

Anyone with A Charger? Correlation of Nomophobia, Leisure Boredom and Quality of Life in Youth at University

Hamdi Alper GÜNGÖRMÜŞ¹, Yavuz YILDIZ², Harun AYTEMUR³, Veli Ozan ÇAKIR⁴ and Elvan Deniz YUMUK⁵

Abstract

Aim: Along with affecting our daily lives and habits majorly, rapidly developing technology is known to increase the leisure boredom of youth in case they stay away from the technology. The fear of staying away from smartphones which is the most important material of portable technology is described as a recent disturbance and even a “a disorder of the modern world” (King et.al., 2010). In order for smartphones which have a significant place to meet the needs of life with aims such as pandemics, earthquakes etc. not to become an illness, it is important to investigate the reasons behind it. Considering these, the aim of the current study is to compare the digital game addiction, leisure boredom and quality of life of the students of Alanya Alaaddin Keykubat University in terms of different variables and to evaluate the correlation and effect sizes of these scales. Method: The study group consists of 405 university students (Meanage = 21.71 ± 4.13) studying at Alanya Alaaddin Keykubat University 239 of which are female (Meanage = 21.69 ± 4.30) and 166 of which are male (Meanage = 21.74 ± 3.88). As data collection tool, Leisure Boredom Scale (LBS) (Iso-Abola & Weissinger 1990; Kara et.al, 2014), Nomophobia Scale (NFS) (Yıldırım & Correia 2015; Yıldırım et.al, 2016) and Quality of Life Scale – Short Form (QOL-SF) (Eser et.al, 2010) were used. In the analysis of the obtained data, descriptive statistics, t-test, ANOVA, Pearson Correlation and regression tests were used. To determine the reliability of scales, Cronbach Alpha intern coefficients were calculated. Findings: When the analysis results were evaluated, it is determined that there is a statistically significant difference in the total scores of LBS, NFS and QOL-SF in terms of “having difficulty in evaluating leisure”, “participation frequency in physical activity” and “evaluating oneself as smartphone addict”. Also, it is determined there is a statistically significant difference in the total scores of LBS and NFS in terms of “use of smartphone times/hour” (p<0.01). According to the Pearson correlation analysis, there is a positive and medium level correlation between NFS and LBS whereas there is a negative and low level of correlation between NFS and QOL-SF. Also, there is a negative and medium level of correlation between LBS and QOL-SF. The data showed that NFS has a negative impact on QOL-SF LBS has a negative impact on QOL-SF, and NFS has a positive impact on LBS. Conclusion: It is concluded that the group which has no difficulty in making use of leisure, who participates in physical activity regularly, who has less connection with their smartphones and who doesn't see themselves as smartphone addicts have lower levels of leisure boredom perception and nomophobia whereas they have higher levels of quality of life. The fear of losing connections increases the level of boredom perception in students and it decreases the quality of life. Also, quality of life decreases due to the increase in boredom perception.

Keywords: *Nomophobia, Boredom Perception, Quality of Life*

INTRODUCTION

Recreational activities are known to provide benefits to the participants (Üstgörül, 2021). These can be in different shapes and types such as physiological, psychological and social (Yumuk & Güngörmüş, 2023). The quality of life is described by the position where an individual stands in terms of context, culture, and value system (World Health Organization, 2019). One of the benefits of participating in the recreational activities in leisure is obtaining the quality of life. The bottom-up theory shows that individuals gradually reach the quality of life. At first, participants of leisure activities gain event satisfaction; when they continue to participate in the events, they gain domain specific satisfaction (leisure, work, family); finally, they obtain life satisfaction which eventually end in the quality of life (Chen et.al., 2010; Tunar et al., 2017; Ozavcı, 2023).

¹ Alanya Alaaddin Keykubat University, Faculty of Sport Science, Alanya, Türkiye. E-mail: hamdi.gungormus@alanya.edu.tr

² Alanya Alaaddin Keykubat University, Faculty of Sport Science, Alanya, Türkiye. E-mail: yavuz.yildiz@alanya.edu.tr

³ Alanya Alaaddin Keykubat University, Graduate School of Education, Alanya, Türkiye. E-mail: harun.aytemur@alanya.edu.tr

⁴ Gazi University, Faculty of Sport Science, Ankara, Türkiye. E-mail: veliozancakir@gmail.com

⁵ Alanya Alaaddin Keykubat University, Faculty of Sport Science, Alanya, Türkiye. E-mail: deniz.yumuk@alanya.edu.tr

Quality of life can be a result of leisure participation; however, lack of and/or insufficiency in leisure education and awareness of leisure benefits may lead to a certain level of leisure boredom (Iso-Ahola & Weissinger, 1987). In its theoretical main frame, leisure boredom includes the very aspects of foundation of leisure studies. These aspects include but are not limited to leisure attitude, leisure repertoire, self-esteem, perceived social competence, leisure constraints, awareness related to the psychological benefits to be gained through leisure participation, and leisure satisfaction (Lee et.al., 2020; Kara, Gürbüz & Sarol, 2018; Kara & Özdedeoglu, 2017; Tunar et al., 2012; Weissinger, Caldwell & Bandalos, 1992; Sariakcalı et al., 2022). Iso-Ahola and Weissinger (1990) describe perceived freedom in leisure as a subjective perception which emerges as a consequence of lack of optimal arousal during a leisure experience of an individual. Recent literature has shown that the leisure boredom push individuals towards a leisure spent on sedentary behavior thorough technology related addiction (Wegner et.al., 2006; Leung, 2008; Wegner & Flisher, 2009; Weybright et.al., 2015). It is vital to know that the addiction related to technological devices and online platforms cause individuals to be abstracted from the social environments as they are physically interacting with.

As the technology enhances, it becomes more significant to make the difference between the correct use of it, and the addiction road it can lead to. A balance between leisure life and technology use can bring about great many opportunities; however, in the unfortunate event of becoming addicted to what technology brings in our hands, it is hard to change the sedentary behavior coming along with this. At this point, the term nomophobia enters the scene. Nomophobia is described as “No Smartphone Phobia” (Bhattacharya et.al., 2019) which means that individuals cannot stand even a short while without touching, looking at, sharing and/or checking their smartphones. It is also stated that it is the fear of not being able to use smartphones (Notara et.al., 2021). Generally, the main sample group of literature related to nomophobia is the youth (Anshari, Alas & Sulaiman, 2019); however, nomophobia is spreading among all ages (Farooqui, Pore & Gothankar, 2018; Rodríguez-García, Moreno-Guerrero & Lopez Belmonte, 2020; León-Mejía et.al., 2021). Yildirim & Correia (2015) explored and determined the dimensions of nomophobia which were revealed as “not being able to communicate”, “losing connectedness”, “not being able to access information” and “giving up convenience”. King et.al. (2013) stated that nomophobia is also related to social phobia because socially phobic individuals do not engage in live interactions. Although it is not like a pandemic, nomophobia can have an effect of a pandemic in the following year. Considering these, the aim of the current study is to compare the digital game addiction, leisure boredom and quality of life of the students of Alanya Alaaddin Keykubat University in terms of different variables and to evaluate the correlation and effect sizes of these scales.

METHOD

Research Model

The research model is in correlational survey model, and the differences between demographics and Leisure boredom, Nomophobic attitude and Quality of Life were determined. Finally, the correlation between scales, and their effects were determined.

Research Group

The research group consists of 239 female ($Mean_{age} = 21.69 \pm 4.30$) and 166 male ($Mean_{age} = 21.74 \pm 3.88$), total of 405 ($Mean_{age} = 21.71 \pm 4.13$) students of Alanya Alaaddin Keykubat University who were chosen using convenience sampling method.

Data Collection

To collect data, “Leisure boredom Scale (LBS)” (Iso-Ahola & Weissinger 1990; Kara et.al., 2014), “Nomophobia Scale (NFS)” (Yildirim & Correia 2015; Yildirim et.al., 2016), and “Quality of Life Scale Short Form (QoL-SF)” (Eser et.al., 2010) were used.

Demographic Information Form

The demographic information form was developed by the researchers in order to collect demographic information of the students such as age, gender, class, leisure duration (weekly), and smartphone use duration (daily).

Nomophobia Scale (NFS)

Nomophobia Scale was developed by Yıldırım and Correia (2015) and adapted into Turkish language by Yıldırım et.al. (2016). The scale consists of four subscales which are “not being able to communicate” (four items), “losing connectedness” (five items), “not being able to access information” (six items) and “giving up convenience” (five items) which is 20 items in total. The minimum score to be obtained from the scale is 20 whereas the maximum score is 140. It is 7-point Likert type. As the total score obtained from the scale increases, the nomophobic attitude increases. Reliability coefficient calculated in the original scale using Cronbach’s alpha was found 0.95, and the Turkish version’s reliability coefficient was found 0.92. The current study’s Cronbach’s alpha reliability coefficient was found 0.90.

Leisure boredom Scale (LBS)

The Leisure boredom scale was developed by Iso-Ahola and Weissinger (1990) in order to measure the individual differences in perceiving boredom in leisure. The original scale consists of 16 items and has one subscale. The Turkish adaptation was carried out by Kara, Gürbüz and Öncü (2014) in adults who work in different jobs. As a result of the Turkish adaptation study, it was determined that the scale has 10 items and two subscales (boredom and satisfaction). Kara et.al. (2014) found that Cronbach Alpha internal consistency coefficient for “boredom” is 0.72, and Cronbach Alpha internal consistency coefficient for “satisfaction” is 0.77. In the current study, Cronbach Alpha internal consistency coefficient for “boredom” is 0.81, and Cronbach Alpha internal consistency coefficient for “satisfaction” is 0.69 and for the total score, it is 0.82 which show a high level of reliability.

Quality of Life Scale-Short Form (QoL-SF)

The scale was formed using certain items of European Health Effect Scale’s World Health Organization Quality of Life Module. It is an eight-item indices quality of life scale. The Turkish adaptation was carried out by Eser et.al (2010). The scale has eight items, two of which are general questions. The scale is in 5-point Likert type. As the scores increase, the quality-of-life increases. The internal consistency coefficient for the current study was found 0.83.

Data Collection

The data was collected from the university students studying at Alanya Alaaddin Keykubat University using convenience sampling method. The data were collected online. Before the data collection, necessary permissions were taken from the authors of the scales and from the Ethical Committee. Then, an online consent form was sent to the participants. Voluntary participants answered the scale in 7-9 minutes. The incomplete and wrongly filled data were determined, and a total of 405 data were transferred to IBM SPSS 24 program.

Data Analysis

In order to determine if the data show normal distribution, skewness and kurtosis analysis were done. As the data showed normal distribution, descriptive statistics, correlations and regression analysis were carried out. In order to test the differences, t test, and ANOVA analyses were done. To determine the source of differences in ANOVA analysis, Post-Hoc Tukey tests were carried out. To determine the reliability of the scales, Cronbach’s alpha coefficient was calculated. In the statistical analysis and descriptions, the significance level was set as 0.05.

FINDINGS

Table 1. Distribution of LBS, NFS and QoL-SF Scores

Scales	Items	N	Mean. / Sd.	Skewness	Kurtosis	C. Alpha
LBS Total	10	405	2.35 / 0.65	0.09	-0.43	0.82
NFS Total	20		3.01 / 0.56	0.18	-0.61	0.90

QoL-SF Total	8	3.28 / 0.67	-0.24	0.23	0.83
---------------------	---	-------------	-------	------	------

The total mean score of LBS was 2.35 and Cronbach Alpha internal consistency coefficient was 0.82. The total mean score of NFOS was 3.01 and Cronbach Alpha internal consistency coefficient was 0.90, and the total mean score of QoL-SF was found 3.28 and Cronbach Alpha internal consistency coefficient was found 0.83. The skewness and kurtosis values of all measurement tools was determined between ± 1.00 . In the light of these findings, it can be said that the data collection tools are reliable and show normal distribution.

Table 2. Scale Scores According to Number of Times of Daily Use of Smartphone

	Number of times (N)	Mean. / Sd.	f	p	Tukey
LBS Total	¹ < 10 times (33)	2.02 / 0.59			
	² 10-19 times (98)	2.27 / 0.68			
	³ 20-29 times (123)	2.30 / 0.57	5.14	0.001	1<3, 1<5, 2<5
	⁴ 30-39 times (47)	2.37 / 0.63			
	⁵ ≥ 40 times (104)	2.55 / 0.66			
QoL-SF Total	¹ < 10 times (33)	3.35 / 0.78			
	² 10-19 times (98)	3.35 / 0.57			
	³ 20-29 times (123)	3.28 / 0.71	0.64	0.63	-
	⁴ 30-39 times (47)	3.27 / 0.51			
	⁵ ≥ 40 times (104)	3.28 / 0.67			
NFS Total	¹ < 10 times (33)	2.72 / 0.60			
	² 10-19 times (98)	2.84 / 0.48			
	³ 20-29 times (123)	2.97 / 0.51	11.19	0.001	1<4, 1<5, 2<4, 2<5, 3<5
	⁴ 30-39 times (47)	3.18 / 0.56			
	⁵ ≥ 40 times (104)	3.24 / 0.56			

* p<0.05, ** p<0.01, *** p<0.001

According to the analysis results in Table 2, there is a statistically significant difference in terms of “the number of times of daily smartphone use” variable in LBS [$F_{(4,400)} = 5.14; p=0.001$]. Tukey test show that the group that uses smartphone “< 10 times” and “10-19 times” is significantly lower than the ones in “≥ 40 times” group. Additionally, the individuals in “< 10 times” have lower total mean scores when compared to the ones in “20-29 times”.

It is determined that there is a statistically significant difference in terms of NFS total mean score [$F_{(4,400)} = 11.19; p=0.001$] in terms of “the number of times of daily smartphone use” variable. The total mean scores of the groups “< 10 times”, “10-19 times” and “20-29 times” are significantly lower compared to the ones in “≥ 40 times” group. Also, the total mean scores of the groups of “< 10 times” and of “10-19 times” are significantly lower compared to the group “30-39 times”.

Also, no significant differences were found in terms of QoL-SF [$F_{(4,400)} = 0.64; p=0.63$] for “the number of times of daily smartphone use”.

Table 3. Scale Scores According to Daily Smartphone Use Duration of Participants

	Smartphone Use Duration (N)	Mean. / Sd.	f	p	Tukey
LBS Total	¹ < 1 hours (14)	2.10 / 0.70			
	² 1-2 hours (83)	2.12 / 0.64	7.41	0.001	2<3, 2<4
	³ 3-4 hours (199)	2.37 / 0.62			

	⁴ ≥ 4 hours (109)	2.53 / 0.65			
QoL-SF Total	¹ < 1 hours (14)	3.33 / 0.89			
	² 1-2 hours (83)	3.34 / 0.59	1.94	0.12	-
	³ 3-4 hours (199)	3.33 / 0.63			
	⁴ ≥ 4 hours (109)	3.15 / 0.75			
NFS Total	¹ < 1 hours (14)	2.85 / 0.43			
	² 1-2 hours (83)	2.72 / 0.48	14.75	0.001	2<3, 2<4
	³ 3-4 hours (199)	3.04 / 0.53			
	⁴ ≥ 4 hours (109)	3.22 / 0.58			

* p<0.05, ** p<0.01, *** p<0.001

When the data in Table 3 are examined, it was determined that the total mean scores of LBS [$F_{(3-401)} = 7.41$; $p=0.001$] and NFS [$F_{(3-401)} = 14.75$; $p=0.001$] differ significantly in terms of “Daily Smartphone Use Duration” variable. It is seen that in LBS and NFS, the group “1-2 hours” have significantly lower scores when compared to the groups “3-4 hours” and “≥ 4 hours”.

Also, it was determined that no significant differences were found in terms of QoL-SF [$F_{(3-401)} = 1.94$; $p=0.12$] for “Daily Smartphone Use Duration”.

Table 4. Scale Scores According to Having Difficulty in Leisure Participation

	Having Difficulty in Leisure Participation (N)	Mean. / Sd.	f	p	Tukey
LBS Total	¹ Always (74)	2.90 / 0.62			
	² Sometimes (259)	2.37 / 0.54	84.12	0.001	1>2, 1>3, 2>3
	³ Never (72)	1.72 / 0.50			
QoL-SF Total	¹ Always (74)	2.89 / 0.81			
	² Sometimes (259)	3.27 / 0.56	36.09	0.001	1<2, 1<3, 2<3
	³ Never (72)	3.75 / 0.60			
NFS Total	¹ Always (74)	3.10 / 0.56			
	² Sometimes (259)	3.04 / 0.56	5.29	0.01	1>3, 2>3
	³ Never (72)	2.83 / 0.52			

* p<0.05, ** p<0.01, *** p<0.001

The analysis results showed that the total mean scores of LBS [$F_{(2-402)} = 84.12$; $p=0.001$], NFS [$F_{(2-402)} = 5.29$; $p=0.001$] and QoL-SF [$F_{(2-402)} = 36.09$; $p=0.001$] differ significantly in terms of “Having Difficulty in Leisure Participation”. For LBS and NFS, the participants who “never” have difficulty in leisure participation have lower total mean scores when compared to the ones in “sometimes” and “always” groups. Also, the ones in “sometimes” group have lower scores when compared to the “always” group.

On the other hand, for QoL-SF, the participants who “never” have difficulty in leisure participation have higher total mean scores when compared to the ones in “sometimes” and “always” groups. Also, the ones in “sometimes” group have higher scores when compared to the “always” group.

Table 5. Scale Scores According to Being Smartphone Addict

	Being Smartphone Addict (N)	Mean. / Sd.	f	p	Tukey
LBS Total	¹ I am not (177)	2.20 / 0.65	9.68	0.001	1<2, 1<3
	² I have no idea (82)	2.48 / 0.67			
	³ Maybe I am (146)	2.48 / 0.61			
QoL-SF Total	¹ I am not (177)	3.42 / 0.66	6.13	0.001	1>2, 1>3
	² I have no idea (82)	3.19 / 0.68			
	³ Maybe I am (146)	3.18 / 0.65			
NFS Total	¹ I am not (177)	2.78 / 0.51	32.30	0.001	1<2, 1<3
	² I have no idea (82)	3.12 / 0.51			
	³ Maybe I am (146)	3.23 / 0.53			

* p<0.05, ** p<0.01, *** p<0.001

According to the ANOVA results, the total mean scores of LBS [$F_{(2,402)} = 9.68$; $p=0.001$], NFS [$F_{(2,402)} = 32.20$; $p=0.001$] and QoL-SF [$F_{(2,402)} = 6.13$; $p=0.001$] differ significantly in terms of “Being a Mobile Phone Addict”. In LBS and NFS, the participants who believe they are not addicts has significantly lower scores when compared to the ones who “have no idea” and who believe they might be addicts. In addition, the individuals who believe they are not addicts has significantly higher scores when compared to the ones who “have no idea” and who believe they might be addicts in QoL-SF.

Table 6. Regression Analysis Results of Effect of NFS on LBS

	Non-Standardized Coefficients		Standardized Coefficients			F	R2
	B	Sd	β	t	p		
Fixed	2.64	0.10		25.88	0.001	14.95	0.04
NFS	0.16	0.04	0.19	3.87	0.001		
Dependent Variable: LBS							

* p<0.05. ** p<0.01. *** p<0.001.

As a result of the regression analysis carried out to test the effect of NFS on LBS, it was determined that this model is statistically significant, and smartphone addiction can explain 4% of leisure boredom level ($R^2=0.04$; $F(1,403) = 15.94$; $p=0.001$). According to the obtained results, NFS predicts LBS significantly and in a positive way ($\beta=0.19$, $t=3.87$; $p=0.001$). Therefore, a one unit increase in smartphone addiction cause a 0.16 increase in leisure boredom.

Table 7. Regression Analysis Results of Effect of NFS on QoL-SF

	Non-Standardized Coefficients		Standardized Coefficients			F	R2
	B	Std. Hata	β	t	p		
Fixed	3.71	0.18		20.42	0.001	5.83	0.01
NFS	-0.14	0.06	0.12	-2.41	0.001		
Dependent Variable: QoL-SF							

* p<0.05. ** p<0.01. *** p<0.001.

As a result of the regression analysis carried out to test the effect of NFS on QoL-SF, it was determined that this model is statistically significant, and smartphone addiction can explain 1% of quality of life level ($R^2=0.01$; $F(1,403) = 5.83$; $p=0.02$). According to the obtained results, NFS predicts QoL-SF significantly and in a negative way ($\beta=-0.12$, $t=-2.41$; $p=0.001$). Therefore, a one unit increase in smartphone addiction cause a 0.14 decrease in quality of life.

Table 8. Regression Analysis Results of Effect of LBS on QoL-SF

	Non-Standardized Coefficients		Standardized Coefficients			F	R2
	B	Std. Hata	β	t	p		
Fixed	4.21	0.12		36.54	0.00	68.87	0.15
LBS	-0.39	0.05	0.38	-8.30	0.00		
Dependent Variable: QoL-SF							

* p<0.05. ** p<0.01. *** p<0.001.

As a result of the regression analysis carried out to test the effect of LBS on QoL-SF, it was determined that this model is statistically significant, and smartphone addiction can explain 15% of quality of life level ($R^2=0.15$; $F(1,403)= 68.87$; $p=0.001$). According to the obtained results, LBS predicts QoL-SF significantly and in a negative way ($\beta=-0.38$, $t=-8.30$; $p=0.001$). Therefore, a one unit increase in smartphone addiction cause a 0.39 decrease in quality of life.

DISCUSSION AND CONCLUSION

The aim of the current study is to compare the digital game addiction, leisure boredom and quality of life of the students of Alanya Alaaddin Keykubat University in terms of different variables and to evaluate the correlation and effect sizes of these scales. In the light of this, the carried-out analyses revealed that in terms of the number of times the participants use their smartphones and the duration of smartphone use, the group who choose to use their smartphones have lower scores in LBS and NFS whereas the number of times of smartphone use does not have a significant difference in the current study's population in terms of QoL. When the literature is reviewed, Al-Mamun et.al. (2023) found in their study on university students that nomophobia is long-term smartphone use is one of the symptoms of nomophobia. Similarly, Daei, Ashrafi-Rizi and Soleymani (2019) stated that higher frequency of smartphone use indicates tendency of nomophobia. Previous literature also stated that duration and frequency of smartphone use is highly associated with nomophobia (Jilisha et.al., 2019). Allaby and Shannon (2020) found in their study that in order to kill the leisure boredom, individuals tend to use their smartphones which leads to a passive leisure. On the other hand, Buctot, Kim and Kim (2020) found in their study that as the prevalence and duration of smart phone increases, the scores of QoL decrease which is paralleled with the current study's findings. Similarly, Masaeli and Billieux (2022) found in their research that problematic internet use and problematic smartphone use are negatively correlated with QoL; in addition, Jeong et.al., (2020) stated that overuse of internet, gaming and/or smartphones is negatively correlated with QoL.

The current study's findings related to having difficulty in participating in leisure activities revealed that the participants who never have difficulty in participating in leisure activities have higher scores in QoL whereas the participants who never have difficulty in participating in leisure activities have lower scores in LBS and NFS. Brajša-Žganec, Merkaš and Šverko (2011) found that the participants who socialized actively in leisure have higher scores in QoL. Also, Lloyd and Auld (2002) stated that the best predictors of quality of life are person-centered leisure attribute and leisure satisfaction. Weissinger, Caldwell and Bandalos (1992) emphasized the importance of leisure repertoire in leisure boredom. The more leisure education and leisure repertoire individuals have, the less boredom they will have in their leisure which displays parallelism with the current study. In terms of nomophobia, Bichu and Kumar (2021); on the other hand, found in their research that participating in physical activities in leisure has a negative correlation with nomophobia which supports the findings of the current study.

The participants of the current study were analyzed in their self-report of being an addict of smartphone or not. According to the results, it is determined that the participants who believe they are, or they might be addicts to smartphones have higher scores in NFS and LBS whereas they obtained lower scores in QoL. Previous literature showed that there is a negative correlation between smartphone addiction and leisure boredom indicating that people tend to feel less bored in leisure when they are not addicted to the smartphones (Serdar, Demirel & Harmandar Demirel, 2022; Kil et.al., 2021). Similarly, Wu-Ouyang (2022) found that leisure boredom is related to fear of missing out which correlates with smartphone addiction and nomophobia.

It is concluded that the group which has no difficulty in making use of leisure, who participates in physical activity regularly, who has less connection with their smartphones and who doesn't see themselves as smartphone addicts have lower levels of leisure boredom perception and nomophobia whereas they have higher levels of quality of life. The fear of losing connections increases the level of boredom perception in students and it decreases the quality of life. Also, quality of life decreases due to the increase in boredom perception.

REFERENCES

- Al-Mamun, F., Mamun, M. A., Prodhan, M. S., Muktarul, M., Griffiths, M. D., Muhit, M., & Sikder, M. T. (2023). Nomophobia among university students: Prevalence, correlates, and the mediating role of smartphone use between Facebook addiction and nomophobia. *Heliyon*, 9(3).
- Allaby, M., & Shannon, C. S. (2020). "I just want to keep in touch": Adolescents' experiences with leisure-related smartphone use. *Journal of Leisure Research*, 51(3), 245-263.
- Anshari, M., Alas, Y., & Sulaiman, E. (2019). Smartphone addictions and nomophobia among youth. *Vulnerable Children and Youth Studies*, 14(3), 242-247.
- Bhattacharya, S., Bashar, M. A., Srivastava, A., & Singh, A. (2019). Nomophobia: No smartphone phobia. *Journal of family medicine and primary care*, 8(4), 1297-1300.
- Bichu, E., & Kumar, N. (2021). Association of level of physical activity in physiotherapy undergraduates with Nomophobia. *Int J Phys Educ Sports and Health*, 8(4), 96-98.
- Brajša-Žganec, A., Merkaš, M., & Šverko, I. (2011). Quality of life and leisure activities: How do leisure activities contribute to subjective well-being?. *Social indicators research*, 102, 81-91.
- Buctot, D. B., Kim, N., & Kim, J. J. (2020). Factors associated with smartphone addiction prevalence and its predictive capacity for health-related quality of life among Filipino adolescents. *Children and Youth Services Review*, 110, 104758.
- Chen, L. H., Ye, Y. C., Chen, M. Y., & Tung, I. W. (2010). Alegria! Flow in leisure and life satisfaction: The mediating role of event satisfaction using data from an acrobatics show. *Social Indicators Research*, 99(2), 301-313.
- Daei, A., Ashrafi-Rizi, H., & Soleymani, M. R. (2019). Nomophobia and health hazards: Smartphone use and addiction among university students. *International journal of preventive medicine*, 10(1), 202.
- Farooqui, I. A., Pore, P., & Gothankar, J. (2018). Nomophobia: an emerging issue in medical institutions?. *Journal of Mental Health*, 27(5), 438-441.
- Iso-Ahola, S. E., & Weissinger, E. (1987). Leisure and boredom. *Journal of social and clinical psychology*, 5(3), 356-364.
- Jam, F. A., Haq, I. U., & Fatima, T. (2012). Psychological contract and job outcomes: Mediating role of affective commitment. *Journal of Educational and Social Research*, 2(4), 79-79.
- Jeong, Y. W., Han, Y. R., Kim, S. K., & Jeong, H. S. (2020). The frequency of impairments in everyday activities due to the overuse of the internet, gaming, or smartphone, and its relationship to health-related quality of life in Korea. *BMC Public Health*, 20, 1-16.
- Jilisha, G., Venkatachalam, J., Menon, V., & Olickal, J. J. (2019). Nomophobia: A mixed-methods study on prevalence, associated factors, and perception among college students in Puducherry, India. *Indian journal of psychological medicine*, 41(6), 541-548.
- Kara, F. M., & Özdedeoğlu, B. (2017). Examination of relationship between leisure boredom and leisure constraints. *Sport Sciences*, 12(3), 24-36.
- Kara, F. M., Gürbüz, B., & Sarol, H. (2018). An investigation of adult's leisure boredom, perceived social competence and self-esteem. *International Journal of Sport Exercise and Training Sciences - IJSETS*, 4(4), 113-121.
- Khan, T. I., Akbar, A., Jam, F. A., & Saeed, M. M. (2016). A time-lagged study of the relationship between big five personality and ethical ideology. *Ethics & Behavior*, 26(6), 488-506.
- King, A. L. S., Valenca, A. M., Silva, A. C. O., Baczynski, T., Carvalho, M. R., & Nardi, A. E. (2013). Nomophobia: Dependency on virtual environments or social phobia?. *Computers in human behavior*, 29(1), 140-144.
- Lee, K. J., Cho, S., Kim, E. K., & Hwang, S. (2020). Do more leisure time and leisure repertoire make us happier? An investigation of the curvilinear relationships. *Journal of Happiness Studies*, 21, 1727-1747.
- León-Mejía, A. C., Gutiérrez-Ortega, M., Serrano-Pintado, I., & González-Cabrera, J. (2021). A systematic review on nomophobia prevalence: Surfacing results and standard guidelines for future research. *PloS one*, 16(5), e0250509.
- Lloyd, K. M., & Auld, C. J. (2002). The role of leisure in determining quality of life: Issues of content and measurement. *Social indicators research*, 57, 43-71.
- Masaeli, N., & Billieux, J. (2022). Is problematic Internet and smartphone use related to poorer quality of life? A systematic review of available evidence and assessment strategies. *Current Addiction Reports*, 9(3), 235-250.
- Notara, V., Vagka, E., Gnardellis, C., & Lagiou, A. (2021). The emerging phenomenon of nomophobia in young adults: A systematic review study. *Addiction & health*, 13(2), 120.
- Ozavci, R. (2023). The effect of perceptual stress from a recreational perspective on leisure satisfaction. *Journal of ROL Sport Sciences*, 1(Special Issue), 264-278
- Rodríguez-García, A. M., Moreno-Guerrero, A. J., & Lopez Belmonte, J. (2020). Nomophobia: An individual's growing fear of being without a smartphone—a systematic literature review. *International Journal of Environmental Research and Public Health*, 17(2), 580.
- Sarakcalı, B., Ceylan, L., & Çeviker, A. (2022). Evaluation of head trauma on pituitary function in professional soccer players. *Acta Medica Mediterranea*, 38, 945-950
- Serdar, E., Demirel, M., & Harmandar Demirel, D. (2022). The Relationship between the leisure boredom, leisure satisfaction, and smartphone addiction: A Study on university students. *International Journal of Technology in Education*, 5(1), 30-42.

- Tunar, M., Ozen, S., Goksen, D., Asar, G., Bediz, C. S., & Darcan, S. (2012). The effects of Pilates on metabolic control and physical performance in adolescents with type 1 diabetes mellitus. *Journal of Diabetes and its Complications*, 26(4), 348-351.
- Tunar, M., Çetinkaya, C., Gümüş, H., Gençoğlu, C., Ünal, B., & Kayatekin, B. M. (2017). Reliability and Validity of a Novel Soccer Specific Field Test. *Journal of Athletic Performance and Nutrition*, 4(1), 1-12.
- Üstgörül Y. E., (2021). Turizm işletmelerinde rekreasyonel sportif aktiviteler. Detay Anatolia Akademik Yayıncılık Ltd. Şti.
- Wegner, L., & Flisher, A. J. (2009). Leisure boredom and adolescent risk behaviour: A systematic literature review. *Journal of Child and Adolescent Mental Health*, 21(1), 1-28.
- Wegner, L., Flisher, A. J., Muller, M., & Lombard, C. (2006). Leisure boredom and substance use among high school students in South Africa. *Journal of Leisure Research*, 38(2), 249-266.
- Weissinger, E., Caldwell, L. L., & Bandalos, D. L. (1992). Relation between intrinsic motivation and boredom in leisure time. *Leisure Sciences*, 14(4), 317-325.
- Weybright, E. H., Caldwell, L. L., Ram, N., Smith, E. A., & Wegner, L. (2015). Boredom prone or nothing to do? Distinguishing between state and trait leisure boredom and its association with substance use in South African adolescents. *Leisure sciences*, 37(4), 311-331.
- World Health Organization. (2019). Health statistics and information systems. <https://www.who.int/healthinfo/survey/whoqol-qualityoflife/en/>
- Wu-Ouyang, B. (2022). Are smartphones addictive? Examining the cognitive-behavior model of motivation, leisure boredom, extended self, and fear of missing out on possible smartphone addiction. *Telematics and Informatics*, 71, 101834.
- Kil, N., Kim, J., Park, J., & Lee, C. (2021). Leisure boredom, leisure challenge, smartphone use, and emotional distress among US college students: are they interrelated?. *Leisure Studies*, 40(6), 779-792.
- Yumuk, E.D. & Güngörmüş, H.A., (2023). Macera Rekreasyonu: Kuramlar ve Yaklaşımlar. Özgür Yayınları.