RESEARCH ON EDUCATION AND PSYCHOLOGY (REP)

Examining the Relationship between Phubbing and Mental Health among University Students: A Mixed Study

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Abstract

This study aims to examine the association between phubbing in college students and mental health, the dimensions of the association, and the source of this association. The study has the characteristics of an explanatory sequential mixed design, in which qualitative data from mixed designs are interpreted to explain quantitative data. In the quantitative phase of the study, data were collected from 305 participants. In this phase, descriptive statistics, Pearson correlation coefficient, regression analysis, and independent samples t-test were applied to the collected data. In the second phase, in which qualitative data were collected, data were gathered through focus group interviews with 12 participants who had participated in the quantitative phase of the study. In terms of gender, it can be said that female students experience more phobia, anxiety, depression, and stress than male students. According to the results of the qualitative research phase, the participants of the focus group interview indicated that the individuals who exhibit phubbing behaviours are introverted, lonely and abandoned, shy, anxious, poor in communication, and technology dependent. In addition, reasons for interest in smartphones may include relaxation, boredom, avoiding people, escaping stress and depression, escaping negative situations, motivation, following the daily activities of others, or escaping chat environments that do not interest them and that they consider unimportant.

Key Words

Mental health • Phubbing • Depression-Anxiety-Stress

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Introductıon

With the rapid development of communication technologies, there has been a significant increase in the desire to use mobile devices (Revilla et al., 2016). In spite of the physical distance, mobile devices can bring people together in a virtual environment and create an environment where people can spend a pleasant time as they can communicate regardless of time and space (Turkle, 2011). Despite the advantages of mobile devices for communication and social interaction, excessive use of cell phones can lead to dysfunctional behaviours such as "phubbing" and various psychological problems (Bianchi & Phillips, 2005; Bitar et al., 2022; Fernández et al., 2020).

The term "phubbing" is becoming increasingly common. In scientific literature, a new form of addiction is recognized as compulsive behaviour performed to avoid a certain stressful situation or negative thoughts and feelings (Beranuy et al., 2009; Davey et al., 2018; Guazzini et al., 2019). The term "phubbing" is composed of the words "phone" and "snubbing" (Ivanova et al., 2020). It is defined as underestimating the addressee or interlocutor by focusing on the cell phone during social contact (Ayas & Horzum, 2013; Sun & Samp, 2022). Nowadays, phubbing can be observed in almost any social setting, such as in a café, at a meeting, in the classroom, at school, during and outside working hours, and in family settings (Chotpitayasunondh & Douglas, 2016; Sun & Samp, 2022). Although communication technologies are used as an effective tool for time management, they can render face-to-face interactions meaningless by negatively affecting the quality of the relationship and the desire to talk (Ahn & Shin, 2013; Przybylski & Weinstein, 2013). Phubbing is a problematic behaviour that harms those who engage in it and those exposed to it (Chotpitayasunondh & Douglas, 2016).

Phubbing is considered a risk for mental health problems (Wang et al., 2017). Studies show a strong link between phubbing behaviour and Internet and phone addiction (Chotpitayasunondh & Douglas, 2016; Karadağ et al., 2015). In this sense, phubbing behaviour can combine many types of addictions, such as Internet addiction, cell phone addiction, social media addiction, and gambling addiction (Charlton & Danforth, 2010; T'ng, Ho & Low, 2018; Verma, Kumar & Yadav, 2019; Weinstein & Lejoyeux, 2010). Reviewing the literature, it can be seen that there are various studies on phubbing behaviour and its associated factors. The study conducted by Ergün et al. (2019) found factors such as life satisfaction, anxiety, and negative self-predict phubbing behaviour. Moreover, this study argues that psychological factors can explain phubbing. In another study, the psychological factors that cause phubbing are referred to as stress, loneliness, and anxiety (Chatterjee, 2020). Studies conducted concerning gender show that gender mediates the relationships between phubbing and addiction to cell phones, text messaging, social media, and the Internet (Gavcar, 2023). While cell phone, text messaging, and social media addiction are more common in females, they are associated with Internet and gaming addiction in males (Karadağ et al., 2015). It is noted that women tend to exhibit more phubbing than men (Balta et al., 2020; Chotpitayasunondh & Douglas, 2016). This means smartphones are more often used to facilitate social interactions in the female group, while cell phones have instrumental functions in the male group (Baron & Campbell, 2012).

Phubbing is associated with a lack of self-control and fear of missing out (Chotpitayasunondh & Douglas, 2016; Davey et al., 2018), dependence on social media (Davey et al., 2018; Karadağ et al., 2015), low satisfaction with close relationships (Wang et al., 2017), depressed mood (Bitar et al., 2021), neuroticism and social

anxiety (Guazzini et al., 2019). In addition, previous findings show that individuals with phubbing behaviours use their phones as a tool in situations of loneliness, anger, worthlessness, anxiety, and stress (Karadağ et al., 2016). The relationship between depression, anxiety, and stress is considered a common ailment, and these addictions are frequently studied (Ha et al., 2006; Liao et al., 2018; Mamun et al., 2019; Odacı & Çıkrıkçı, 2021; Vally, 2019). In studies conducted in this context, depression, anxiety, and stress are among the causes of Internet addiction, phone addiction, social media addiction, and gambling addiction (Caplan, 2002; Li et al., 2019; Odacı & Çıkrıkçı, 2021).

There is a bidirectional relationship between phubbing and depression (McDaniel & Coyne, 2016). Depression appears to be related to several predictors of phubbing, such as Facebook addiction and cell phone addiction (Augner & Hacker, 2012; Blachnio et al., 2015; Demirci et al., 2015). Internet and social media addiction shows similar symptoms to physical/psychological addiction, e.g., cravings, mood swings, conflicts, and relapses (Donovan, 2004; Tran et al., 2017). In addition, smartphones exacerbate psychological problems, especially worthlessness and depressive feelings (McDaniel ve Coyne, 2016). Phubbing indirectly affects depressive symptoms by decreasing life satisfaction (Roberts & David, 2016). Since the interpersonal relationships factor is also an important predictor of depression, weak relationships may increase the risk of depression (Natoli et al., 2016). Phubbing is considered particularly harmful concerning close relationships (Roberts and David, 2016). Mobile devices affect the quality of time people spend together, and conflicts caused by cell phone use can have several negative effects on individuals' lifelines and life satisfaction (Mcdaniel & Coyne, 2016; Wang et al., 2019; Zonash et al., 2020). Biologically, the electromagnetic waves emitted by smartphones cause melatonin production to slow down, so constant use of cell phones can lead to sleep disturbances associated with increased depressive symptoms (Wood et al., 2006; Zarghami et al., 2015).

Phubbing is also closely related to anxiety (Guazzini et al., 2019). Studies show that phubbing leads to the isolation of individuals in social settings, reduces the quality of communication, and negatively affects interpersonal trust (Beranuy et al., 2009; Chotpitayasunondh & Douglas, 2018; Roberts & David, 2016; Thomée et al., 2011). However, some studies find that individuals with high anxiety levels engage in more phubbing behaviours during social interactions via cell phones to reduce anxiety symptoms and discomfort (Davey et al., 2018; Guazzini et al., 2019).

Studies conducted in the literature have found that cell phone use is associated with high stress (Thomée et al., 2011). Communication on social media platforms and phone screens makes users feel more comfortable (Berry et al., 2017). Although cell phone use is independent of time and location accessibility is perceived as a stressor for users (Thomée et al., 2011). A recent study shows that phubbing is positively associated with negative affect and negatively associated with positive affect (Guazzini et al., 2021). Stressed individuals overuse the phone to cope with their negative feelings (Bitar et al., 2022).

Digitalization and the use of cell phones continue to increase and are used in many aspects of daily life. For this reason, it is important to explore the concept of developing preventive and effective interventions for phubbing behaviours. The present study has two main objectives: The first phase examines the relationship between phubbing and mental health (depression, anxiety, and stress). The second phase will examine this effect in depth.

Method

Research Design

The study was designed as a qualitative phase consisting of a quantitative phase and a focus group interview. The General Phubbing and Depression Anxiety Stress Scale were applied to the participants in the quantitative phase. In the qualitative phase of the study, a focus group discussion was conducted to explain the quantitative results. In this sense, the research design has the characteristics of a mixed design, an explanatory sequential mixed design (Creswell, 2009), in which the quantitative data are analyzed first. Then the qualitative data are interpreted to explain the quantitative data.

Sample Group

The study group of the research consists of students studying at Kütahya Dumlupınar University in the academic year 2022-2023. The data were collected in the quantitative phase of the research using a descriptive survey model (by selecting the sample with the "Maximum Diversity Sampling Method"). The qualitative research study group consisted of participants who had participated in the quantitative research phase and indicated that they had volunteered to participate in the qualitative research. In the qualitative phase, data were collected through focus group discussions. The demographic characteristics of the participants are listed in the table below.

Table 1

Demographic Characteristics of the Participants

Demographic Variable	Factor	N	%
Gender	Female	249	81.6
	Male	56	18.4
	Total	305	100

Data Collection Tools and Methods

In the quantitative phase of the study, the General Phubbing Scale and Depression Anxiety Stress Scale (DASS-21) were used as data collection instruments. In the qualitative phase, the researcher prepared the focus interview guide.

General Phubbing Scale. The original scale was developed by Chotpitayasunondh and Douglas (2018). The scale was designed as a 7-item Likert scale. However, it contains a total of 15 items, including 4 subdimensions. The names of the sub-dimensions of the scale are Nomophobia, Interpersonal Conflict, Self-Isolation, and Problem Acknowledgment. The Turkish adaptation of the scale was created by Ergün, Göksu, and Sakız (2020). The scale has no question to be scored in reverse order. A low score indicates a low level of phubbing, and a high score indicates a high level of phubbing. The alpha values of the study were nomophobia= .82, personal conflict= .84, personal isolation= .86, and problem acceptance= .74. In our current study, the Cronbach alpha reliability coefficient of the scale was calculated as .78 for nomophobia, .81 for personal conflict, .90 for personal isolation, and .68 for problem acceptance.

DASS-21. The original scale was developed by Lovibond and Lovibond (1995) under the name Depression Anxiety Stress Scale (DASS-42). The scale has a 4-point Likert rating and consists of 42 items, 14 belonging to the anxiety dimension and 14 to the stress dimension. The large number of questions in the scale also complicates data collection and analysis. It is found that the shorter forms of this scale have the validity to perform the same measurement (Brown et al., 1997). For this reason, the 21-question DASS scale was adapted into Turkish by Yılmaz, Boz, and Arslan (2017) based on the studies of Henry and Crawford (2005) and Mahmoud et al. (2010). The DASS-21 has 7 questions each to measure the dimensions of depression, stress, and anxiety. The scale is a 4-point Likert scale comprising anxiety, depression, and stress subdimensions. For the validity study, confirmatory factor analysis (DFA) was used based on different estimators (ULS, GLS, PLS, DWLS), and it was found that all constructs generally have sufficient validity (Yılmaz et al., 2017). Moreover, the reliability of the constructs that were found to be valid was also measured using Cronbach's Alpha and McDonald's Omega coefficients, and it was found that all constructs had a very high-reliability value. From the results of the validity and reliability studies, the factor loadings of the scale varied from .41 to .81. The reliability coefficients of the scale's data ranged from .755 to .822. The data analyzed using three different estimation methods suggest that the 21-item short form of the Depression, Anxiety, and Stress Scale has a valid and reliable structure. In our current study, the Cronbach alpha reliability coefficient of the scale was calculated to be .82 for anxiety, .89 for depression, and .84 for the stress subdimension.

Focus Group Discussion. The qualitative research study group consisted of participants who had participated in the quantitative research phase and indicated that they had volunteered to participate in the qualitative research. The interview guide is a prepared list of questions on the topics to guide the group leader's group discussion. The preparation of the interview guide is considered a fundamental task in the preparation of focus group research. In addition to reminding the leader of the topics and questions, the interview guide includes steps such as introductory questions, addressing the main themes in the interview, and closure.

Data Collection Process

Before starting the data collection phase, official permission was obtained from Kütahya Dumlupınar University, where the research was to be conducted. The researcher collected the data in the spring semester of 2022-2023. The General Phubbing Scale and the DASS-21 were used in the screening study. During data collection, those who volunteered to participate in the interviews, the second phase of the study, were asked to provide their phone numbers. The data collected this way were transferred to the computer environment and analyzed. By interviewing the students who volunteered to participate in the qualitative phase of the research, a suitable time and place was determined. The interviews were conducted in the form of semi-structured interviews. Interview questions prepared by the researcher were directed to the participants. In cases where the participants could not understand the questions, explanations were given without guidance from the researcher and the questions were asked again. The data were analyzed by preparing them for qualitative data analysis.

Data Analysis

To realize the main purpose of the research and to answer the sub-problems related to the main problem of the research, the data were collected using scales after obtaining the necessary legal permissions from 305 college

students. The collected data were transferred to the interactive or digital environment and processed for analysis. The analyzes were performed using the SPSS 26.0 program. Under the research objective, descriptive statistics, Pearson correlation coefficient, regression analysis, and independent samples *t*-test were used for the analysis. In qualitative research, the beginning of the analysis is the ideas that emerge to make sense of the data while it is still in the field (Patton, 2014). Each question asked of the participants in the study was analyzed separately. In the first step, each participant was assigned a code, and the handwritten data from the focus group interviews were analyzed by the researcher using the computer program NVivo 12. It is assumed that the program in question facilitates the coding of data and the creation of themes and categories. In the study, the methods of descriptive analysis and content analysis were used together. To increase the validity of the qualitative data, peer debriefing was preferred in the analysis phase (Creswell, 2014).

Results

Quantitative Findings

This section presents the correlations between students' phubbing behaviours and mental health (depression, anxiety, and stress), multiple regression analysis results, and gender *t*-tests. The study results are presented in the order of the research questions.

Table 2

Normality of Distribution Test

Variables		N	Skewness		Kurtosis	
				Std.		Std.
Phubbing	Nomophobia	305	.061	.140	-.616	.278
	Interpersonal	305	1.381	.140	1.669	.278
	Self-isolation	305	1.361	.140	1.389	.278
	Problem	305	.422	.140	-.514	.278
DASS	Anxiety	305	.746	.140	.079	.278
	Depression	305	.483	.140	-.810	.278
	Stress	305	.752	.140	-.089	.278

From the values given in Table 2, it can be seen that the data are normally distributed in the normality test. The fact that the skewness value used in testing the normality of distribution in studies is between "-1,5 and +1,5" indicates that the values have a normal distribution (Tabachnick & Fidell, 2013). Furthermore, since the histogram and Q-Q plot are close to 45 degrees, the data is assumed to have a normal distribution.

Table 3

Correlation Coefficients for Scales

	1	2	3	4	5	6	7
1.Nomophobia	-						
2.Interpersonal	.535**	-					
3.Self-isolation	.503**	.636**	-				
4.Problem	.519**	.566**	.540**	-			
5.Anxiety	.295**	.336**	.396**	.346	-		
6.Depression	.288**	.289**	.378**	.356	.821	-	
7.Stress	.318**	.270**	.375**	.342	.816	.814	-
$\bar{X}$	16.85	8.75	10.03	10.1	14.1	15.2	1
Ss	5.59	4.83	5.66	4.47	4.85	5.92	5.

**p < .01

Table 3 shows the results regarding the relationship between college students' phubbing behaviour and their mental health (depression, anxiety, and stress), which is the first question of the study. The Pearson correlation analysis for this purpose found a positive and significant relationship between the Phubbing Scale sub-dimensions and the Depression Anxiety Stress Scale (DASS-21). It can be seen that there is a positive and significant relationship between nomophobia, interpersonal conflict, self-isolation, and problem acceptance, the sub-dimensions of the Phubbing Scale, and anxiety, depression, and stress, the sub-dimensions of the DASS-21 Scale.

Table 4

Regression Analysis Results for Phubbing Condition

Variables	B	SH	β	T	P
Constant	25.450	2.240		11.361	.000
Phubbing	.388	.046	.436	8.434	.000
R^2= .190	F= 71.133	P= .000			

Table 4 presents the results regarding the impact of college students' mental health (depression, anxiety, and stress) on phubbing behaviour, which is the second question of the study. For this purpose, the regression results are shown in the table. According to the analysis results, the regression model is statistically significant, and it can be seen that students' mental health (depression, anxiety and stress) explains 19% (R^2= .19) of phubbing behaviour.

Table 5

T-Test Results for Sub-dimensions of Phubbing and DASS (21) Scales by Gender

Variable		Categor	N	$\bar{x}$	Sd	s	t	P
Phubbing	Nomophobia	Female	24	17.16	5.4	303	2.06	.040
		Male	56	15.46	6.1			
	Interpersonal Conflict	Female	24	8.83	4.8	303	.65	.516
		Male	56	8.37	4.8			
	Self-isolation	Female	24	10.03	5.5	303	.00	1.00
		Male	56	10.03	5.9			
	Problem Acceptance	Female	24	10.34	4.4	303	1.71	.088
		Male	56	9.21	4.6			
DASS(21)	Depression	Female	24	14.54	4.8	303	2.95	.003
		Male	56	12.45	4.3			
	Anxiety	Female	24	15.84	5.8	303	3.72	.000
		Male	56	12.64	5.5			
	Stress	Female	24	14.17	5.1	303	2.74	.006
		Male	56	12.12	4.5			

Table 5 shows the results of the *t*-test for independent groups" performed to determine the direction of significance between groups for the gender variable, which is the third question of the study. According to the results of the analysis, there is a significant difference in the "nomophobia sub-dimension "phubbing" ($t= 2.06$, $p< .05$). The sub-dimensions "Interpersonal Conflict" ($t= .65$, $p> .05$), "Self-isolation" ($t= .00$, $p> .05$) and "Problem Acceptance" ($t= 1.71$, $p> .05$) showed no significant difference. A significant difference was found between the sub-dimensions of "DASS-21", anxiety ($t= 2.95$, $p< .05$); depression ($t= 3.72$, $p< .05$) and stress ($t= 2.74$, $p< .05$) gender-specific variables. Accordingly, it can be said that female students experience more nomophobia, anxiety, depression, and stress than male students.

Qualitative Findings

As part of the focus group interview guide created in the research, questions were asked about the frequency of participants' phone use. With this in mind, one of the participants used the phrase, "I use it all the time; I check it every 5-10 minutes [P1]." Similarly, another participant said, "I use the phone all the time except when I sleep [P6]." Another participant responded, "....I look at the screen when bored [P3].". In general, it appears that participants spend most of their time on the smartphone or need to look at the screen all the time.

As part of the focus group interview guide, participants were asked questions about what they like to do on their phones. One participant commented: "I usually engage with social media [P1]". Similarly, another participant commented, "I like to engage with social media on the phone [P3]." All participants indicated that they use social media more frequently. Among the social media applications, Instagram is used the most. Besides, it is also indicated that movie and music applications are preferred. It is also indicated that shopping applications such as WhatsApp, Facebook, Twitter and Trendyol are used.

As part of the focus group interview guide, participants were asked why they preferred to use their phones. One of the participants expressed his thoughts as follows, "Usually when I am bored and to spend time... [P1]. Similarly, one participant expressed, "I prefer it because I am bored at home [P10]." Another participant says, "For example, when I am down and want to motivate myself, I spend time on the phone." Some participants stated that they cannot adapt to people and therefore turn to social media. In this sense, they stated, "There are sometimes points where we disagree with people. That is why I prefer to spend time on the phone [P2]," "Spending time on the phone is better than spending time with people [P4]," and "I cut off communication with unnecessary people [P7]." Nevertheless, some participants see the phone as a means to chat with their friends, meet new people, and make new friends. In this sense, they comment: "I chat with my loved ones. I like talking to my friends [P12]," "Meeting people makes me happy [P7]," and "I think I am closer to the people I love [P6]. On the other hand, some students indicate that they use social media to follow what people are doing, with the statement "...I find out where and what people are doing during the day, I get informed about people [P8]."

As part of the focus group interview guide, participants were asked, "How do you feel about talking about something important to you when you see other people interested in their phones?". In general, participants indicated that they get angry and feel worthless, insignificant, and bad. In this sense, they comment: "I get angry. I get angry when people ignore me [P7]." One of the participants expresses his views, "I get nervous... I feel worthless. I think they don't care about me [P2]. Similarly, another participant said, "I usually feel bad, and I would be taken to this situation [P1]".

As part of the focus group interview guide, participants were asked, "Why do you prefer to be on your phone while chatting with someone?" Most participants indicated that they do not care about the phone in the chat environment and do not think phubbing behaviour is right. However, they state that they only pick up the phone briefly for important matters or urgent notifications. Participants express their opinions: "I generally do not like to talk on the phone while chatting. Because I think it makes the other person feel bad [P1]," "I do not bother with the phone while chatting with someone [P3]," and "I turn on the screen when an important call or message comes in [P4]." In addition, some participants state that they are busy with their smartphones when their conversation partner's conversation is uninteresting. Participants commented as follows: "When the other person's conversation is not finished, when it is useless, I play on the phone; I do not listen to the other person... [P8]" and "If the topic does not interest me. Alternatively, I prefer to play with the phone when the person in front of me keeps telling me the same thing [P2]."

As part of the focus group interview guide, participants were asked about the reasons for the individuals' phubbing behaviours. One of the participants said, "...I think they are generally introverts. I think they like to live alone. Generally, they spend much time on social media to be liked [P3]. Another participant stated that "... I feel unfamiliar with the environment, maybe shy and reserved. Individuals use the phrase "the disorder may be anxiety [P11]." Similarly, another participant expressed, ".... I think they have deficits in daily life... [P12]". In addition, most participants believe these people are technology/phone dependent. They express these views as "...because they are addicted... [P2]", "...phone addicts... [P4]", and "...totally phone addicted... [P5]".

During the focus group interview, participants were asked, "Do you think there is a relationship between excessive phone use and anxiety, avoidance, depression, and stress?" One of the participants expressed the following: "...I get stressed, I feel uncomfortable when I am not playing on the phone, but I feel happier and more peaceful when I am playing with my phone [P8]". Another participant comments: "... does not cause depression or stress. It takes away more stress and gives people peace and allows us to spend time faster [K4]." Another participant explained that "... I think people deal with the phone to get away from something [P12]." Another participant stated that he had such a tendency while in psychiatric treatment, "...I take antidepressants, because of this... [K10]". Another participant expressed, "...if I do not talk on the phone for a day or two, I feel very lonely [P5].

Conclusion and Discussion

It can be seen that there is a positive and significant relationship between nomophobia, interpersonal conflict, self-isolation, and problem acceptance, the sub-dimensions of the Phubbing scale, and anxiety, depression, and stress, the sub-dimensions of the DASS-21 scale. However, the state of mental health (depression, anxiety, and stress) of college students are found to predict phubbing behaviour. Studies in the literature support these findings. Some studies show that phubbing indirectly affects depression (Roberts and David, 2016; Wang et al., 2017). Predictors of smartphone and internet addiction are strongly correlated with depression and stress variables that put participants at high risk for phubbing (Davey et al., 2018). Ivana et al., (2020) suggest that depressed mood and phubbing are statistically significantly related. It was concluded that depression and stress variables that are highly correlated as predictors of smartphone and internet addiction pose risks to participants with high levels of phubbing (Davey et al., 2018).

Studies show that individuals with high anxiety levels phubbing more to control their anxiety levels in social interactions (Davey et al., 2018; Guazzini et al., 2019). Nonetheless, people with high social anxiety use online communication tools as an alternative to face-to-face interaction (Caplan, 2007). A study by Yen et al. (2012) found that social anxiety and stress were lower during online chat, while anxiety levels increased during face-to-face interactions. In the focus interview conducted in the current study, participants expressed similar views. Along these lines, one participant stated, "...I may feel foreign to the environment, I may be shy and reserved. Individuals use the phrase "the disorder may be anxiety [P11]." However, in the interview, individuals who exhibit phubbing are said to be introverted, have high anxiety levels, have a negative self-image, and have poor communication skills.

In a study by Berry et al. (2017), it is stated that people tend to be constantly engaged with their smartphones to escape negative feelings and manage stress. In a study by Gezgin (2019), participants state they feel lonely, incomplete, and quite unhappy when not using a smartphone. Participant opinions in our current study also support these findings. Participants said, "…"...I get stressed. I play on my phone when I feel uncomfortable, I feel happier and more peaceful [P8]," "...it does not cause depression or stress. It relieves more stress and gives people peace and allows us to spend time faster [P4]," "...I think people use the phone to get away from something [P12]," and "...I feel very lonely when I spend a day or two away from the phone [P5]," are comments. Accordingly, individuals use smartphones in negative situations, such as stress. It is believed that this situation results from the desire to create a safe space where they can escape negative situations and feel happy and peaceful.

In examining the literature, it appears that fear of missing the news has a positive and significant relationship with phubbing, both directly and indirectly, as it is related to problematic social media use, is a strong predictor of phubbing, and emotional support from social media plays a mediating role in the relationship between phubbing and fear of missing out (Al-Saggaf and O'Donnell, 2019; Blanca and Bendayan, 2018; Fang, Wang, Wen and Zhou, 2020; Franchina et al., 2018). Fear of missing out and smartphone and Internet addiction positively affect phubbing and negatively affect self-control (Chotpitayasunondh and Douglas, 2016). In another study, neglect anxiety, smartphone addiction, internet addiction, and self-control were strong predictors of phubbing (Davey et al., 2018). Balta et al. (2018) concluded that fear of missing situational developments, directly and indirectly, influenced phubbing through problematic Instagram use. Similar conclusions can be drawn from the focus interviews conducted in the current research. Some participants indicated that they follow social media to keep track of developments, with the statements "...I find out where and what people are doing during the day, I find out about people [P8]." Phubbing is thought to increase, especially when the curiosity to follow developments is combined with a factor such as technology addiction.

A study by Phing et al. (2019) suggests people have a psychological addiction to technological devices. In the focus interview conducted as part of the current research, participants say that individuals who exhibit phubbing are addicted. In this sense, participants commented on smartphone use as follows: ""I use it all the time, I look at it every 5-10 minutes [P1]," "I occupy myself with the phone all the time except when I sleep [P6]," and "...I look at the screen when I am bored [P3]."". In general, it can be seen that the participants spend most of their time on the smartphone or feel the need to look at the screen all the time. It is believed that the reason for this lies in the individual's need to socialize and connect with the world. On the other hand, Duradoni et al. (2020) link too much time on social media and interactive environments to various psychiatric disorders.

According to the research findings, although there is a significant difference in the dimension of nomophobia, i.e., the subdimensions of phubbing related to gender, there is no significant difference in the subdimensions of interpersonal conflict, self-isolation, and problem acceptance. Studies in the literature address the concept of phubbing in general. Latifa, Mumtaz, and Subchi (2019) find no difference between men and women in overall phubbing levels. In the study conducted by Guazzini et al. (2019), it was found that phubbing status did not differ by gender. Reviewing the studies that examine the relationship between phubbing and the gender variable, some studies state that there is a difference between males and females in terms of frequency and duration of phubbing, exposure to phubbing, phubbing as a social norm, addiction to social media, text messaging, and cell phones, and internet and gaming addiction (Ballı, 2020). Gender has been found to mediate between exposure to phubbing and phubbing as a social norm, and females are more likely than males to engage in phubbing behaviours for longer periods and are more exposed to phubbing (Chotpitayasunondh and Douglas, 2016). In the study by Bitar et al. (2022), phubbing is more prevalent among females than males. The difference in the nomophobia dimension found in our study is probably due to women's tendency to follow developments and wonder. Curiosity involves inquiry-oriented activities to obtain information about oneself and one's surroundings. In this sense, some studies find that women's curiosity is higher than men's (Bakır and Büyükgöze Kavas, 2021; Deringöl et al., 2010).

There is a significant difference between genders in the sub-dimensions of the DASS-21, namely anxiety, depression and stress. Accordingly, it can be said that female students experience more anxiety, depression, and stress than male students. Depression, anxiety and stress are more common in females in society (DSM-IV TR, 2000). The study by Erşan, Kelleci, and Baysal (2013) found that women have higher levels of depression, anxiety, and stress than men. Several studies show that women's depression, anxiety, and stress scores are higher than men's, especially among college students (Bilgel and Bayram, 2010; Dyrbye, Thomas and Shanafelt, 2006; Rizvi et al., 2015; Roh et al., 2010). The social status of women and the responsibilities or expectations of society may explain this situation. However, some studies conclude no significant difference in mean depression, anxiety, and stress scores between women and men (Aboalshamat, 2017; Arslan, Aktar and Danaoğlu, 2011; Öncü et al., 2013; Üstün and Bayar, 2015).

A study conducted by Nazir and Pişkin (2016) concluded that people who frequently look at their phones during a face-to-face conversation are perceived as not concentrating on the conversation themselves or not concentrating enough. A study conducted by Karadağ et al. (2016) found that individuals subjected to phubbing react with negative thoughts and experience feelings of anger and worthlessness since they cannot make eye contact with their conversation partners. Also, in our current study, participants indicate that they become angry and feel worthless, insignificant, and bad when exposed to phubbing. In this sense, "I get angry. I get angry because I am being ignored [P7]", "I get angry... I feel worthless. I think they don't care about me [P2]" and "I usually feel bad, and I would be taken to this situation [P1]". As a result, the person exposed to phubbing in the social environment (work, school, entertainment, etc.) may experience negative emotions and feel sad about this situation (Ergün et al., 2020). These feelings can negatively impact a person's mental health.

In AlSaggaf, MacCulloch, and Weiner's (2019) study, the variable "boredom" is shown to be a statistically significant predictor of phubbing. Participant comments in our current study also support this finding. Participant comments such as "....I look at the screen when I am bored [P3]," "Usually when I am bored and to spend time... [P1]" and "...I prefer it because I am bored [P10]" show that boredom is an effective factor. In addition, some participants state that they are busy with their smartphones when their conversation partner's conversation is uninteresting. Participants commented as follows: "When the other person's conversation is not finished, when it is useless, I play on the phone; I do not listen to the other person... [P8]" Or I prefer to deal with the phone when the person in front of me keeps telling the same thing [P2]". In this sense, it is suggested that individuals tend to be phubbing when bored in the social environment or when the interactions do not attract attention.

Suggestions

This section provides several suggestions for researchers based on the research findings.

➢ In this study, the relationship between phubbing and mental health was discussed. In future research, new studies can be conducted on communication skills and these skills and different variables.

➢ The research can be designed to include the variables of perceived social support, close friendship or partner relationship, and relationship satisfaction with phubbing.

➢ In contrast to this cross-sectional and scanning study, a longitudinal study of change in phubbing over time can be conducted.

➢ This study was conducted with college students. Considering that technology and today's distance education system can cause some technology addiction in children, similar studies can be conducted with children and adolescents.

➢ Taking into account the time that the use of technology takes up in daily routines, studies can be conducted on making individuals aware of time management and proper use of technology.

➢ A study can be conducted on obsession and loneliness related to phubbing.

Ethic

It should be stated which ethics committee approval was obtained from the research data. (Date, Number of Board Decisions)

Author Contributions

This article was written with the joint contributions of two authors.

Conflict of Interest

The authors declare that they have no conflict of interest.

Funding

No scholarships or payments have been received from any institution for this article.

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