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The validity and reliability of the Turkish version of the smartphone addiction scale-short form for adolescent

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Abstract

The aim of this research is to examine the validity and reliability of the Turkish version of the smartphone addiction scale-short form for adolescents (SAS-SV; Kwon, Kim, Cho, & Yang, 2013). Participants were 312 high school students (183 were female and 129 were male) from Bolu Atatürk Anatolian High School. The results of confirmatory factor analysis indicated that the unidimensional model was well fitted ($\chi^2 = 56.92$, df= 31, RMSEA= .052, NFI= .96, CFI= .98, IFI= .98, RFI= .94, GFI= .96, and SRMR= .040) The internal consistency coefficient of the scale was .88. The corrected item-total correlations of SAS-SV ranged from .43 to .76. Overall findings demonstrated that this scale had high validity and reliability scores and that it may be used as a valid and reliable instrument in order to assess smartphone addiction levels of individuals.

1. Introduction

In our era in which technology changes with a dazzling speed, as well as the technology itself, the frequency of using this technology also changes. The computer and internet technology which was at first designed for usage in limited areas, became a tool which is used by almost all people in our era. Internet technology which had quite limited number of users approximately 25 years ago; but there are billions of internet users today. We can see this developing and changing technology in our phones. First mobile phone was made in 1973 and weighing more than one kilograms and with less than 20 minutes of battery endurance it was quite unpractical compared to the contemporary phones. During last 40 years, mobile phones went through a serious change and turned into pocket computers. This latest technology called smart phone provides people with additional options such as internet, social media, playing games besides traditional telephone conversation. Besides there are applications which can be used
in a very wide area from our daily lives to our professional lives in these phones. With all these qualities it includes, in fact, it took the place of the computers. The fact that it is quite small and light compared to a computer and it presents many qualities at the same time causes its usage to increase in our country, as in all around the world. While the rate of internet usage was 42.9% in 2011 and 4% of it was obtained with smart phones, the rate of internet usage in 2013 is 49% and mobile connections in phones constitute 16% of it (TUIK, 2013). These data show that mobile internet rate in internet usage is increasing fast.

In a report belonging to the 2011 in United States of America, it is stated that there are 331.6 million mobile phone users in the country. The rate of this number in country population equals to 104% (CTIA, 2011). In Turkey, the number of individual subscribers have reached to 61 million by 2012 and the rate of this number in country population is 92.3% (Bilgi Teknolojileri ve İletişim Kurumu, 2012). The number of mobile phone users in the world is 5.6 billions and its rate in the world population is states as 79.9% (Gartner, 2012). Also in recent years, the popularity of smart phones has been increasing. In year 2013 the rate of smart phone usage is over 50% in U.S.A and over 65% in South Korea (Lee, Ahn, Choi and Choi, 2014). The fact that mobile applications in smart phones are presented with social media tools and the games with internet facility increases the usage rate really fast (Zheng and Lionel, 2010). As for the increasing rate of smart phones in the year 2011, it was reported as 58% (Gartner, 2012). It is estimated that these numbers which are growing fast are over 80% today.

The daily usage duration of smart phones which include various applications such as game, social media and internet being in the first place is also increasing fast. While the concept of internet addiction was in the foreground about ten years ago, nowadays it is replaced by the concept of smart phone addiction (Kwon, Kim, Cho and Yang, 2013; Salehan and Negahban, 2013). Smart phone addiction has characteristic similar to gambling, game playing or internet addiction. These types of addiction are examined under the category of behavioral addiction (Lee, 2006). Although not defined completely, smart phone addiction is characterized by uncontrolled usage, negligence of daily activities and constantly checking the phone as in other types of addiction (Kwon, Kim, Cho and Yang, 2013).

It is thought that the fact that social media tools are included in the phones also facilitates the development of this addiction type (Salehan and Negahban, 2013). In a recent study, it is stated that Facebook® which is one of the most popular social media tools of recent times has approximately one billion active users and more than half of these users connect to it via smart phones (Mashable, 2012). Also in another study made in U.S.A, it is found that social media has a predicting effect on smart phone addiction (Salehan and Negahban, 2013).

In Turkey, as well as in the world, smart phone addiction is increasing fast with the increase of the number of users. It is even possible that this type of addiction surpassed internet addiction (Kwon, Kim, Cho and Yang, 2013). According to the data of National Information Society Agent in South Korea, it was found that while the rate of internet addiction is 7.7%, the rate of smart phone addiction is 8.4% in the country (NISA, 2012). However, to our knowledge, there exists no studies regarding smart phone addiction in our country. Therefore, the rate of smart phone addiction in our country is not known. However, when the increasing number of smart phone users is considered, studies on this subject are needed in Turkey.


Smartphone Addiction Scale-Short Version (SAS-SF) is a self-report scale with 10 items rated on a 5-point Likert scale (0= largely untrue, 4= largely true). Total score of the scale ranges 0 to 40. Higher scores from the scale indicate higher level of the smartphone addiction. SAS-SF was provided to a total of 540 selected participants from April to May of 2013. The participants consisted of 343 boys and 197 girls, and their average age was 14.5 years old. A series of statistical analysis were applied to define the reliability and validity for SAS-SF which consist of a single dimension. The correlation between SAS-SF and SAS (Smartphone Addiction Scale-Long Version/33 items) is .96, SAS-SV and SAPS (Smartphone Addiction Proneness Scale) is .76, SAS-SF and KS-Scale (The Korean self-reporting internet addiction scale short-form) is .42. Cronbach’s alpha correlation coefficient of SAS-SV is .91 and item total correlation coefficients for the scale are ranged .50 to .80.
2. Method

2.1. Participants

Participants were 312 high school students (183 were female, 129 were male) from Bolu Atatürk Anatolian High School, Turkey. Average of participants’ age is 16.2.

2.2. Procedure

Primarily the SAS-SF was translated into Turkish by five academicians. After that the Turkish form was backtranslated into English and examined the consistency between the Turkish and English forms. Turkish form has reviewed by four academicians from educational sciences department. Finally they discussed the Turkish form and along with some corrections this scale was prepared for validity and reliability analyses. In this study exploratory factor analysis was performed to examine the factor structure of the scale according to the data obtained from the Turkish students and confirmatory factor analysis was executed to confirm the original scale's structure Turkish culture. As reliability analysis internal consistency coefficients and the item-total correlations were examined. Data were analyzed by LISREL 8.54 and SPSS 13.0.

3. Results

3.1. Construct validity

The results of confirmatory factor analysis indicated that the model was well fitted ($x^2 = 56.92$, df= 31, RMSEA=.052, NFI=.96, CFI=.98,IFI=.98, RFI=.94, GFI=.96, and SRMR=.040). Results of the factor analysis are shown in Figure 1.

![Figure 1. Factor loadings for the Turkish version of the smartphone addiction scale-short form (SAS-SF)](image-url)
3.2. Reliability

The internal consistency coefficients the scale was .88, respectively. The corrected item-total correlations of SAS-SF ranged from .43 to .76.

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4. Discussion

The purpose of this study was to translate the SAS-SF into Turkish and examine its psychometric properties. The results of confirmatory factor analysis indicated that the model was well fit. Thus, it can be said that the structural model of the SAS-SF was well fit to the Turkish culture. Overall, findings demonstrated that this scale had high validity and reliability scores (Büyüköztürk, 2004; Tabachnick & Fidell, 1996) and that it may be used as an efficient instrument in order to assess smartphone addiction. In order to increase validity and reliability of SAS-SF, it's important to examine concurrent validity and to apply test-retest reliability. Data that were used for validity and reliability of SAS-SF were obtained from high school adolescents sample. Thus, studies with different groups will improve reliability and validity of SAS-SF. Therefore, further studies that will use the SAS-SV are important for its measurement strength.

References


