



The Mediator Role of Interaction Anxiety in the Relationship between Social Support Perception and Smartphone Addiction*

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Abstract

Preservice teachers prepare for a profession that requires intense communication and interaction. They are expected to gain competencies in their profession in this process. These competencies include the technical knowledge particular to the profession, and communication and social skills. It is thus important to investigate the factors that affect the academic and social interaction, the learning environment and the psycho-social development of university students, and in particular, preservice teachers. This study aims to investigate the relationship among preservice teachers' social support perceptions, interaction anxiety and smartphone addiction. The students from the faculty of education and the students with the pedagogical formation training in İnönü University during the 2017-2018 academic year constituted the population of the study and the participants were 496 preservice teachers who were selected from this population using the random sampling technique. Hypotheses were developed to investigate the relationship among the research variables. After testing the hypotheses, the results indicated that the preservice teachers' social support perceptions and interaction anxiety significantly predicts their smartphone addiction, that their social support perceptions significantly predict their interaction anxiety, and that their interaction anxiety has a mediator effect on the relationship between their social support perceptions and smartphone addiction.

Keywords: Social support perception, interaction anxiety, smartphone addiction, preservice teachers.

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Sosyal Destek Algısı ve Akıllı Telefon Bağımlılığı İlişkisinde Etkileşim Kaygısının Aracılık Rolü*

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Öz

İletişim ve etkileşimin yoğun olduğu bir mesleğe hazırlanan öğretmen adaylarından, bu süreç içerisinde meslekleriyle ilgili yeterlikleri kazanmaları beklenmektedir. Bu yeterlikler içerisinde, mesleğe ve alanlarına özgü teknik bilgilerin yanında iletişim ve sosyal beceriler de yer almaktadır. Bu kapsamda üniversite öğrencilerinin, özelde ise öğretmen adaylarının akademik ve sosyal entegrasyonunu, öğrenme çevrelerini ve piko-sosyal gelişimlerini etkileyen çeşitli faktörlerin araştırılması önem kazanmaktadır. Bu çalışmada, öğretmen adaylarının sosyal destek algılarıyla etkileşim kaygıları ve akıllı telefon bağımlılıkları arasındaki ilişkiyi incelemek amaçlanmıştır. Araştırmanın evrenini 2017-2018 eğitim-öğretim yılında İnönü Üniversitesinde eğitim görmekte olan eğitim fakültesi öğrencileri ve pedagojik formasyon eğitimi alan öğrenciler, örneklemini ise bu evrenden seçkisiz örnekleme yöntemiyle belirlenen 496 öğretmen adayı oluşturmaktadır. Araştırma değişkenleri arasındaki ilişkilere yönelik denenceler oluşturulmuştur. Denencelerin sınanması sonucunda öğretmen adaylarının sosyal destek algılarının ve etkileşim kaygılarının akıllı telefon bağımlılıklarını anlamlı bir şekilde yordadığı, sosyal destek algılarının etkileşim kaygılarını anlamlı bir şekilde yordadığı, sosyal destek algılarıyla akıllı telefon bağımlılıkları arasındaki ilişkide etkileşim kaygılarının aracılık etkisi olduğu sonuçlarına ulaşılmıştır.

Anahtar Sözcükler: Sosyal destek algısı, etkileşim kaygısı, akıllı telefon bağımlılığı, öğretmen adayı.

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Introduction

One of the most important characteristics that separate humankind with skills of foreseeing the future and making plans for the future from other living things is their ability to transform their information into technologies that facilitate their lives. Artificial intelligence has been discussed today where rapid changes in technology have been experienced and it is predicted that artificial intelligence will take place in several areas of our lives in near future. In fact, we have already begun to describe many of the technological tools we use as “smart.” The advancements in the information and communication technologies underlie the technological advancements. Constantly and rapidly updated, information and communication technologies have considerably changed our lifestyles and become an inseparable part of our lives (Salehan & Nagehban, 2013).

As technologies have changed rapidly, they have become more practical and smaller. Smartphones have become an indispensable part of the lives of people in all age groups (Takao, Takahashi & Kitamura, 2009). Smartphones not only take the place of phones, but also personal computers and other tools to some extent (Salehan & Nagehban, 2013; Samaha & Hawi, 2016). Beyond having the features of making phone calls and sending messages, smartphones can be used to access the internet, send e-mails, provide navigation services, share pictures and videos, play music, watch films, download games, participate in social media, shop and manage finances (Gökçearsan, Mumcu, Haşlamam & Çevik, 2016; Kuyucu, 2017; Sapacz, Rockman & Clark, 2016).

As well as the advantages of being lightweight and compact enough to fit easily into a bag or pocket (Elhai, Dvorak, Levine & Hall, 2017), smartphones also have disadvantages (Çakır & Oğuz, 2017; Park, 2005). In particular, their gradual elimination of temporal and spatial limitations and the uncontrolled increase in obsessive use of them have led to coining the term, smartphone addiction (Al-Barashdil, Bouazza & Jabur, 2015; Hong, Chiu & Huang, 2012; Lepp, Barkley & Karpinski, 2014; Park, 2005; Park & Lee, 2012; Samaha & Hawi, 2016). Even though smartphone addiction is described in different ways such as problematic mobile phone use, excessive use and obsessive use (Kardefelt & Winther, 2014; Kim & Byrne, 2011), all these descriptions indicate a form of overuse that causes individuals to neglect other areas of life (Barashdil et al., 2015).

Smartphone addiction refers to obsessive smartphone use that is difficult to control and negatively affects other areas of life (Park & Lee, 2012). Many researchers considered the smartphone addiction as a behavioral addiction in the context of obsessively exhibiting a behavior (Lemon, 2002; Takao et al., 2009). Smartphone addicts are likely to exhibit these behaviors (Lee, Chang, Lin & Cheng, 2014):

- 1) Always being busy with the phone,
- 2) Increasing phone use to get satisfaction from the phone,
- 3) Failing to stop, pause or attempt to control using the phone,
- 4) Feeling discomfort about attempts to reduce phone use,
- 5) Jeopardizing important relationships, and education and career opportunities due to the phone use,
- 6) Using the smartphone as a tool to alleviate hearing problems, depression, anxiety and, hopelessness.

Addiction can cause great harm to society and individuals by affecting work and learning (Park, 2005). The fact that smartphones are always accessible distinguishes this addiction from other addiction types, and this addiction is a threat to individuals and society (Kahyaoğlu-Süt, Kurt, Uzal & Özdilek, 2016). Such behavioral addictions have not only side effects (Yen et al., 2009), but also psychological and physical effects such as hand and neck pain, sleep problems and visual disorders (Kuyucu, 2017). Studies of adolescents and university students' smartphone addiction have reported: that problematic phone use is a function of an extrovert personality type (Salehan & Nagehban, 2013), that there are significant relationships between smartphone addiction and negative emotions (Chen et al., 2016), that social extroversion and anxiety increase smartphone addiction (Hong et al., 2012), that

smartphone addiction negatively affects academic performance (Jacobsen & Forste, 2011; Samaha & Hawi, 2016; Seo, Park, Kim & Park, 2016), and that smartphone addiction can cause depression and anxiety, which in turn can result in sleep disorders (Demirci, Akgönül & Akpınar, 2015).

These results indicate that smartphone addiction negatively affects individuals' personal and social lives. Therefore, it is of critical importance to investigate smartphone use, which is particularly common among university students, with the risk of turning into an addiction that can negatively affect their social, professional and academic performance and to examine the factors that affect their smartphone use. This study investigated the relationship of preservice teachers' smartphone addiction, which was reported to affect university students' personal, social, and academic development, with their social support perception and interaction anxiety.

Relationship between Social Support Perception and Smartphone Addiction

Social support is defined as the social support behaviors that individuals receive from other individuals and social networks (Heller, Swindle & Dusenbury, 1986). Yıldırım (1997) defined social support as the social and psychological support individuals obtain from their environment. The accessibility of supporting individuals and the personal satisfaction obtained from real support are two important dimensions of perceived social support (Kitamura, Watanabe Takezaki & Tanaka, 1999), and the satisfaction obtained from a social support rather than its quantity is determinative for individuals.

Social support perception has mental and physical benefits (Cohen & Wills, 1985). Social support is a human need because people are social beings. The perception of this need being met has positive effects on individuals. Stress, anxiety and addictive behaviors are more common for people who lack support and feel lonely. Studies have reported a significant relationship between smartphone addiction, which is considered a behavioral addiction, and loneliness (Caplan, 2006; Çakır & Oğuz, 2017; Şar, 2013; Tan, Pamuk & Döner, 2013). Social isolation, which is closely related to social support perception, stems from inadequate relationships in social networks or the inability to become a member of a social network in which similar interests or activities are shared. This problem can be eliminated by accessing an environment where individuals can reach satisfaction (Çakır & Oğuz, 2017). Social isolation causes behavioral addictions such as internet and smartphone addiction. A relationship that is similar to the one between loneliness and the smartphone addiction is thought to be present between social support perception and smartphone addiction. The lack of support is one of the sources of individuals' sense of loneliness. Based on the relevant theoretical information and the results of studies, this study's hypothesis is that preservice teachers' social support perceptions significantly predict their smartphone addiction in a negative way.

The Relationship between Social Support Perception and Interaction Anxiety

Social anxiety is the behavioral tendency to withdraw from social interactions due to internal conflict or excessive fear (Rubin, Coplan & Bowker, 2009). In DSM 5, social anxiety disorder is defined as evident persistent fear that emerges in social settings, situations requiring a performance, or in front of unknown people (American Psychiatry Association, 2013).

Studies investigating the relationship between the social support perception and interaction anxiety (Baltacı, 2010; Baltacı, İşleyen & Özdemir, 2012; Huber, 2016) reported that individuals' social anxiety level increases as their support perception decreases. It was also put forward that the social support perception has mental and physical benefits (Cohen & Wills, 1985). Therefore, it can be asserted that individuals receiving enough support from their social environment can establish meaningful relationships, less experience psychological problems, or are able to overcome such problems more quickly. Individuals' social support sources can be investigated in order to reveal the relationship between the social support perception and interaction anxiety.

Based on the relevant theoretical information and the results of studies, this study's hypothesis is that preservice teachers' social support perceptions significantly predict their interaction anxiety in a negative way.

The Relationship between Interaction Anxiety and Smartphone Addiction

According to Lee et al. (2014), social interaction anxiety and the need for interaction increase the need for phone use and the pressure to use. This relationship also increases trust in smartphones. In other words, smartphones can be used a tool to meet individuals' need for interaction. Interaction with smartphones is less sincere than face-to-face interaction. This difference can decrease anxiety during interaction with others since it enables people to think more about every reply in a conversation. King et al. (2013) found that smartphones can make individuals with social anxiety to feel safe in social settings. Individuals use smartphones to interact with others due to lack of trust and shyness in face-to-face communication (Walsh, White & Young, 2007). Barashdil et al. (2015) found that smartphones with various features can serve as an effective way for shy students to communicate with others.

Many studies of this issue have highlighted a significant relationship between social anxiety and smartphone addiction (Bianchi & Phillips, 2005; Elhai et al., 2017; Lepp et al., 2014; Sapacz et al., 2016; Yılmaz, Car & Şivan, 2015). On the other hand, some studies found no significant relationship between these variables (Harwood, Dooley, Scott & Joiner, 2014; Whiteside & Lynam, 2001).

Based on the relevant theoretical information and the results of studies, this study's hypothesis is that preservice teachers' interaction anxiety significantly predicts their smartphone addiction in a positive way.

The Mediator Effect of Interaction Anxiety

The previous sections discussed the relationship among the research variables and indicated a strong relationship between interaction anxiety and smartphone addiction. The results of this study suggest that interaction anxiety has a mediator effect, which is also closely related to social support perception and smartphone addiction. Many studies have indicated that social support perception can serve as a buffer to prevent the development of anxiety, depression and loneliness (Rubin et al., 2006; Terzi, 2008). Behaviors that can be described as addiction are particularly common in individuals with psychological problems.

Based on relevant theoretical information and the results of studies, this study's hypothesis is that preservice teachers' interaction anxiety has a mediator effect on the relationship between their social support perceptions and smartphone addiction.

The Purpose and Importance of the Study

Studies have shown that the smartphone addiction has important effects on university students' academic achievement, personal lives and social interactions. High-level smartphone addiction has been reported to decrease university students' level of self-regulation in learning, to influence their study flow negatively, to prevent their academic studies, to cause them to be busy with other activities while studying and to decrease their academic performance (Lee, Cho, Kim & Noh, 2015).

Preservice teachers prepare for a profession that requires intense communication and interaction. They are expected to gain competencies in their profession in this process. These competencies include the technical knowledge particular to the profession, and communication and social skills. It is thus important to investigate the factors that affect the academic and social interaction, the learning environment and the psycho-social development of university students, and in particular, preservice teachers. This study aimed to investigate the relationships among preservice teachers' social support perception, interaction anxiety and smartphone addiction.

Method

This study was designed as a relational survey. Relational survey is a research method that aims to investigate the presence and/or the degree of covariance between two or more variables (Cohen, Manion & Morrison, 2007; Fraenkel & Wallen, 2003).

Based on the theoretical knowledge and the results of similar studies, hypotheses about the relationship among the preservice teachers' social support perceptions, interaction anxiety, and smartphone addiction were developed, and a model was proposed. The model is shown in Figure 1.

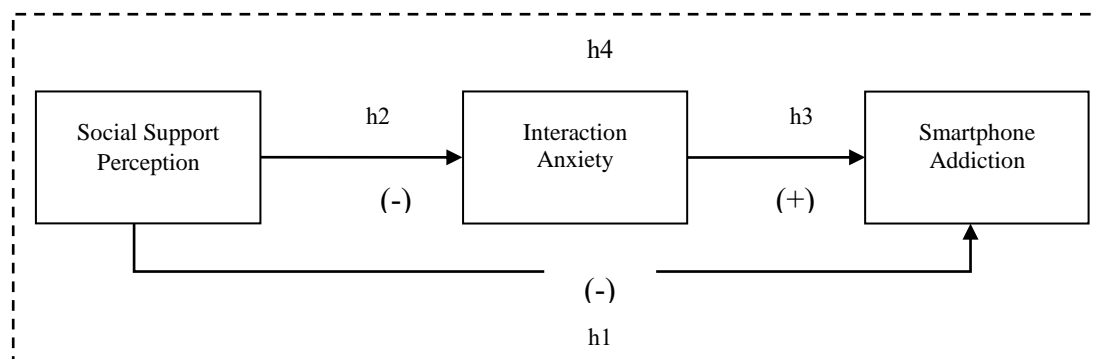


Figure 1. *The Proposed Model*

Hypothesis 1 (h1): Preservice teachers' social support perceptions significantly predict smartphone addiction in a negative way.

Hypothesis 2 (h2): Preservice teachers' social support perceptions significantly predict their interaction anxiety in a negative way.

Hypothesis 3 (h3): Preservice teachers' interaction anxiety significantly predicts their smartphone addiction in a positive way.

Hypothesis 4 (h4): Preservice teachers' interaction anxiety has a mediator effect on the relationship between their social support perceptions and smartphone addiction.

Research Sample

The students in the faculty of education and pedagogical formation training at İnönü University during the 2017-2018 academic year constituted the population of the study. The participants were 496 preservice teachers who were selected from this population using random sampling.

Of the participants, 75.4% (374) were female, and 24.6% (122) were males. Of them, 23.6% were in the faculty of education, and 76.4% were in pedagogical formation training.

Research Instruments and Procedures

In addition to a personal information form, the following scales were used in the study:

The smartphone addiction scale-short form (SAS-SF)

Developed by Kwon et al., (2013) and adapted into Turkish by Noyan, Enez Darçın, Nurmedov, Yılmaz and Dilbaz (2015), this scale consists of 10 six-point Likert-type items and a single-factor structure. Scores on the scale range from 10 to 60. Higher scores indicate increased the risk of addiction. Noyan et al. (2015) found the Cronbach's alpha coefficient of the scale to be .86. The Cronbach's alpha coefficient of the scale was .91 in this study.

The interaction anxiety Scale (IAS)

The scale was developed by Leary and Kowalski (1993) and adapted into Turkish by Coşkun (2009). It consists of 15 five-point Likert-type items. It has a single-factor structure, and items 2, 3, 6, 10 and 15 are scored reversely. High scores on the scale indicate increased social interaction anxiety. Coşkun (2009) found the Cronbach's alpha coefficient of the scale to be .91. The Cronbach's alpha coefficient of the scale was .88 in this study.

The multidimensional scale of perceived social support (MSPSS)

Developed by Zimet et al. (1988, 1990), and adapted into Turkish by Eker, Arkar, and Yadız (2001), this scale consists of 12 seven-point Likert-type items. Higher scores on the scale indicate

stronger perceived social support. While Eker et al. (2001) found the Cronbach's alpha coefficient of the scale to be .89, it was .85 in this study.

Data Analysis

Descriptive statistics, correlation analysis, simple linear regression analysis, hierarchical regression analysis and the Sobel test were used to analyze the data. Prior to the analyses, the univariate and multivariate normality assumptions were investigated.

Within the scope of the univariate normality assumptions, the skewness and kurtosis coefficients were calculated. Coefficient values between -1 and +1 indicate a normal distribution (Çokluk, Şekercioğlu & Büyüköztürk, 2012). Within the scope of the multivariate normality, the tolerance and VIF values were investigated. A VIF value less than 10 and a tolerance value greater than 0.2 indicated that there was no multiple linear correlation (Field, 2005; Can, 2014). The results of these tests are shown in Table 1.

Table 1

The Skewness, Kurtosis, Tolerance and Vif Values of the Research Variables

Variable	Skewness	Kurtosis	Tolerance	VIF
Social Support Perception	-0,118	0,241	0,47	4,88
Interaction Anxiety	0,262	-0,565	0,51	3,99
Smartphone Addiction	-0,618	-752	0,36	5,72

Table 1 shows that the skewness and kurtosis values were within the range of the limit values (-1, +1), and that no multiple linear correlation was found among the research variables according to the tolerance (>.02) and VIF (<.10) values. The normality assumptions for conducting the analyses were met.

Results

This section presents the results of the descriptive analyses of the preservice teachers' social support perception, interaction anxiety and smartphone addiction, and the results of testing this study's hypotheses.

Results for Descriptive Statistics

Write down the results about the research question without changing the format. Write down the results about the research question without changing the format.

The descriptive statistics results for the preservice teachers' social support perception, interaction anxiety and smartphone addiction are shown in Table 2.

Table 2

Descriptive Statistics Results for the Research Variables

Variable	X	SD	Minimum	Maximum	1	2	3
1. Social Support Perception	63,88	3,46	7	84	-		
2. Interaction Anxiety	41,38	5,12	15	75	-.344**	-	
3. Smartphone addiction	27,98	2,21	10	60	-.136**	.251**	-

**P<.01

Table 2 shows that the preservice teachers had higher than moderate levels of social support perceptions (X=63.88), and that they had moderate levels of interaction anxiety (X=41.38) and smartphone addiction (X=27.98). The results for the relationship among the variables indicated a negative significant relationship between the preservice teachers' social support perceptions and smartphone addiction (r=-.13, p<.01), a negative significant relationship between their social support

perceptions and interaction anxiety ($r=-.34$, $p<.01$), and a positive significant relationship between their interaction anxiety and smartphone addiction ($r=.25$, $p<.01$).

Results for the Hypotheses of the Study

Simple linear regression analysis was conducted to test the first, second and third hypotheses of the study. Hierarchical regression analysis was used to test the fourth hypothesis about the mediator effect.

Results for the first hypothesis of the study

The first hypothesis of the study was that preservice teachers' social support perceptions significantly predict their smartphone addiction in a negative way. The results of the simple linear regression analysis carried out to test this hypothesis are shown in Table 3.

Table 3

Regression Analysis Results for Social Support Perception's Prediction of Smartphone Addiction

Variable	B	S. Error	β	t	Sig.
Constant	34.818	2.298		15,154	.000
Social Support Perception	-0.107	0.035	-0.136	-3.048	.002
R=.13, R2=.01					
F (1.494)=9.290, P=.002					

Table 3 shows that the preservice teachers' social support perceptions significantly predicted their smartphone addiction in a negative way ($\beta=-.136$, $p<.05$). Based on these results, the first hypothesis of the study was confirmed, and the preservice teachers' social support perception was found to have a significant effect on their smartphone addiction.

Results for the second hypothesis of the study

The second hypothesis of the study was that the preservice teachers' social support perceptions significantly predict their interaction anxiety in a negative way. The results of the simple linear regression analysis carried out to test this hypothesis are shown in Table 4.

Table 4

Regression Analysis Results for Social Support Perception's Prediction of Interaction Anxiety

Variable	B	S. Error	β	t	Sig.
Constant	55.706	1.801		30.93	.000
Social Support Perception	-0.136	0.028	-0.344	-8.142	.000
R=.34, R2=.11					
F(1.494)=66.299, P=.000					

Table 4 shows that the preservice teachers' social support perceptions significantly predicted their interaction anxiety in a negative way ($\beta=-.344$, $p<.05$). Based on these results, the second hypothesis of the study was confirmed, and the preservice teachers' social support perception was found to have a significant effect on their interaction anxiety.

Results for the third hypothesis of the study

The third hypothesis of the study was that preservice teachers' interaction anxiety significantly predicts their smartphone addiction in a positive way. The results of the simple linear regression analysis carried out to test this hypothesis are shown in Table 5.

Table 5*Regression Analysis Results for Interaction Anxiety's Prediction of Smartphone Addiction*

Variable	B	S. Error	β	t	Sig.
Constant	15.395	2.23		6.903	.000
Interaction anxiety	0.304	0.053	0.251	5.775	.000

R=.25, R2=.06
F(1.494)=33.352, P=.000

As Table 5 shows, the preservice teachers' interaction anxiety significantly predicted their smartphone addiction in a positive way ($\beta=.251$, $p<.05$). Based on these results, the third hypothesis of the study was confirmed, and the preservice teachers' interaction anxiety was found to have a significant effect on their smartphone addiction.

Results for the fourth hypothesis of the study

The fourth hypothesis of the study was that preservice teachers' interaction anxiety has a mediator effect on the relationship between their social support perceptions and smartphone addiction. In order to mention a mediator effect of a third variable in the relationship between two variables, the following conditions should be met (Baron & Kenny, 1986; Karagöz, 2016):

- 1) The independent variable should have an effect on the dependent variable.
- 2) The independent variable should have an effect on the mediator variable.
- 3) The mediator variable should have an effect on the dependent variable.
- 4) When the mediator variable is included in the model along with the independent variable, the effect of the independent variable on the dependent variable should decrease, while the effect of the mediator variable on the dependent variable should be significant.

Under these conditions, it was determined that the independent variable (social support perception) had a significant effect on the dependent variable (smartphone addiction) (Table 4), that the independent variable (social support perception) had a significant effect on the mediator variable (interaction anxiety) (Table 5), and that the mediator variable has a significant effect on the dependent variable (Table 6).

Hierarchical regression analysis was conducted to test the fourth condition. The results are shown in Table 6.

Table 6*Hierarchical Regression Analysis Results for Smartphone Addiction*

Steps		B	S. Error	β	t	sig.
1. Step	Constant	34.818	2.298		15.154	.000
	Social Support Perception	-0.107	0.035	-0.136	-3.048	.002
2. Step	Constant	19.18	3.845		4.988	.000
	Social Support Perception	-0.04	0.037	-0.06	-1.21	.228
	Interaction Anxiety	0.281	0.056	0.232	5.01	.000

Table 6 shows that when interaction anxiety, the mediator variable, was included in the model in the second step, the standardized regression coefficient of the social support variable decreased significantly ($\beta=-0.6$, $p>.05$), and the effect of social support perception on the smartphone addiction became insignificant. The significance of the decrease in the standardized regression coefficient was investigated using the Sobel test. The results of the test indicated that the mediator effect is significant ($Z=4.41891$, $p<.001$). It was also determined that interaction anxiety affected smartphone addiction ($\beta=.232$, $p<.05$). The literature interprets the disappearance of the independent variable's significant effect as a full mediator effect (Baron & Kenny, 1986; Holmbeck, 1997). In this case, the interaction

anxiety played a full mediator role in the relationship between social support perception and smartphone addiction.

These results indicate all the conditions for the mediator effect were met. Therefore, the hypothesis indicating that preservice teachers' interaction anxiety has a mediator effect on the relationship between their social support perceptions and smartphone addiction was confirmed.

Discussion, Conclusion and Recommendations

The results of the study indicated that the preservice teachers had higher than moderate levels of social support perception and moderate levels of interaction anxiety ($X=41.38$) and smartphone addiction ($X=27.98$). All of the hypotheses based on theoretical knowledge and the results of similar studies were confirmed.

In the study, the preservice teachers' social support perceptions were found to significantly predict their smartphone addiction in a negative way. Even though there is a limited number of studies in the literature that focus on the relationship between social support perception and smartphone addiction, studies of the relationship between loneliness and smartphone addiction (Çakır & Oğuz, 2017; Öztunç, 2013; Reid, 2007) have highlighted significant relationships between these two variables. Taşdemir (2016) found that students' levels of internet addiction increase as their loneliness levels increase, and that their loneliness levels increase as their levels of social support perception decrease. Low levels of social support perceived by individuals can be regarded as a source of loneliness. Addictive behaviors are more common in individuals with low levels of social support perception, as in the sense of loneliness. This study's results are consistent with those of other studies in the literature.

Another result of the study is related to the relationship between social support perception and their interaction anxiety, and indicated that the preservice teachers' social support perceptions significantly predict their interaction anxiety in a negative way. This result is consistent with those of similar studies (Baltacı, 2010; Baltacı, et al., 2012). Individuals who receive enough support from the social environment have a wider social environment. Individuals social support resources increase as their social environment enlarges. Therefore, it becomes more likely for them to get support when they need it, and the significant effect of social support perception on the interaction anxiety is an expected result.

The results of the study indicated that the preservice teachers' interaction anxiety significantly predicted their smartphone addiction. Various studies have found similar results (Bianchi & Phillips, 2005; Elhai et al., 2017; Lepp et al., 2014; Yılmaz et al., 2015). In particular, shy and socially anxious individuals tend to meet their social needs with mediators. They feel safe in this way, and smartphones become an important tool that fulfills this mediator function. This situation can cause smartphone addiction in individuals with interaction anxiety.

The analyses of the mediator effect found a full mediator role of the preservice teachers' interaction anxiety in the relationship between their social support perceptions and smartphone addiction. It is noteworthy that no studies were found in the literature that investigates the mediator effect of interaction anxiety in the relationship between preservice teachers' social support perception and smartphone addiction.

It is clear that interaction anxiety, which has a significant relationship with both social support perception and smartphone addiction, has a mediator effect, as this study confirmed. This result can be interpreted to mean that the preservice teachers' low social support perceptions affect their interaction anxiety, thereby increasing their smartphone addiction levels. In this case, preservice teachers' smartphone addiction is a result of their interaction anxiety, rather than a result of their social support perceptions.

The teaching profession requires particular knowledge and skills, and preservice teachers are expected to acquire them during their education. However, the results of the study show that physical and mental health as well as smartphone addiction negatively affect their academic performance. It should be considered that the frequency and level of smartphone use of preservice teachers being

trained for a profession that requires excellent communication and social interaction skills may also have the risk of turning into a source of problems in their profession.

Based on the results of this study, the researchers recommend:

- 1) Providing preservice teachers with seminars regarding self-regulation can be beneficial in smartphone use and time management.
- 2) Preservice teachers should be informed about the physical and psychological effects of smartphone use.
- 3) Activities such as anxiolytic or preventive therapy should be held individually or collectively for preservice teachers with interaction anxiety.
- 4) Preservice teachers should be helped to form supportive environments. When needed, activities such as peer guidance, group activities and orientations should be organized.
- 5) With activities to be carried out during the learning process, preservice teachers should establish good relationships with their immediate environment (family and relatives) and their social environments (friends and activity groups), and these relationships will reduce their interaction anxiety.

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