Journal of Experimental and Clinical Medicine
https://dergipark.org.tr/omujecm

Research Article

J Exp Clin Med
2023; 40(3): 542-549
doi: 10.52142/omujecm.40.3.20

The effect of technology-dependent behavioral disorders, including nomophobia, phubbing, fear of missing out, and netlessphobia, on quality of life and life satisfaction in desk-workers

Özgür ÖNAL*, Betül ÇOBAN, Ömer KALAYCI, Eyüb KAÇMAZ, Ahmet Nesimi KİŞİOĞLU, Ersin USKUN

Department of Public Health, Faculty of Medicine, Süleyman Demirel University, Isparta, Türkiye

Received: 08.03.2023 • **Accepted/Published Online:** 07.09.2023 • **Final Version:** 30.09.2023

Abstract

This study aims to examine technology-dependent behavioral disorders and the effects of these disorders on the quality of life and life satisfaction of desk workers. The study sample consists of 850 (433 female, 417 male) desk workers. The Turkish Nomophobia Questionnaire, Fear of Missing Out Scale, Phubbing Scale, European Health Impact Scale and Life Satisfaction Scale were administered to the participants in the questionnaire. In addition, a question was asked to determine Netlesphobia. Correlation and path analysis were performed to determine the relationship between them. In the correlation analysis, the quality of life was negatively correlated with nomophobia, phubbing, FoMO, and netlessphobia and positively correlated with life satisfaction. Pairwise comparisons for all technology-dependent behavioral disorders showed a significant positive correlation. According to the path analysis, FoMO and netlessphobia reduce the quality of life, and netlessphobia reduces life satisfaction. Phubbing increases life satisfaction. Researching the effects of rapidly increasing internet and technological device use on individuals will be beneficial in terms of informing individuals about the correct use and preventing negative consequences that may arise in individuals' quality of life and life satisfaction.

Keywords: quality of life, life satisfaction, nomophobia, fear of missing out, phubbing, netlessphobia, desk workers

1. Introduction

In recent years, the use of technological devices has dramatically increased globally. According to the 2022 global digital report, there has been approximately a 1% (80 million) increase in internet users compared to 2021. Again, the same report states a 10.1% (424 million) increase in the number of active social media users (1). Internet usage is also increasing in Turkey, similar to the rest of the world. While the frequency of individuals using the internet in Turkey was 82.6% in 2021, this rate increased to 85% in 2022 (2).

The increase in the use of technological devices brings many problems and makes our lives easier. Some of these include weakening face-to-face communication, increased individualization, information pollution, addictive behaviors, and resulting psychological issues (3). Smartphones are considered among the most important non-drug addictions today (4). In the beginning, the negative situations caused by technological devices and the internet in people were measured in broad scopes, such as digital addiction (5) and internet addiction (6). As the use of technology increases, addiction-based behavioral problems experienced by individuals have begun to be measured in more specific and different ways.

Some behavioral disorders on the agenda that show negative influence from technology are nomophobia, phubbıng, FoMO, and netlesphobia. The first of these disorders, nomophobia, is an abbreviation of "No Mobile Phone Phobia" and is defined as the involuntary and irrational fear that individuals experience when staying away from mobile devices (7). In diagnosing nomophobia, which was first described in 2008, it is vital for individuals to spend a lot of time with their smartphones and to check their phones frequently. Still, the intense anxiety that occurs in individuals when the smartphone is lost and its place cannot be found is also important (8). The second disorder mentioned above, phubbıng, is derived from the words "phone" and "snubbing". The person doing phubbing is called a "phubber." The concept of phubbing can be evaluated as the individual's dealing with the phone in the social environment and avoiding interpersonal communication. Thus, phubbing reduces the quality of social interaction by reducing face-to-face communication between people. This situation can be defined as the isolation of the individual from the environment due to the smartphone (9-11). With the increasing use of technological devices and the internet, the follow-up of social networks has brought another behavioral disorder, Fear of Missing Out (FoMO), to the agenda. This situation causes people to ask questions such as "Did I miss something?", "Who shared what right now?" It causes them to spend a lot of time on social networks by experiencing fears such as (4,12). The concept of netlessphobia, a state-of-the-art addictive behavior disorder mentioned above, refers to the inability of the person to stay in an environment where there is no internet and to be worried

*Correspondence: ozguronal@sdu.edu.tr

about internet deprivation beyond excessive internet use (13).

It is known that individual with technology-dependent behavioral disorders is also at risk for others. Although the main causative factor is not fully clarified, studies show they play a correlation, mediator or moderator effect, or predictive role. Studies have found that nomophobia-FoMO (14,15), FoMO-phubbing (16,17), and nomophobia-phubbing (18) are associated. Although the relationship between netlessphobia and these technology-dependent behavioral disorders is not sufficiently clarified in the literature, one study found an association between nomophobia and FoMO and netlessphobia (19). Considering that anxiety without being in an environment without the internet is the main factor in the development of all of the above-mentioned behavioral disorders, and the necessity of using a smartphone and having the internet in the environment to follow the developments, it can be expected that the relationship between these disorders will be vital.

Satisfaction with life is one of the most prominent quality-of-life indicators and is accepted as a more subjective evaluation (20). In addition, life satisfaction is the result of comparing what an individual wants with what they currently have (21). Technology-dependent behavioral disorders may impact the quality of life and life satisfaction by creating an addiction or creating physical, mental, and social problems. In addition, the effects of these behavioral disorders on the quality of life and their effects on life satisfaction may occur in different directions. Some studies show that technology-dependent behavioral disorders lead to negative situations such as depression, which we can accept as indicators of low life satisfaction and quality, and studies show that negative psychopathological conditions cause technology-dependent behavior disorders (22,23). In the literature, rather than measuring the holistic effect of these disorders on quality of life, the relationship between diseases such as depression (23-26) and anxiety (24,25) has been investigated. Therefore, there is a need to examine the effects on quality of life and life satisfaction with a holistic approach.

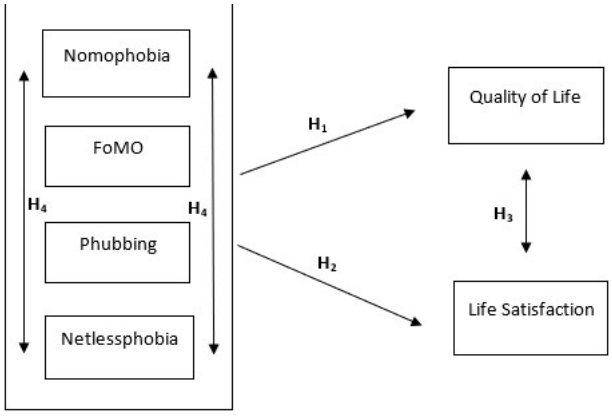

Fig. 1. Hypothetical model

Previous studies have focused on students who are considered to be at higher risk for technological device and internet use (25). However, we think that desk workers who spend most of their working lives in front of the computer are also at risk for technology-dependent behavioral disorders. For this reason, this study aimed to examine technology-dependent behavioral disorders and the effects of these disorders on the quality of life and life satisfaction of desk workers.

In this context, the following hypotheses were formed in the study: Technology-dependent behavioral disorders (nomophobia, phubbing, FoMO, and netlessphobia), quality of life (H1), and life satisfaction (H2) with the negative; the positive relationship between quality of life and life satisfaction (H3); Technology-dependent behavioral disorders also have a positive relationship with each other (Fig..1).

2. Matherials and Methods

2.1. The Procedure and Participants

The study's sample size was calculated as at least 768 by taking the minimum sample size of 50%, the margin of error of 5% with a 95% confidence interval and design effect 2. The data of this cross-sectional study were collected from 850 desk workers aged 19-63 between March and April 2021 via Google Forms in Turkey. The survey's participation criterion: Over 18 years old, still working, and spending more than half of the daily working time at a desk. Participants who did not meet these criteria were excluded from the study.

2.2. Measures

In the first part of the study, the socio-demographic characteristics of the participants (age, gender, marital status, income level), occupation, professional year, place of residence, daily-weekly working hours, time spent working at a desk/computer, and experience netlessphobia were questioned. In the continuation of the survey, the participants; Nomophobia, FoMO, Phubbing, European Health Impact Scale, and Life Satisfaction Scale were asked.

The World Health Organization Quality of Life Assessment (WHOQOL-8.Tr)

WHOQOL-8.Tr, the original version of the European Health Impact Scale (EUROHIS-QOL 8-item index), was used in the study. The original version is an index of the quality of life scale created by selecting some items from the WHOQOL-BREF scale (27). It was adapted into Turkish by Eser (2011) (Cronbach's alpha: 0.85) (28). The scale consists of 8 items and is a 5-point Likert type (1=not at all, 5=completely). Evaluation of the scale was made on a single dimension and total score. As the score obtained from the scale increases, the quality of life of individuals increases. In this study, Cronbach's alpha value was found to be 0.88.

Life Satisfaction Scale

The scale, which consists of 5 items and measures a single dimension, was developed by Diener et al. (1985) and adapted into Turkish by Dağlı and Baysal (2016) with a Cronbach's alpha of 0.88 (29, 30). The scoring system for the scale is a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree), with no reverse-scored items. The total score

obtained from the scale was used for evaluation, with higher scores indicating greater life satisfaction. For this study, the Cronbach's alpha value was 0.88.

Turkish Nomophobia Questionnaire

Yildirim and Correria (2015) developed a 20-item scale (Cronbach's alpha: 0.95), which was later adapted into Turkish by Yıldırım et al. (2016) (Cronbach's alpha: 0.92) (31,32). The scale uses a 7-point Likert scale (1=strongly disagree, 7=strongly agree), and the total score is used for evaluation. Higher scores on the scale indicate a greater level of nomophobia in individuals. For this study, the Cronbach's alpha value was 0.96.

Fear of Missing Out Scale (FoMOs)

Przybylski et al. (2013) developed a scale consisting of 10 items and a single sub-dimension, which was adapted into Turkish by Gökler et al. (2016) (Cronbach's alpha: 0.81) (12,33). The questions in the scale are in the 5-point Likert type (1=Not at all true, 5=Absolutely true), with no reverse-scored items. The total score obtained from the scale was used for evaluation, with higher scores indicating a greater level of FoMO in individuals. The Cronbach's alpha value for this study was 0.90.

Phubbing Scale

Karadağ et al. (2015) developed a 10-item scale with a 5-point Likert assessment (1=never, 5=always) (9) and a Cronbach's alpha of 0.86. The scale does not include any reverse-scored items, and higher scores indicate a higher level of phubbing in individuals. The total score obtained from the scale was used for evaluation. In this study, the Cronbach's alpha value was 0.89.

Netlessphobia

Since there was no scale to measure netlessphobia in the literature review conducted at the time the questionnaire was applied. The participants were asked to rate their fear of being without internet from 1 to 5 (1 = I definitely do not live, 5 = I definitely do).

2.3. Statistical analysis

The statistical analysis was conducted using IBM SPSS 25.0, Origin Pro correlation plot graph, and AMOS 23 package programs for path analysis. A significance level of $p<0.05$ was considered statistically significant. Skewness and Kurtosis values were examined to determine if the data followed a normal distribution, and it was found that the data were suitable for normal distribution. Descriptive analysis (number, percentage, mean, standard deviation), bivariate correlation, and path analysis were used to evaluate the data.

Path analysis was performed to test the study hypotheses. The goodness of fit of the analysis model was tested using chi-square ($\chi 2$)/degrees of freedom (d/f), comparative index of fit (CFI), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), and root mean square approximation error (RMSEA).

The study was approved by the Süleyman Demirel University Faculty of Medicine Clinical Research Ethics Committee.

3. Results

The mean age of the 850 participants included in the study was 34.74 (SD=10.02), and the years of working in the profession were 9.85 (SD=9.35). Four hundred and thirty-three (50.9%) of them were women, and four hundred and twenty-nine (50.5%) were married. The majority of the participants (68.5%) reside in the city center. The socio-demographic characteristics and descriptive statistics of the participants are given in Table 1. The mean and standard deviations of the participants' total scores from the scales were as follows: For WHOQOL-8.Tr 21.96 (SD=5.71), life satisfaction scale 16.31 (SD=4.65), nomophobia scale 75.87 (SD=28.88), FoMO scale 24.72 (SD=9.20), phubbing scale was 26.32 (SD=9.17) and netlessphobia 2.83 (SD=1.24) was found.

Table 1. Socio-demographic characteristics of the participants

		n (%) / Mean±SD
Age, mean±SD		34.74 ± 10.02
Occupational year, mean±SD		9.85 ± 9.35
Daily working time (hours), mean±SD		8.12 ± 1.59
Gender, n (%)	Female	433 (50.9%)
	Male	417 (49.1%)
Marital status, n (%)	Single/divorced	421 (49.5%)
	Married	429 (50.5%)
Profession, n (%)	Physician	57 (6.7%)
	Other healthcare workers	58 (6.8%)
	Highly qualified white collar workers	206 (24.2%)
	Other white collars	529 (62.2%)
Living place, n (%)	City center	582 (68.5%)
	District center	268 (31.5%)
Percentage of time spent at the desk, n (%)	50-60%	266 (31.3%)
	61-80%	278 (32.7%)
	81-100%	306 (36.0%)
Percentage of time spent in front of the computer, n (%)	Less than 50%	97 (11.4%)
	50-60%	236 (27.8%)
	61-80%	222 (26.1%)
	81-100%	295 (34.7%)
Income, n (%)	Under 500 euros	200 (23.5%)
	500-1000 euros	444 (52.2%)
	Over 1000 euros	206 (24.2%)

n: Sample, %: Percent, SD: Standart Deviation

Quality of life, life satisfaction, technology-dependent behavioral disorders, numerical (Pearson), and ordinal (Kendall Tau) variables were analyzed in terms of correlation. Quality of life was positively correlated with life satisfaction and negatively correlated with nomophobia, phubbing, FoMO, and netlessphobia. In addition, pairwise comparisons for all technology-dependent behavioral disorders revealed a significant positive correlation (Fig. 2).

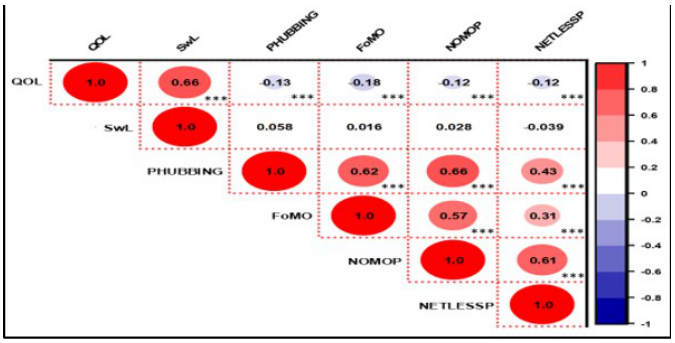

Fig. 2. Relationship between QOL (Quality of Life), SwL (Satisfaction with Life), Phubbing, FoMO, Nomophobia, Netlessphobia (correlation plot) (* <0.05, **<0.001, *** <0.0001

In this study, technology-dependent behavioral disorders (nomophobia, phubbing, FoMO, and netlessphobia) were negatively correlated with quality of life (H1) and life satisfaction (H2); the positive relationship between quality of life and life satisfaction (H3); A path analysis was performed considering that technology-dependent behavioral disorders would also be positively related between them. As a result of the path analysis: FoMO and netlessphobia decrease the quality of life (H1); netlessphobia reduces and phubbing increases life satisfaction (H2); a positive relationship between quality of life and life satisfaction (H3); all technology-dependent behavioral disorders were found to be positively associated (H4). The results are shown in Figure 3. The H1 and H2 hypotheses were partially supported, and the H3 and H4 hypotheses were fully supported.

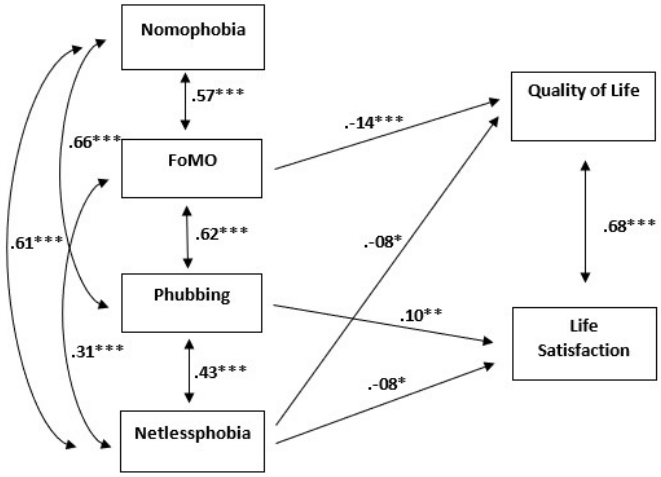

Fig. 3. Path analysis model (*p<0.05, **p<0.01,***p<0.001 The model created for Path Analysis was found to have a good fit (Table 2).

Table 2. Path Analysis Model Fitness Index

Model fit indexes	Good Fit	Acceptable Fit	Scale Values
NPAR			17
Chi-square (χ2)			1.277
P	0.05<p≤1	0.001<p≤0.05	0.865
Degrees of Freedom (DF)			4
Chi-square / Degrees of Freedom (χ2/DF)	0≤ χ2/sd ≤2	2<χ2/sd ≤3	0.319
Root Mean Square Error of Approximation (RMSEA)	0≤ RMSEA≤0.05	0.05<RMSEA ≤1	0.001
Comparative Fit Index (CFI)	0.95≤ CFI ≤1	0.90≤ CFI <0.95	1
Goodness of Fit Index (GFI)	0.95≤ GFI ≤1	0.90≤ GFI <0.95	0.999
Adjusted Goodness of Fit Index (AGFI)	0.90≤ AGFI ≤1	0.80≤ AGFI<0.90	0.997
Normed Fit Index (NFI)	0.95≤ NFI ≤1	0.90≤ NFI <0.95	0.999
Non-Normed Fit Index (NNFI) (TLI)	0.97≤ NNFI ≤1	0.95≤ NFI <0.97	0.999

The model created for Path Analysis was found to have a good fit (Table 2).

4. Discussion

This study determined a high correlation between technology-dependent behavioral disorders, FoMO, and netlessphobia decreasing the quality of life, phubbing increases, and netlessphobia reduces life satisfaction, and there is a positive relationship between quality of life and life satisfaction in desk workers. In the study, the participants' average scores from the scales were as follows: Nomophobia 75.87, FoMO 24.72, phubbing 26.32, and netlessphobia 2.83. In the literature, different scales are used to measure these disorders. When we look at the studies with the scales used in this study, it was between 26-27 (34-36) for phubbing and 21-27 (37-41) for FoMO. In a systematic review on this subject, nomophobia scores ranged from 51 to 82 (42). Since the result obtained from this study is close to the upper limit of the scores obtained in the literature, it can be thought that desk workers are especially at risk regarding nomophobia. The levels of FoMO and phubbing detected in the study are similar to the literature. There is only one study in the literature about netlessphobia. Compared to the scaled study, higher netlessphobia scores

were obtained in this study (43). This study will contribute to the determination of netlessphobia levels in the literature.

Technology-dependent behavioral disorders occur together due to frequent internet use and technological devices. As a result of this study, it was found that all technology-dependent behavioral disorders were positively correlated with each other. Considering the studies in these fields in the literature, nomophobia, and FoMO were positively related (15,44-46), and FoMO predicted nomophobia (14,47,48), nomophobia predicted phubbing (15), FoMO was positively related and predicted phubbing (16,17,49-53). In addition, it is thought that FoMO may be one of the psychological processes underlying problematic social media use (51). As FoMO increases the time spent both directly and with a smartphone, it can mediate the development of nomophobia and phubbing (14). In the literature, netlessphobia has been found to be positively associated with both FoMO and nomophobia (43). Examining these four technology-dependent behavioral disorders in future studies will clarify their relationship.

As technology-related behavioral disorders of individuals begin to occur, their quality of life and life satisfaction are affected. Quality of life is affected by physical, psychological, and social needs (54). Any situation that will negatively affect these requirements reduces the quality of life. In this study, it was determined that there was a negative correlation between the quality of life and phubbing, nomophobia, netlessphobia, and FoMO. In the path analysis, FoMO and netlessphobia decreased the quality of life. In two studies conducted with adolescents, nomophobia was found to be negatively related to the quality of life (55,56). Although there are not many studies in the literature that directly examine the relationship between these technology-dependent behavioral disorders and quality of life, there are also studies that examine the relationship with diseases such as anxiety, depression, stress, musculoskeletal problems, loneliness, sleep problems, which are indicators of decreased quality of life. Studies have shown that nomophobia is associated with depression, anxiety, and stress (57,58). A systematic review found that nomophobia is related to negative mental states such as stress, anxiety, and low self-esteem (25). According to the meta-analysis of Fioravanti et al. (2021), FoMO is positively associated with anxiety and depression (24), and according to another study, phubbing mediates the relationship between cell phone addiction and depression (26). Similarly, in another study, phubbing predicted loneliness, anxiety, and depression (23). This may suggest that technology-dependent behavioral disorders will affect the psychological state of individuals and cause a decrease in their quality of life. In addition, some opinions about reducing the quality of life may lead individuals to use technological devices and their addictions. In their study, Wegmann et al. (2017) stated that psychopathological symptoms cause FoMO (22). In future studies, it is essential to determine whether technology-dependent behavioral disorders negatively affect the psychological state or whether the opposite is true.

The relationship between technology-related behavioral disorders and life satisfaction is intricate, with a more nuanced effect than the overall quality of life. In individuals with a low quality of life, life satisfaction is also likely to be reduced. Quality of life encompasses various aspects of well-being, whereas life satisfaction is a more personal evaluation of one's life. Life satisfaction, on the other hand, is a more individualized assessment that depends on personal values and feelings. The study determined that netlessphobia decreased and phubbing increased life satisfaction, while nomophobia and FoMO did not affect it. Although the relationship between netlessphobia and life satisfaction has not been studied much in the literature (59), it was observed in a longitudinal study conducted on adolescents that internet addiction, which is a similar subject, reduces life satisfaction (60, 61). The use of desktop computers or laptop computers is as intense as the mobile phones of desk workers. It is crucial to have the internet active to perform online transactions on all technological devices. Therefore, the anxiety of being in an environment without the internet in the study group may have suppressed the negative effects of netlessphobia, FoMO, and nomophobia on life satisfaction. The fact that phubbing increased life satisfaction detected in this study is inconsistent with the literature. In the literature, there are studies in which phubbing is negatively associated with life satisfaction (62), and no relationship can be detected (23). It is stated that the negative relationship of phubbing with life satisfaction is due to the effect on the communication disturbance sub-dimension. It is noted that phubbing does not affect life satisfaction in cases where this sub-dimension is not involved (63). In another study examining the relationship between a different phubbing scale and life satisfaction, it was seen that the nomophobia sub-dimension was positively associated with life satisfaction, and the self-isolation and problem acknowledgment sub-dimensions were negatively related (23). All these results suggest that phubbing negatively affects life satisfaction when the individual's communication with the environment is negatively affected. Therefore, the life satisfaction of individuals who avoid face-to-face contact with their environment may not be affected. On the other hand, the life satisfaction of individuals who use online environments to socialize may increase. It is said that one of the underlying causes of phubbing behavior may be multitasking (64). In the case of desk workers, phubbing behavior can have a positive effect on life satisfaction as it enables them to cope with multiple tasks.

This is the first study to evaluate technology-dependent behavioral disorders in desk workers together and to examine the effects of these disorders on life satisfaction and quality of life. However, the study has some limitations. First, since the survey was designed to be cross-sectional, it is impossible to establish a cause-effect relationship between the variables. This part has been tried to be resolved by doing path analysis. However, studies to be conducted in a prospective design on

this subject will be more helpful in revealing causality. It should be kept in mind that the data are evaluated only based on their responses to the applied questionnaire, not by monitoring the individuals. Therefore, there may be partial subjectivity in the answers. In addition, the study was applied online. This may have led to the exclusion of individuals who do not prefer to use online environments. In order to prevent multiple replies from the same person, the e-mail addresses of the individuals were checked. Since the study is voluntary and does not benefit the participants, it is thought there will be no bias or misrepresentation. Within the framework of the hypothesis established at the beginning of the study, only the relationship between technology-related diseases and life satisfaction and quality of life was examined. While evaluating the results, it should be considered that other variables that may affect life satisfaction and quality of life are not included in the model.

As a result, the increasing use of technology in recent years has brought the negative situations of individuals on this issue to the public health agenda. Examining the effects of these disorders on life satisfaction and quality of life provides an opportunity for a holistic evaluation in terms of physical, mental, and social aspects. Reducing technology-dependent behavioral disorders should be included in health and anti-addiction policy intervention programs.

Conflict of interest

The authors declared no conflict of interest.

Funding

No funding was used for the study.

Acknowledgments

None to declare.

Authors' contributions

Concept: Ö.Ö., Design: Ö.Ö., B.Ç., Ö.K., E.K., Data Collection or Processing: Ö.Ö., B.Ç., Ö.K., E.K., Analysis or Interpretation: Ö.Ö., E.K., A.N.K., Literature Search: B.Ç., Ö.K., E.K., Writing: Ö.Ö., B.Ç., Ö.K., E.K.

Ethical Statement

Approval was obtained from Süleyman Demirel University Clinical Research Ethics Committee, the study started. The ethics committee decision date is 13/01/2021 and the number of ethical committee decisions is 7/143.

References

1. We Are Social. Digital 2022 global overview report [Internet]. 2022 Available from: https://wearesocial.com/uk/blog/2022/01/digital-2022-another-year-of-bumper-growth-2.
2. Türkiye İstatistik Kurumu. Hanehalkı bilişim teknolojileri kullanım araştırması [Internet]. 2022. Available from: https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2022-45587.
3. Masaeli N, Billieux J. Is problematic internet and smartphone use related to poorer quality of life? A systematic review of available evidence and assessment strategies. Curr Addict Rep. 2022; 9(3): 235-250.
4. Yıldırım S, Kişioğlu AN. Teknolojinin getirdiği yeni hastalıklar: nomofobi, netlessfobi, fomo. SDÜ Tıp Fakültesi Dergisi. 2018; 25(4): 473-480.
5. Kesici A, Tunç NF. The development of the digital addiction scale for the university students: reliability and validity study. Univers. J. Educ. 2018; 6(1): 91-98.
6. Günüç S, Kayri M. Türkiye'de internet bağımlılık profili ve internet bağımlılık ölçeğinin geliştirilmesi: geçerlik-güvenirlik çalışması. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi 2010; 39(39): 220-232.
7. King ALS, Valenca AM, Silva ACO, et al. Nomophobia: dependency on virtual environments or social phobia? Computers in Human Behavior. 2013; 29(1): 140-144.
8. Bragazzi NL, Del Puente G. A proposal for including nomophobia in the new DSM-V. Psychol Res Behav Manag. 2014; 7: 155-160.
9. Karadağ E, Tosuntaş ŞB, Erzen E, Duru P, Bostan N, Şahin BM, et al. Determinants of phubbing, which is the sum of many virtual addictions: a structural equation model. J Behav Addict. 2015; 4(2): 60-74.
10. Anshari M, Alas Y, Hardaker G, Jaidin JH, Smith M, Ahad AD. Smartphone habit and behavior in Brunei: personalization, gender, and generation gap. Comput Human Behav. 2016; 64: 719-727.
11. Chotpitayasunondh V, Douglas KM. The effects of "phubbing" on social interaction. J Appl Soc Psychol. 2018; 48(6): 304-316.
12. Przybylski AK, Murayama K, DeHaan CR, Gladwell V. Motivational, emotional, and behavioral correlates of fear of missing out. Comput Human Behav. 2013; 29(4): 1841-1848.
13. Öztürk UC. Bağlantıda kalmak ya da kalmamak işte tüm korku bu: internetsiz kalma korkusu ve örgütsel yansımaları. Journal of International Social Research. 2015; 8(37): 629-638.
14. Ergin Z, Ozer A. Unravelling the relation between fear of missing out, time spent on the phone, sex, alienation, and nomophobia. Psychol Rep. 2021; 126(1): 181-197.
15. Hoşgör H, Coşkun F, Çalişkan F, Hoşgör DG. Relationship between nomophobia, fear of missing out, and perceived work overload in nurses in Turkey. Perspect Psychiatr Care. 2021; 57(3): 1026-1033.
16. Butt AK, Arshad T. The relationship between basic psychological needs and phubbing: fear of missing out as the mediator. Psych J 2021. 10(6): 916-925.
17. Tandon A, Dhir A, Talwar S, Kaur P, Mäntymäki M. Social media induced fear of missing out (FoMO) and phubbing: behavioural, relational and psychological outcomes. Technol Forecast Soc Change. 2022; 174: 121149.
18. Aykaç S, Yıldırım Ş. Gelişen dünyada nomofobi ve sosyotelist olma-sosyotelizme maruz kalmanın etkileri. Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi. 2021; 21(1): 243-256.
19. Bacaksız FE, Tuna R, Alan H. Nomophobia, netlessphobia, and fear of missing out in nursing students: a cross-sectional study in distance education. Nurse Educ Today. 2022; 118: 105523.
20. Anand M, Arora D. Burnout, life satisfaction and quality of life among executives of multinational companies. Journal of the Indian Academy of applied Psychology. 2009; 35(1): 159-164.
21. Pavot W, Diener E. Review of the satisfaction with life scale. Psychol Assess. 1993; 5(2): 164-172.
22. Wegmann E, Oberst U, Stodt B, Brand M. Online-specific fear of missing out and internet-use expectancies contribute to symptoms of Internet-communication disorder. Addict Behav Rep. 2017; 5: 33-42.

23. Ergün N, Göksu İ, Sakız H. Effects of phubbing: relationships with psychodemographic variables. Psychol Rep. 2020; 123(5): 1578-1613.

24. Fioravanti G, Casale S, Benucci SB, Prostamo A, Falone A, Ricca V,et al. Fear of missing out and social networking sites use and abuse: a meta-analysis. Comput Human Behav. 2021; 122: 106839.

25. Rodríguez-García AM, Moreno-Guerrero AJ, Lopez Belmonte J. Nomophobia: an individual's growing fear of being without a smartphone- a systematic literature review. Int J Environ Res Public Health. 2020; 17(2): 580.

26. Ivanova A, Gorbaniuk O, Błachnio A, Przepiórka1 A, Mraka N, Polishchuk V et al. Mobile phone addiction, phubbing, and depression among men and women: a moderated mediation analysis. Psychiatr Q. 2020; 91(3): 655-668.

27. Schmidt S, Mühlan H, Power M. The EUROHIS-QOL 8-item index: psychometric results of a cross-cultural field study. Eur J Public Health. 2006; 16(4): 420-428.

28. Eser E, Lağarlı T, Baydur H, Akkurt V, Akkuş H, Arslan E, et al. EUROHIS (WHOQOL-8. Tr) Türkçe sürümünün Türk toplumundaki psikometrik özellikleri. Turkish Journal of Public Health. 2010; 8(3): 136-152.

29. Diener ED, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. J Pers Assess. 1985; 49(1): 71-75.

30. Dağlı A, Baysal N. Yaşam doyumu ölçeğinin Türkçe'ye uyarlanması: geçerlik ve güvenirlik çalışması. Elektronik Sosyal Bilimler Dergisi. 2016; 15(59).

31. Yildirim C, Correia AP. Exploring the dimensions of nomophobia: development and validation of a self-reported questionnaire. Comput Human Behav. 2015; 49: 130-137.

32. Yildirim C, Sumuer E, Adnan M, Yildirim S. A growing fear: prevalence of Nomophobia among Turkish college students. Information Development. 2016; 32(5): 1322-1331.

33. Gökler ME, Aydin R, Ünal E, Metintaş S. Sosyal ortamlarda gelişmeleri kaçırma korkusu ölçeğinin Türkçe sürümünün geçerlilik ve güvenilirliğinin değerlendirilmesi. Anadolu Psikiyatri Derg. 2016; 17: 53-59.

34. Balta S, Emirtekin E, Kircaburun K, Griffiths MD. Neuroticism, trait fear of missing out, and phubbing: the mediating role of state fear of missing out and problematic Instagram use. Int J Ment Health Addict. 2020; 18: 628-639.

35. Erzen E, Odaci H, Yeniçeri İ. Phubbing: which personality traits are prone to phubbing? Soc Sci Comput Rev. 2021; 39(1), 56-69.

36. Guazzini A, Duradoni M, Capelli A, Meringolo P. An explorative model to assess individuals' phubbing risk. Future Interne.t 2019; 11(1): 21.

37. Elhai JD, Gallinari EF, Rozgonjuk D, Yang H. Depression, anxiety and fear of missing out as correlates of social, non-social and problematic smartphone use. Addict Behav. 2020; 105: 106335.

38. Elhai JD, Yang H, Fang J, Bai X, Hall BJ. Depression and anxiety symptoms are related to problematic smartphone use severity in Chinese young adults: fear of missing out as a mediator. Addict Behav. 2020; 101: 105962.

39. Hadlington L, Binder J, Stanulewicz N. Fear of missing out predicts employee information security awareness above personality traits, age, and gender. Cyberpsychology, Behavior, and Social Networking, 2020; 23(7): 459-464.

40. Kargın M, Türkben Polat H, Coşkun Şimşek D. Evaluation of internet addiction and fear of missing out among nursing students. Perspectives in psychiatric care. 2020; 56(3): 726-731.

41. Oberst U, Wegmann E, Stodt B, Brand M, Chamarro A. Negative consequences from heavy social networking in adolescents: the mediating role of fear of missing out. J Adolesc. 2017; 55: 51-60.

42. León-Mejía AC, Gutiérrez-Ortega M, Serrano-Pintado I, González-Cabrera J. A systematic review on nomophobia prevalence: surfacing results and standard guidelines for future research. PLoS ONE. 2021; 16(5): e0250509.

43. Eskin Bacaksiz F, Tuna R, Alan H. Nomophobia, netlessphobia, and fear of missing out in nursing students: a cross-sectional study in distance education. Nurse Educ Today. 2022; 118: 105523.

44. Arslan H, Tozkoparan SB, Kurt AA. Öğretmenlerde mobil telefon yoksunluğu korkusunun ve gelişmeleri kaçırma korkusunun incelenmesi. Erzincan Üniversitesi Eğitim Fakültesi Dergisi. 2019; 21(3): 237-256.

45. Hoşgör H, Hoşgör GD. The relationship among nomophobia, fear of miss-ing out and demographic variables: example of the healthcare manager candidates. Current Addiction Research. 2019; 3(1): 16-24.

46. Yaman Z, Kavuncu B. Üniversite öğrencilerinin sosyal gelişmeleri kaçırma korkusunun ve sosyal ağ kullanım amacının nomofobi düzeyine etkisi. Sciences Researches Journal. 2019; 14: 555-570.

47. Gezgin DM, Hamutoglu NB, Sezen-Gultekin G, Gemikonakli O. Relationship between Nomophobia and fear of missing out among Turkish university students. Cypriot Journal of Educational Sciences. 2018; 13(4): 549-561.

48. Muench R, Muench C. Me without my smartphone? Never! Predictors of willingness for smartphone separation and nomophobia. HCI International 2020 - Posters. 2020;1226:217-223.

49. Davey S, Davey A, Raghav SK, Singh JV, Singh N, Blachnio A, et al. Predictors and consequences of "phubbing" among adolescents and youth in India: an impact evaluation study. J Family Community Med. 2018; 25(1): 35-42.

50. Fang J, Wang X, Wen Z, Zhou J. Fear of missing out and problematic social media use as mediators between emotional support from social media and phubbing behavior. Addict Behav. 2020;107:106430.

51. Franchina V, Vanden Abeele M, Van Rooij AJ, Lo Coco G, De Marez L. Fear of missing out as a predictor of problematic social media use and phubbing behavior among flemish adolescents. Int J Environ Res Public Health 2018; 15(10): 2319.

52. Schneider FM, Hitzfeld S. I ought to put down that phone but ı phub nevertheless: examining the predictors of phubbing behavior. Soc Sci Comput Rev. 2019; 39(6): 1075-1088.

53. Yam FC, Kumcagiz H. Adaptation of general phubbing scale to turkish culture and ınvestigation of phubbing levels of university students in terms of various variables. Addicta: The Turkish Journal on Addictions. 2020; 7(1): 48-60.

54. WHO Quality of Life Assessment Group. What quality of life?. World Health Forum. 1996; 17(4): 354-356.

55. Galhardo A, Loureiro D, Massano-Cardoso I, Cunha M. Adaptation of the European Portuguese Version of the nomophobia questionnaire for adolescents, factor structure and psychometric properties. Int J Ment Health Addict. 2022; 1-18.

56. Sharma M, Mathur D, Jeenger J. Nomophobia and its relationship with depression, anxiety, and quality of life in adolescents. Ind Psychiatry J. 2019; 28(2): 231-236.

57. Yılmaz T, Bekaroğlu E. Does interpersonal sensitivity and

paranoid ideation predict nomophobia: an analysis with a young adult sample. Curr Psychol. 2022; 41(2): 1026-1032.

58. Bano N, Khan MA, Asif U, Beer J, Rawass H. Effects of Nomophobia on anxiety, stress and depression among Saudi medical students in Jeddah, Saudi Arabia. J Pak Med Assoc. 2021; 71(3): 1-11.

59. Önal Ö, Çoban B, Doğan E, Akyol MH, Yalcinkaya FE, Kisioğlu AN, et al. Netlessphobia based on personality traits in university students. Psyc Res Educ Soc Sci. 2023; 4(2): 39-47.

60. Yu L, Shek DTL. Testing longitudinal relationships between Internet addiction and well-being in Hong Kong adolescents: cross-lagged analyses based on three waves of data. Child Indic Res 2018; 11: 1545-1562.

61. Polat F, Karasu F. Examining the correlation between phubbing and life satisfaction in adults during covid-19 pandemic. Journal of Dependence. 2022; 23(2): 191-198.

62. Parmaksız İ. Predictive effect of phubbing and life satisfaction on depression symptoms in adults. Journal of Dependence. 2021; 22(3): 236-247.

63. Çikrikci Ö, Griffiths MD, Erzen E. Testing the mediating role of phubbing in the relationship between the big five personality traits and satisfaction with life. Int J Ment Health Addict. 2019; 1-13.

64. Al-Saggaf Y, O'Donnell SB. Phubbing: Perceptions, reasons behind, predictors, and impacts. Hum Behav Emerg Technol. 2019; 1(2): 132-140.