behavior that can lead to addiction in individuals (Griffiths, 2005). Individuals who engage in COSB may not consider their perceived income

level while engaging in this behavior due to their focus on the purchasing behavior.

When examining the results regarding Internet use, it was found that the COSB scores of young adult individuals differed significantly according to the variables of weekday-weekend daily Internet use, and individuals with 5 – 6 hours of daily Internet use on weekdays-weekends had higher COSB scores. This result of the study is consistent with the results of the studies available in the literature (Sarigedik & Ölmez, 2021). Therefore, it is likely that the rate of individuals’ online purchasing behavior increases with increased Internet use, which may be related to COSB. Increased Internet use has been highlighted as a risk factor for the emergence of COSB. According to the results of this study, the increase in daily Internet usage time of individuals leads to the emergence of COSB. According to Griffiths (2000), individuals with high Internet use may use the Internet environment as a means to realize their other addictions. For this reason, individuals who spend more time on the Internet increase the amount of time they spend on the Internet and use the Internet as a tool for online shopping.

According to the correlation analysis results of the study, a significant positive relationship was found between young adult

Table 5.
Mediation Analysis Model Results of Death Anxiety on Posttraumatic Cognitions and Compulsive Online Shopping Behavior



Predictor Variable	Dependent Variable	R ²	β	SE	t	p
Posttraumatic Cognitions	Death Anxiety	0.17	0.41	0.02	4.359	.000***
Death Anxiety	Compulsive Online Shopping Behavior	0.27	0.27	0.03	6.218	.000***
Posttraumatic Cognitions	Compulsive Online Shopping Behavior	0.30	0.30	0.01	2.555	.000***
Posttraumatic Cognitions + Death Anxiety	Compulsive Online Shopping Behavior	0.34	0.19	0.03	3.949	.000**

individuals' COSB and posttraumatic cognitions. It is stated that individuals' exposure to epidemics and pandemics and traumatic experiences leads to an increase in daily Internet use, so there may be an increase in behavioral addictions such as gambling addiction and online shopping addiction (Sarigedik & Ölmez, 2021). It is understood that the pandemic increases COSB (Grazhda et al., 2022). According to the results of this study, it is concluded that as the level of posttraumatic cognitions of individuals increases, COSB will also increase. It is believed that the traumatic experience of individuals, and the formation of posttraumatic cognitions because of this traumatic experience, cause individuals to engage in COSB as a coping strategy.

According to this study, a significant positive relationship was found between young adults' COSB and death anxiety. A review of the literature shows that the studies that have examined the relationship between COSB and death anxiety are limited. The results of the existing studies are consistent with this result of the study (Dülek, 2022). In situations that cause uncertainty, such as epidemics, individuals' death anxiety may increase, and it is believed that individuals' COSB has increased over time with the spread of online purchasing behavior to cope with this anxiety.

According to the results of the mediation analyses conducted to examine whether death anxiety plays a mediating role between COSB and posttraumatic cognitions, it was found that death anxiety plays a partial mediating role in the relationship between COSB and posttraumatic cognitions. In the literature review, no study was found on the mediating role of death anxiety between COSB and posttraumatic cognitions. The obtained result states that the death anxiety levels of individuals whose posttraumatic cognitions develop negatively increase, and the increase in death anxiety increases the COSB of individuals.

Dülek (2022) states that individuals shop online in order to cope with death anxiety and that this purchasing behavior causes compulsive online purchasing behavior and becomes addictive over time. Cognitive processes related to the evaluation of traumatic experiences play a crucial role in the impact of traumatic experiences on an individual's life (Kooistra et al., 2023). When an individual creates a negative cognitive schema about the traumatic experience to which he/she has been exposed, posttraumatic cognitions occur in the individual. These cognitions are negative cognitions about oneself and the world (Barton et al., 2013). In addition, individuals who have been exposed to traumatic experiences may experience an increase in death anxiety (Yalom, 2014). It is understood that individuals make online purchases to cope with death anxiety and that this purchasing behavior leads to COSB and eventually reaches the level of addiction (Dülek, 2022).

Limitations and Suggestions for Future Research

As a result, the increase in the level of posttraumatic cognitions that occur because of the traumatic event experienced by individuals increases death anxiety, which leads to an increase in COSB. Today, it is believed that COSB has an important place in people's lives, and there is an increase in COSB, and this behavior is believed to develop into addiction over time. In other words, the traumatic experience can harm the individual and increase death anxiety. To cope with the negative cognitions and death anxiety caused by the traumatic effect on the individual, they may engage in online

purchasing behavior. With the sense of relief and pleasure that this behavior creates in the individual, this behavior can become compulsive and create an addiction (Griffiths, 2005). It is seen that being exposed to a traumatic experience and forming negative cognitions about that experience is a risk factor for COSB.

In future studies, it is recommended to examine the relationships between COSB, posttraumatic cognitions, and death anxiety in study groups consisting of adolescents, middle-aged adults, and older adults. In addition, the relationships between behavioral addictions such as Internet addiction, online gaming addiction, online gambling addiction, and posttraumatic cognitions and death anxiety can be examined. Experimental, qualitative, and quantitative studies of COSB can contribute to the literature and allow for a more detailed examination of the variable of COSB.

Data Availability Statement: The data that support the findings of this study are available upon request from the corresponding author.

Ethics Committee Approval: This study was approved by the Ethics Committee of Necmettin Erbakan University (Approval No: 220-121; Date: 18.12.2020).

Informed Consent: Written informed consent was obtained from the patients who agreed to take part in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – H.B.Y., Z.T.; Design – H.B.Y., Z.T.; Supervision – Z.T.; Resources – H.B.Y.; Materials – H.B.Y.; Data Collection and/or Processing – H.B.Y.; Analysis and/or Interpretation – H.B.Y.; Literature Search – H.B.Y.; Writing Manuscript – H.B.Y.; Critical Review – H.B.Y., Z.T.

Declaration of Interests: The authors have no conflict of interest to declare.

Funding: The authors declared that this study has received no financial support.

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