Received: 15 May 2021 | Revised: 23 June 2021 | Accepted: 25 July 2021

DOI: 10.1111/ppc.12924

ORIGINAL ARTICLE

Perspectives in PSYCHIATRIC CARE WILEY

Development of Fırat Netlessphobia Scale and investigation of its psychometric properties

Yalçın Kanbay[1] | Meryem Fırat PhD, RN[2] | Aysun Akçam PhD[3] | Sevil Çınar PhD, RN[4] | Özkan Özbay[5]

[1]Department of Psychiatric Nursing, Faculty of Health Sciences, Artvin Coruh University, Artvin, Turkey

[2]Department of Psychiatric Nursing, Faculty of Health Sciences, Erzincan Binali Yıldırım University, Erzincan, Turkey

[3]Department of Turkish Language Teaching, Faculty of Education, Necmettin Erbakan University, Konya, Turkey

[4]Faculty of Health Sciences, Artvin Çoruh University, Artvin, Turkey

[5]Distance Education Application and Research Center, Artvin Coruh University, Artvin, Turkey

Correspondence
Sevil Çınar, Faculty of Health Sciences, Artvin Çoruh University, Artvin, Turkey.
Email: cinarsevil87@gmail.com

Abstract

Purpose: The present study aimed to determine the level of Netlessphobia in the general population by developing the "Fırat Netlessphobia Scale."

Design and Measures: Trial form consisting of 19 items, which was tested in terms of language and psychometric validity, was applied to a sample group of 690 people. The reliability of the scale was verified by evaluating Cronbach's α reliability coefficient and test-retest consistency.

Results: The developed "Fırat Netlessphobia Scale" can account for 60.7% of the variance related to Netlessphobia. Cronbach's α reliability coefficient of the scale was calculated as 0.93.

Conclusions: According to the findings, the Fırat Netlessphobia Scale is a cost-effective scale that facilitates the valid and reliable estimation of high variance and a low number of items.

Practice Implications: This practical and cost-effective scale is widely applied owing to its small number of items and short expressions. The present study emphasizes the importance of exploring Netlessphobia and the need for future research in this area to recognize the risk groups and establish protection strategies.

KEYWORDS

Internet addiction, Netlessphobia, reliability, scale development, validity

1 | INTRODUCTION

The rapid advancement of technology has amplified the usage area and rate of the Internet. Besides, the concept of "Social Media" has entered our lives. It has been determined that active user-oriented and enthusiastic individuals get captivated by the spell of these social media platforms and try to quench their satisfaction by exploiting these platforms a lot (Fraccastoro et al., 2021; Subramanian, 2017). Nowadays, the rapid evolution of technology-enabled significant progress in communication technologies that are also responsible for the greater use of the Internet and social media platforms by people (Drago, 2015). The study conducted by the Pew Research Center (2019) reported that more than 73% of the American adult population use the Internet at home (Pew Research Center, 2017). The data from another study in Turkey (2019) documented 72% of the population are Internet users, whereas 63% of the population are active social media users (Tosun et al., 2020). These findings indicated that everyday life is undergoing a fast digital transformation.

The rapid modification experienced in communication technologies has affected the access of people of all ages to both information and communication technologies and the Internet today (Aceto et al., 2018; Alencar et al., 2019). These developments have enabled easy access to information and communication, thereby making the Internet one of the essential elements in our day-to-day lives. These have resulted in the fear of deprivation which we can call digital captivity (Janssen et al., 2017; Savci & Aysan, 2017). The concept of "Netlessphobia," which is used to

mean "fear of internet deprivation," is defined as "the individual's being unable to stay in an environment without Internet and being anxious about Internet deprivation, rather than excessive use of the internet" (Alt & Boniel-Nissim, 2018; Brand et al., 2014; Rozgonjuk et al., 2020).

The Internet, which has considerable importance in the lives of people, has almost become an integral part of the individual. Most Internet users these days have become addicted to it and also suffer from the fear of deprivation (Bisen & Deshpande, 2018; Yayan et al., 2019). Technologies, such as all social networks, e-state, e-banking, and electronic shopping opportunities, which are aimed to connect ours lives, have ended up in developing Internet addiction among individuals these days (Longstreet et al., 2019). Especially, the increase in virtual communication environments and the widespread use of social media have restricted people from establishing face-to-face communication with each other and have kept them away from real life. This situation compels individuals not to be in an environment without the Internet and not to stay without Internet (Subramanian, 2017).

For an individual to be accepted as "Netlessphobic," it is not enough that an individual is spending most of one's time only with the Internet and social media tools and having several technological devices such as portable tablets and smartphones (Brand et al., 2014; Savci & Aysan, 2017). It requires the individual to be in trouble in non-Internet environments, to always have a desire in his/her mind to check the likes of social media accounts and the pages of the people they follow, and to react physically and mentally in non-Internet environments (Bragazzi & Del Puente, 2014; Tutar et al., 2021). Research has established the primary symptoms of Netlessphobia include being unable to prefer those, which do not have an Internet connection in places to visit, thinking that life stops when there is no Internet, being online for more than 8 h a day, taking pleasure from the notifications of social media applications, and being unable to stay away from the Internet even for a short time (King et al., 2013).

There are a limited number of studies on Netlessphobia in the literature. Apart from the few studies directly related to Netlessphobia, there are some related studies such as mobile phone deprivation and Internet addiction (Akman & Murşit, 2018; Ayar et al., 2017; Roberts et al., 2014). Various findings were highlighted in a study by adapting the scale of Internet addiction into Netlessphobia (Akman & Murşit, 2018). However, a valid and reliable Netlessphobia scale could not be developed. This justified the aim of this study to introduce a new objective measurement tool to the literature by developing the "Fırat Netlessphobia Scale" and conducting its validity and reliability.

2 | DESIGN AND METHODS

2.1 | Purpose of research and type

This is a methodological study. The objective of this study is to introduce a new objective measurement tool to the literature by developing the "Fırat Netlessphobia Scale" and to specify its validity and reliability. There are several stages in the development of the Fırat Netlessphobia Scale. These stages include examination of the theoretical structure, ethical practices, writing down the items, preparing the draft form, pilot application, expert opinion, preparing the trial form, applying the trial form to sample, findings (validity and reliability), and putting the scale into final form.

2.2 | Development of Fırat Netlessphobia Scale

2.2.1 | Examination of the theoretical structure

At this stage, the literature and previously published studies related to the concept of Netlessphobia were reviewed, and the conceptual framework of the subject was determined (Bragazzi & Del Puente, 2014; Bragazzi et al., 2019; Anna Lucia S King et al., 2010; Savci & Aysan, 2017).

2.2.2 | Writing down the pool of questions

At the literature review stage, studies on the Internet, Internet addiction, and phobia in online and printed references were explored, and the items pertaining to the concepts were included in the question pool. After these processes, the question pool consisted of a total of 26 items (Bragazzi et al., 2019; Anna Lucia Spear King et al., 2013; Savci & Aysan, 2017).

2.2.3 | Preparing the draft form

At this stage, consulting with the expert, it was decided that the 5-point Likert questionnaire would be useful and convenient for this study. Likert-type scales are widely applied too to estimate thoughts, beliefs, and attitudes (Turan et al., 2015) by combining multiple Likert-type questions (DeVellis, 2014). Likert-type scales are one of the methods for placing individuals on the psychological dimension according to a predetermined set of stimulus, criterion, or criteria (Erkuş, 2014). After the form of the questionnaire was decided, an expert opinion was taken again, and the form was finalized into a 5-point Likert-type draft form with the opinions "Strongly Disagree," "Disagree," "Moderately Agree," "Agree," and "Strongly Agree."

2.2.4 | Pilot application

After the draft form is prepared, a pilot study is required to determine whether or not these expressions are perceived correctly by the sample. Literature substantiates that 30–50 people could be enough for pilot application (Şeker & Gençdoğan, 2006). For this reason, a 26-item draft form was provided to a sample of 60 people with similar characteristics to the sample of the study. As a result of the

application, the items, which were not understood or were misunderstood, were identified, and a draft form consisting of 22 items was prepared following the required corrections.

2.2.5 | Expert opinion

To verify content validity, the draft form, which was revised after the pilot application, was sent to seven experts (statistician, assessment and evaluation specialist, psychologist, and nurse) consisting of academicians experienced in scale development studies and health sciences, for their expert opinion. Based on the expert recommendations, the draft form was further revised and reduced to 19 items. Later, this draft form consisting of 19 items was re-evaluated by the experts in terms of Turkish language validity and corrected in terms of language and grammar. After the necessary revisions, the draft form comprised a total of 19 items.

Preparing the trial form: Items in the draft form were organized as follows; 1 = "Strongly Disagree," 2 = "Disagree," 3 = "Moderately Agree," 4 = "Agree," 5 = "Strongly Agree," and a 19-item trial form was obtained.

2.3 | Sampling and participants

The resultant trial form with 19 items was applied to a sample, including 690 participants. The study subjects encompassed 69.3% female participants, with an age range of 18–62 years and an average age of 25.7 ± 8.9. The data were collected in an online environment. The prepared questionnaires were uploaded on the Internet environment and sent to the participants through snowball sampling. An improbable sampling method was employed for sample selection in accordance with the goal of the study. The inclusion criteria of the present study were individuals with a smart device and Internet connection since the aim of this study was to develop a scale for determining the Internet deprivation and associated phobia of individuals.

Two criteria were considered to determine the required sample size for this study. One of them was the adequacy of the number of individuals to be included in the sample, and the other was the Kaiser–Meyer–Olkin (KMO) test, which is conducted to estimate the adequacy of the data obtained from the sample. Although there are various proposals in the literature for the sample size to be included in the scale development studies, there is very little consensus among the authors regarding how large the sample should be (Pallant, 2017). One of them is the rule of 10, which implies that there should be at least 10 participants per variable (Şencan, 2005). While Çokluk (2014) suggested that the sample size should not fall below 100 to perform factor analysis (p. 207), Comrey and Lee stated that 100 is poor, 200 is medium, 300 is good, 500 is very good, and 1000 is excellent (Çokluk et al., 2014). In the evaluation of KMO, a KMO value closer to 1 is considered excellent, whereas a KMO value below 0.50 is considered unacceptable. According to this evaluation, 0.50 s are considered poor, 0.60–0.70 average, 0.80 s very good, and 0.90 s excellent (Tavsancıl, 2002). In the present study, the sample size was above 500 and KMO value was 0.954, which signifies that the sample size was sufficient and the data obtained from the sample had the required adequacy.

2.4 | Validity and reliability

Validity is the convenience of the measurement tool used with the characteristic to be measured, complete reflection of the characteristics to be measured by the data, and also the usefulness of the data towards the goal (Şencan, 2005).

Reliability, on the other hand, can be defined as having test or scale results that reveal the phenomenon related to the conceptual structure correctly and having the measurement tool provide similar results also when applied in different places, at different times, and with different masses selected from the same main mass (Şencan, 2005).

"Principal Components Analysis," which is one of the "Explanatory Factor Analysis (EFA)" techniques, was adopted to elucidate the construct validity of the Netlessphobia Scale. Confirmatory Factor Analysis (CFA) was exploited for the model fit of the resultant structure, and the values of the goodness of fit were examined. Exploratory factor analysis is used to accumulate the items in the measurement tool under certain subfactors (Can, 2017). In factor analysis, when the factors are removed for the first time, most variables are not distinct since they are gathered in the most important factor with the highest load, thereby making them difficult to interpret. For this reason, the process of clarifying the factors, namely the "rotation" process, is performed. At the end of the rotation, factors find items having a high correlation with them, and as a consequence, the interpretation of the factors becomes easier (Can, 2017). "Orthogonal rotation techniques" are used when there is no theoretical structure requiring correlation of the factors with each other in the rotation process; if there is a structure that requires the factors to be correlated with each other, "oblique rotation techniques" is used (Can, 2017; Sönmez & Alacapınar, 2016).

It was presumed that there may be a correlation between the factors in this study, and it was requested to reveal a structure formed by theoretically related factors. Henceforth, one of the oblique rotation techniques, the "direct oblimin technique" was preferred as a factor rotation technique. For the internal validity of the scale, a 27% lower-upper group comparison was made. Cronbach's α reliability coefficient (Cronbach's α) was calculated to assess the reliability of the scale, and also test-retest consistency was used.

2.5 | Ethics approval

Ethical approvals required for the study were taken from University Scientific Research and Publication Ethics Board (18.05.2017 date and 2017/3 session and decision no: 9).

3 | RESULTS

This section includes preliminary statistics as well as findings of the validity and reliability of the scale.

3.1 | Preliminary statistics

At this stage, firstly, the suitability of the data for factor analysis was investigated. To determine the suitability of the data for factor analysis, it is recommended to perform item reliability, compute the Kaiser–Meyer–Olkin (KMO) coefficient, and perform Bartlett's test of sphericity before factor analysis (Buyukozturk, 2010; Erkuş, 2014).

3.2 | Item reliability that is-the average of the item total score correlation coefficients

It evaluates the correlation between the total scores of the scale/test and the scores of each item (Şencan, 2005). An item-total score correlation coefficient below 0.30 indicates a problem with the item (Şencan, 2005), and thus, the item should be changed or omitted from the scale.

Table 1 summarizes the item-total item correlation of the Netlessphobia Scale. In the analysis, the correlation coefficient of 1 item (M19) was found to be below 0.30 and, therefore, was omitted from the scale. The correlation coefficient of the remaining 18 items varied between 0.529 and 0.787.

3.3 | Kaiser–Meyer–Olkin (KMO) coefficient and Bartlett's test of sphericity

The KMO coefficient gives information regarding the appropriateness of the data matrix for factor analysis and the suitability of the data structure for factor extraction. KMO is expected to be higher than 0.60. The presence of correlation between variables based on partial correlations was examined by Bartlett's test. The significance of the calculated χ^2 statistics can be considered as proof of the normality of the scores (Buyukozturk, 2010). KMO value for the 18 items, calculated to develop the Netlessphobia Scale, was 0.95, and the result of Bartlett's test was 8200.599 ($p < 0.0001$). These values substantiated that the trial form was appropriate for factor analysis.

3.4 | Validity

The validity of the scale was investigated by examining the construct validity and internal validity. Factor analysis was performed to determine the construct validity, whereas lower-upper groups were compared with ascertain internal validity.

3.4.1 | Construct validity

Construct validity was estimated by factor analysis. Factor analysis is a multivariate statistic that helps to find and discover a small number of unrelated and conceptually meaningful new variables (factors, dimensions) by bringing p related variables together (Buyukozturk, 2010). The literature recommends various criteria for item selection in factor analysis. The first one of these criteria is related to the item factor loading value. Although the items' factor loading value of more than or equal to 0.45 is a suitable criterion for selection, this value can decrease to 0.30. In this study, items with a factor loading value of more than or equal to 0.45 were taken into account in item selection. The second criterion is that items have a high loading value in a single factor and a low loading value in other factors. The difference between two high loading values is recommended to be at least 0.10 (Buyukozturk, 2010; Sönmez & Alacapınar, 2016). The present study considered this criterion, and items with at least 0.10 values between two loading values were evaluated as overlapping items and were excluded from the analysis.

Factor analysis determined five items (M_2, M_9, M_{11}, M_{13}, and M_{16}) with an item loading value of less than 0.45, one item (M_{17}) as an overlapping item. These items were thus excluded from the study, and the study was continued with the remaining 12 items.

The factorization in the scale was identified by exploratory factor analysis. Exploratory factor analysis is a process, which is used to determine how many titles the items (variables), prepared as a draft and found in an applied measurement tool, would be gathered under. The objective of this analysis is to identify the factors with reference

TABLE 1 Values of item-total item test correlation

Item No	Item Correlation	Item No	Item Correlation	Item No	Item Correlation	Item No	Item Correlation
M1	0.747	6	0.769	11	0.634	16	0.735
M2	0.591	7	0.683	12	0.692	17	0.613
M3	0.726	8	0.759	13	0.588	18	0.751
M4	0.787	9	0.529	14	0.734	*19	0.286
M5	0.667	10	0.722	15	0.753		

*Items with item-item-total correlation results of < 0.30 which were omitted from the scale.

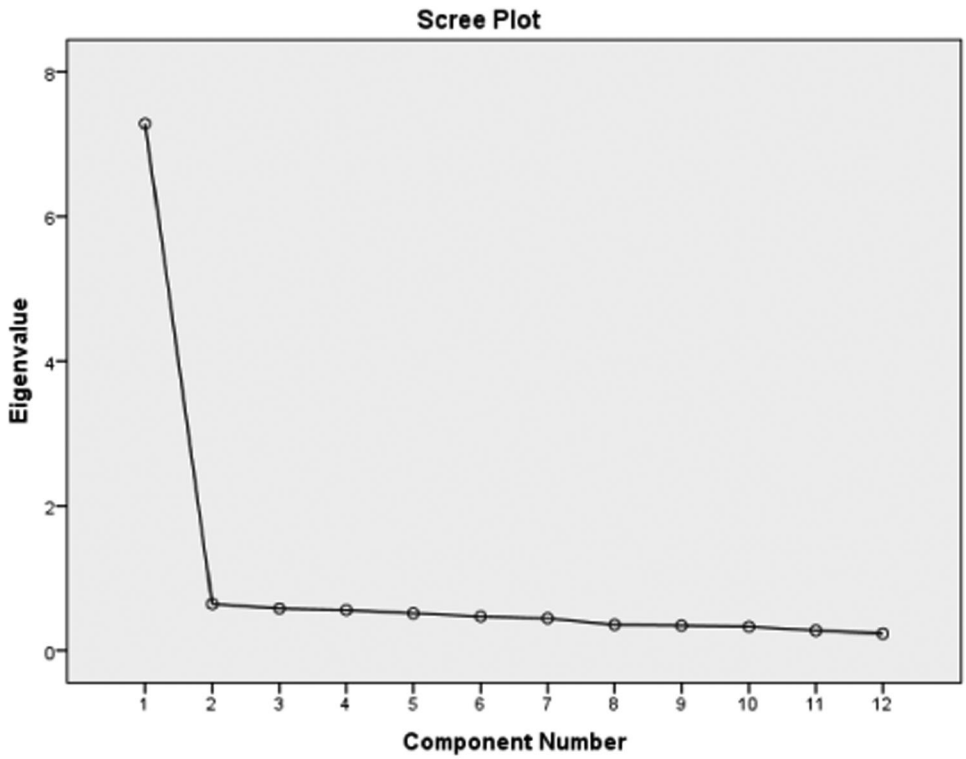
to correlations between variables. This method finds widespread application in assessing the construct validity of the scale (Buyukozturk, 2010; Sönmez & Alacapınar, 2016). The criteria for determining the number of factors to be included in a scale is that the eigenvalue of each subscale in factor analysis must be more than or equal to 1 and account for at least 5% of the variance. Moreover, the opinion that the variance explained by the scale is greater than the variance which cannot be explained by the scale is acknowledged as the basic principle (Sönmez & Alacapınar, 2016). Furthermore, examining the line chart of factor analysis is one of the methods that aid the researchers in deciding how many factors the scale will consist of. In this study, these criteria were given maximum emphasis. While determining the factors, attention was paid that each factor had an eigenvalue greater than 1 and could account for at least 5% of the variance, the total variance was above 50%, and items were selected accordingly. The factor analysis conducted following these criteria and the examination of the line chart, together decided that the scale could consist of a single factor with an eigenvalue greater than 1.

Analysis of the line chart of Fırat Netlessphobia Scale proposed that the scale could consist of a single dimension because an elbow formed in the plot (Plot 1).

The results reveal that this scale with one factor and 12 items can account for 60.7% of the variance related to the concept (-Table 2). The variation of the loading values of the factors ranges between 0.709 and 0.847. *Internal validity*: The prevalence of internal validity of the items, which were decided to remain in the scale, was verified with the help of the "Independent samples *t*-test". The test scores obtained from the scale were ranked in ascending order, and 27% of the sample was determined to be 186 people. Thereafter, 186 people with the lowest scale score were re-coded as "lower group," while 186 individuals with the highest scale score were re-coded as the "upper group." The remaining participants were not included in the process. After this process, an "independent samples *t*-test" was conducted to ascertain the significance of the difference between the lower group and the upper group. The findings were detailed in Table 3.

On scrutinizing the findings of internal validity, it was observed that the mean scores of the lower group and the upper group were 14.6 ± 2.538 and 43.8 ± 5.251 points, respectively. According to the analysis, the difference between Fırat Netlessphobia Scale lower group-upper group means scores was found to be statistically significant ($p < 0.001$). Based on this finding, it can be asserted that Fırat Netlessphobia Scale is able to correctly distinguish between the low score group and the high score group, and it was also established that the scale has internal validity.

CFA further tested the construct, with a single dimension and 12 items obtained from EFA, in terms of model fit. The results claimed that the factor loading values of some items were found to be quite low and failed to fit with the model. Moreover, it was observed that the goodness of fit values of the model was not at the desired level, and as a consequence, the incompatible items were deleted. These processes were reiterated until appropriate goodness of fit values were attained for CFA, and suitable factorization was achieved for EFA. Finally, the goodness of fit values



PLOT 1 Line chart of Fırat Netlessphobia Scale

TABLE 2 Factor items and item factor loading values

Item no	Item	Loading value
4	I get anxious in places with no Internet connection	0.847
6	I often check if I have an Internet connection	0.828
8	When my Internet is disconnected, I feel as if life has stopped	0.812
1	I feel nervous in places where Internet use is limited	0.803
15	I cannot stand not having the Internet even for a short time	0.800
16	I constantly check whether I'm connected to the Internet	0.789
3	I am afraid of being out of coverage area	0.780
18	I keep the devices from which I can connect to the Internet within a reaching distance at any time	0.775
10	I am afraid of the loss of Internet connection because I could miss new developments	0.772
5	I am concerned about my phone running out of battery	0.731
12	I greatly enjoy the notifications coming through the Internet	0.711
7	I prefer to go places with Internet connection	0.709
	Explained variance % = 60.701	

TABLE 3 Internal validity results of Fırat Netlessphobia Scale

Group	*n*	Mean	Standard error	*t*	*p*
Lower Group	186	14.6	2.538	−63.968	0.000
Upper Group	186	43.8	5.251		

*$p < 0.001$.

of the construct encompassing a single dimension and 12 items were obtained by omitting six items from the model. The present study documented the range of the standardized regression coefficients of the items in the scale varied from 0.698 to 0.814. In accordance with these findings, the obtained fit indices also confirmed the measurement model for the scale. Accordingly, fit indices for the single factor construct were $\chi^2 = 197{,}64$, $\chi^2/df = 3.80$, NFI = 0.96, TLI = 0.97, CFI = 0.97, GFI = 0.95, AGFI = 0.93, and RMSEA = 0.06. This goodness of fit values obtained in a single factor construct rationalized the acceptability of the model (Figure 1).

3.5 | Reliability

Internal consistency should be ensured initially in Likert-type scales. Internal consistency deals with the extent to which the items constituting the scale are compatible with each other. The Cronbach's α reliability coefficient represents the most convenient way for this consistency. Furthermore, if necessary, reliability can be evaluated through test-retest (Pallant, 2017; Tezbaşaran, 2008). The present study validated the reliability of the scale by computing both Cronbach's α reliability coefficient and test-retest consistency.

3.5.1 | Cronbach's α

Reliability coefficients can be calculated using various methods in the development of measurement tools used to assess cognitive and affective characteristics. One of these methods is Cronbach's α reliability. Although it is recommended to have a reliability coefficient above 0.70, which can be regarded as sufficient for a Likert-type scale, it should be as close to 1 as possible (DeVellis, 2014; Tezbaşaran, 2008). For research scales, a Cronbach's α value below 0.60 is considered as "unacceptable"; between 0.60 and 0.65 "undesirable"; between 0.65 and 0.70 "minimally acceptable"; between 0.70 and 0.80 "noteworthy"; between −0.80 and 0.90 "very good"; and above 0.90 "the researcher should consider shortening the scale" (DeVellis, 2014). The present study revealed the Cronbach's α value as 0.93 for the overall scale. This determined value signifies the high reliability of the items in the scale, and it also indicates that they aim to measure the same concept.

3.5.2 | Test-retest consistency

For the reliability of the scale, along with Cronbach's α reliability coefficient, the researchers computed the test-retest consistency of the scale. This method was preferred because it was not expected that there would be a significant change in the Netlessphobia status of the sample. Test-retest reliability is a measure of the power of a measurement tool to provide consistent results from application to application (Tezbaşaran, 2008). The present study engaged 60 individuals from the study population at 4-week intervals for test-retest reliability of the validated 12-item form. The outcome of this application illustrated no statistically

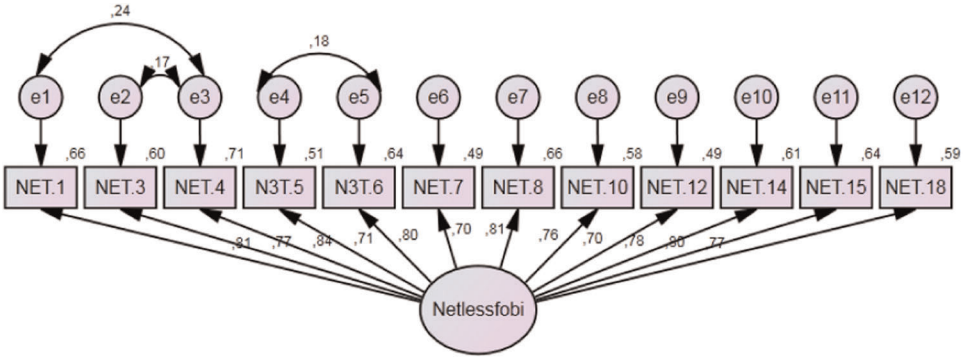


FIGURE 1 Model fit for Fırat Netlessphobia Scale

significant difference between the two measurements ($p > 0.05$). This finding thus substantiated that the resultant scale was reliable and reliably measured the level of Netlessphobia in individuals.

4 | DISCUSSION AND CONCLUSION

Determination of the factor structure of the scale relies on various criteria in scale development studies. Some of these criteria are that the variance explanation percentage for each factor obtained is at least 5%, and the total variance explained by the scale is greater than the variance that the scale cannot explain (Sönmez & Alacapınar, 2016). The present study investigated the validity and reliability of the Fırat Netlessphobia Scale, which manifested a single-dimension construct, and the percentage of variance it could explain was found to be 60.7%. This finding ensues a considerably high variance for a single-dimension scale and is thus acceptable in terms of the literature.

The ability to significantly discriminate between groups with low and high scores on the scale establishes another evidence of the internal validity of the scale. This encouraged the comparison between the lower and upper groups, and it was witnessed that the scale was able to accurately distinguish groups with low and high scores. These findings were considered to be relevant as far as the internal validity of the scale is concerned.

The present research employed Cronbach's α reliability coefficient to elucidate the reliability of the scale. The Cronbach's α reliability coefficient of the scale was found to be 0.93, which signified that the items in the scale had high reliability and are aimed to measure the same concept (DeVellis, 2014). Literature has documented the reference range of Cronbach's α value as follows: below 0.60 is recommended as "unacceptable"; between 0.60 and 0.65 "undesirable"; between 0.65 and 0.70 "minimally acceptable"; between 0.70 and 0.80 "noteworthy"; between 0.80 and 0.90 "very good"; and above 0.90 "the researcher should consider shortening the scale"(DeVellis, 2014).

This scale, developed to estimate the level of Netlessphobia in the general population, comprises of a single dimension and 12 items and explains 60.7% of the variance for Netlessphobia.

4.1 | Implications for psychiatric nursing practice

The present study performed the validity and reliability of this scale and also examined the psychometric properties. A small number of items and short expressions are the major advantages of this practical and cost-effective scale. In line with all these results, it was decided to present the scale for the use of those researchers who will study the relevant issue. The reliability of the scale will, in turn, be enhanced by supporting the scale with further studies and screening its reliability. For the researchers, applying the scale on groups younger than 18 years of age, it is recommended to assess the factor structure of the scale via confirmatory factor analysis.

To our best knowledge, this study is the first to develop a self-reported measure to evaluate the severity of Netlessphobia among the general population. With its novel approach to investigating Netlessphobia as a theoretical construct, this study provides a better platform to understand the dimensions of Netlessphobia. The present study emphasizes the importance of exploring Netlessphobia and the need for future research in this area to recognize the risk groups and establish protection strategies. Thus, understanding factors that contribute to Internet addiction and Netlessphobia among people will yield better use of mobile applications in an educational context in the future.

4.2 | Scale instruction

The present study aimed to measure the Netlessphobia level of individuals in the general population by developing the "Fırat Netlessphobia Scale." Analyses indicated the acceptability of the "Fırat Netlessphobia Scale" with regard to its scope, content, and construct.

With a single dimension and 12 items, the developed "Fırat Netlessphobia Scale" can explain 60.7% of the total variance. Cronbach's α reliability coefficient was calculated as 0.93 for the overall scale indicating significant reliability. While the minimum score to be obtained from this scale, which has no reversely scored item, is 12, its maximum score is 60 points. A higher score implies elevated levels of Netlessphobia in the subject.

The validity and reliability of the scale were studied in the general population, and it is convenient for use by people older than 18 years of age. It is recommended to apply the scale to individuals at a younger age to ensure its validity and reliability further.

ACKNOWLEDGMENT

This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests or personal relationships that could have appeared to influence the work reported in this article.

AUTHOR CONTRIBUTIONS

Yalçın Kanbay: Conceptualization, Data curation, Funding acquisition, Investigation; Methodology, Project administration, Supervision; Validation, Visualization, Writing–original draft. **Meryem Fırat:** Conceptualization, Investigation, Methodology, Validation, Visualization. **Aysun Akçam:** Conceptualization, Data curation, Investigation, Methodology, Validation, Visualization, Writing–original draft. **Sevil Çınar:** Conceptualization, Data curation, Investigation, Methodology, Validation, Visualization. **Özkan Özbay:** Conceptualization, Investigation, Methodology, Validation, Visualization.

ETHICAL PRACTICES

Ethical approvals required for the study were taken from University Scientific Research and Publication Ethics Board (18.05.2017 date and 2017/3 session and decision no: 9).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Yalçın Kanbay https://orcid.org/0000-0002-8025-9877
Meryem Fırat https://orcid.org/0000-0002-4193-2299
Aysun Akçam https://orcid.org/0000-0001-9428-3942
Sevil Çınar http://orcid.org/0000-0002-9281-1614
Özkan Özbay https://orcid.org/0000-0001-7754-2594

REFERENCES

Aceto, G., Persico, V., & Pescapé, A. (2018). The role of information and communication technologies in healthcare: Taxonomies, perspectives, and challenges. *Journal of Network and Computer Applications*, 107, 125–154. https://doi.org/10.1016/j.jnca.2018.02.008

Akman, E., & Murşit, I. (2018). Netlessphoba iof public offıcers: A study in Isparta province. *International Journal of Euroasian Researches*, 6(14), 20–37. https://doi.org/10.33692/avrasyad.510600

Alencar, A., Kondova, K., & Ribbens, W. (2019). The smartphone as a lifeline: An exploration of refugees' use of mobile communication technologies during their flight. *Media, Culture & Society*, 41(6), 828–844. https://doi.org/10.1177/0163443718813486

Alt, D., & Boniel-Nissim, M. (2018). Links between adolescents' deep and surface learning approaches, problematic Internet use, and fear of missing out (FOMO). *Internet Interventions*, 13, 30–39. https://doi.org/10.1016/j.invent.2018.05.002

Ayar, D., Bektas, M., Bektas, I., Kudubes, A. A., Ok, Y. S., Altan, S. S., & Celik, I. (2017). The effect of adolescents' internet addiction on smartphone addiction. *Journal of Addictions Nursing*, 28(4), 210–214. https://doi.org/10.1097/JAN.0000000000000196

Bisen, S. S., & Deshpande, Y. (2018). The Impact of the Internet in twenty-first century addictions: An overview. *Psychological, Social, and Cultural Aspects of Internet Addiction*, 1–19. https://doi.org/10.4018/978-1-5225-3477-8.ch001

Bragazzi, N. L., & Del Puente, G. (2014). A proposal for including nomophobia in the new DSM-V. *Psychology Research and Behavior Management*, 7, 155–160. https://doi.org/10.2147/PRBM.S41386

Bragazzi, N. L., Re, T. S., & Zerbetto, R. (2019). The relationship between nomophobia and maladaptive coping styles in a sample of Italian young adults: Insights and implications from a cross-sectional study. *JMIR Mental Health*, 6(4), e13154. https://doi.org/10.2196/13154

Brand, M., Young, K. S., & Laier, C. (2014). Prefrontal control and internet addiction: A theoretical model and review of neuropsychological and neuroimaging findings. *Frontiers in Human Neuroscience*, 8, 375. https://doi.org/10.3389/fnhum.2014.00375

Buyukozturk, S. (2010). *Sosyal bilimler icin veri analizi el kitabi [Data analysis handbook for social sciences]*. Pegem Akademi.

Can, A. (2017). *Quantitative data analysis with SPSS*. Pegem Akademi.

Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2014). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları,[Multivariate statistics for social sciences: SPSS and LISREL applications]*. Pegem Academy.

DeVellis, R. F. (2014). *Ölçek geliştirme: Kuram ve uygulamalar. [Scale development: Theory and applications]*. Nobel Academic Publishing.

Drago, E. (2015). The effect of technology on face-to-face communication. *Elon Journal of Undergraduate Research in Communications*, 6(1), 1–7.

Erkuş, A. (2014). *Psikolojide ölçme ve ölçek geliştirme-I: Temel kavramlar ve işlemler (2. Baskı). [Measurement and scale development in psychology-I: Basic concepts and operations]* (2nd ed.). Pegem Academy.

Fraccastoro, S., Gabrielsson, M., & Chetty, S. (2021). Social media firm specific advantages as enablers of network embeddedness of international entrepreneurial ventures. *Journal of World Business*, 56(3), 101164. https://doi.org/10.1016/j.jwb.2020.101164

Janssen, S. J. C., Porter, C. H., Moore, A. D., Athanasiadis, I. N., Foster, I., Jones, J. W., & Antle, J. M. (2017). Towards a new generation of agricultural system data, models and knowledge products: Information and communication technology. *Agricultural Systems*, 155, 200–212. https://doi.org/10.1016/j.agsy.2016.09.017

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. https://doi.org/10.1016/j.chb.2012.07.025

King, A. L. S., Valença, A. M., & Nardi, A. E. (2010). Nomophobia: The mobile phone in panic disorder with agoraphobia: Reducing phobias or worsening of dependence. *Cognitive and Behavioral Neurology*, 23(1), 52–54. https://doi.org/10.1097/WNN.0b013e3181b7eabc

Longstreet, P., Brooks, S., & Gonzalez, E. S. (2019). Internet addiction: When the positive emotions are not so positive. *Technology in society*, 57, 76–85. https://doi.org/10.1016/j.techsoc.2018.12.004

Pallant, J. (2017). *SPSS Kullanma Kılavuzu, Çev: Sibel Balcı ve Berat Ahi, 2. Baskı, [SPSS user manual, translation: Sibel Balcı and Berat Ahi* (2nd ed.). Anı Publishing.

Pew Research Center: Internet, Science & Tech (2019). Internet/broadband fact sheet.

Roberts, J., Yaya, L., & Manolis, C. (2014). The invisible addiction: Cell-phone activities and addiction among male and female college students. *Journal of Behavioral Addictions*, 3(4), 254–265. https://doi.org/10.1556/JBA.3.2014.015

Rozgonjuk, D., Sindermann, C., Elhai, J. D., & Montag, C. (2020). Fear of missing out (FoMO) and social media's impact on daily-life and productivity at work: Do WhatsApp, Facebook, Instagram, and Snapchat use disorders mediate that association? *Addictive Behaviors*, 110, 106487. https://doi.org/10.1016/j.addbeh.2020.106487

Savci, M., & Aysan, F. (2017). Technological addictions and social connectedness: predictor effect of internet addiction, social media addiction, digital game addiction and smartphone addiction on social connectedness. *Dusunen Adam: Journal of Psychiatry & Neurological Sciences*, 30(3), 202–216. https://doi.org/10.5350/DAJPN2017300304

Şeker, H., & Gençdoğan, B. (2006). *Psikolojide ve eğitimde ölçme aracı geliştirme. [Developing measurement tools in psychology and education]*. Nobel Publishing.

Şencan, H. (2005). *Sosyal ve davranışsal ölçümlerde güvenilirlik ve geçerlilik. [Reliability and validity in social and behavioral measurements]*. Seçkin Publishing Industry and Trade Inc.

Subramanian, K. R. (2017). Influence of social media in interpersonal communication. *International Journal of Scientific Progress and Research*, 38(2), 70–75.

Sönmez, V., & Alacapınar, G. (2016). *Sosyal bilimlerde ölçme aracı hazırlama. [Preparing measurement tool in social sciences]*. Memoir Publishing.

Tavsancıl, E. (2002). *Tutumlarin olcülmesi ve SPSS ile veri analizi [Measuring attitudes and data analysis with SPSS]*. Nobel Publishing.

Tezbaşaran, A. A. (2008). *Likert tipi ölçek hazırlama kılavuzu (3. Sürüm). [Likert type scale preparation guide* (3rd ed.). Mersin E-Book.

Tosun, N., Altinöz, M., Çay, E., Çinkiliç, T., Gülseçen, S., Yildirim, T., Aydin, M. A., Metin, B., Reis, Z. A., & Ünlü, N. (2020). A swot analysis to raise awareness about cyber security and proper use of social media: Istanbul sample. *International Journal of Curriculum and Instruction*, 12, 271–294.

Turan, İ., Şimşek, Ü., & Aslan, H. (2015). The use and analysis of Likert scales and Likert-type items in educational research. *Sakarya University Journal of Education*, 30(1), 186–203.

Tutar, H., Çat, A. K., & Serpil, H. (2021). A meta-synthesıs study on the causes and results of digital addiction. *Journal Addict Recovery*. 4(1), 1027.

Yayan, E. H., Suna Dağ, Y., & Düken, M. E. (2019). The effects of technology use on working young loneliness and social relationships. *Perspectives in Psychiatric Care*, 55(2), 194–200. https://doi.org/10.1111/ppc.12318

How to cite this article: Kanbay, Y., Fırat, M., Akçam, A., Çinar, S., & Özbay, Ö. (2021). Development of Fırat Netlessphobia Scale and investigation of its psychometric properties. *Perspectives in Psychiatric Care*, 1–9. https://doi.org/10.1111/ppc.12924