

An Urdu adaptation of smartphone addiction scale-short version (SAS-SV)

Muhammad Tahir Khalily, Tamkeen Saleem, Mujeeb Masud Bhatti, Irshad Ahmad, Basharat Hussain

Abstract

Objectives: To adapt the English version of Smartphone Addiction Scale-Short Version into Urdu language.

Method: The cross-sectional study was conducted from October 2017 to January 2018 at the International Islamic University, Islamabad, Pakistan. In the first stage, Smartphone Addiction Scale-Short Version was translated by 8 experts. In stage 2, the translated version was pilot-tested on 30 university students aged 18-19. Finally, the version was tested on the actual subjects who were students aged 11-30 years at schools, colleges and universities within Rawalpindi and Islamabad. SPSS 22 was used for data analysis.

Results: Of the 348 subjects, 216(62%) were males. Overall, 194(55.7%) students were above the addiction cutoff value. Inter-item reliability of the translated version was good ($\alpha = 0.81$); the construct validity was adequate ($P < 0.001$); Comparative Fit Index = 0.95; Tucker Lewis Index = 0.93; Normative Fit Index = 0.92; and Root Mean Squared Error Approximation = 0.05.

Conclusion: Smartphone Addiction Scale-Short Version can be used as a screening tool for assessment and identification of smartphone addiction in Pakistan.

Keywords: Smartphone, Addiction, Scale, Adaptation, Urdu, Pakistan. (JPMA 69: 700; 2019)

Introduction

Smartphone usage is becoming a requisite in daily routine activities as it provides a considerable variety of applications for communication, information processing, shopping, education and entertainment. A typical smartphone has a touch screen display, internet access, range of applications, digital camera, audio and video media players, maps and navigations etc. It serves a number of purposes and makes many things easier and convenient. In recent years, smartphone has become a necessity across range of life domains in general and is particularly utilised for many useful purposes across a number of professions. For instance, in the health sector, smartphone applications are currently offering numerous innovative ways to prevent as well as provide management for diseases like diabetes and alcoholism.^{1,2} A recent report documents an estimate of more than two billion registered smartphone users.³ As a result of its wide utilisation, the possession of the smartphone has become an indicator of economic status. However, excessive usage of smartphone is associated with compromised mental health. In this regard, some clinicians and researchers argue that the smartphone has more disadvantages than advantages.⁴

Clinicians and researchers have recently begun to start studying the excessive, unhealthy and problematic use of smartphone as a non-chemical form of addiction.

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International Islamic University, Islamabad.

Correspondence: Irshad Ahmad. Email: irshadahmad.sp@gmail.com

Smartphone addiction is well-thought-out as a form of technological and non-chemical behavioural addiction that comprises human-machine interaction.^{5,6} Generally, smartphone addiction is characterised by five major symptoms, including excessive usage, positive anticipation about usage, inclined towards cyber-oriented relationships, withdrawal, and tolerance. Consequently, the symptoms are often exhibited in the form of nervousness, anxiety and inclination towards the virtual world that feels more enjoyable along with impairment of personal, social and occupational domains of an individual.⁷

To date a few researches have been carried on the development of tools assessing smartphone addiction. However, recently, a number of self-diagnostic smartphone addiction questionnaires were developed in Korea⁷⁻⁹ and China.⁶ The most widely used tool to assess smartphone addiction is the Smartphone Addiction Scale-Short Version (SAS-SV) developed in South Korea.⁸ It has strong empirical evidence of sound psychometric properties from a range of countries across the world, including France,¹⁰ Germany,¹¹ Turkey¹² and Italy.¹³ However, there are no empirically validated assessment tools for smartphone addiction available in Pakistan despite its high prevalence in Europe^{10,14} and, particularly, in Asia and the subcontinent region.¹⁵⁻¹⁷ Smartphone addiction and problematic usage is consistently found associated with poor academic performance¹⁸ and with psychiatric symptoms, like anxiety, depression and alcohol consumption.^{14,19} Problematic Smartphone usage

is more prevalent among adolescents in Pakistan due to the provision of a range of entertaining activities like online gaming and social networking apps etc.²⁰

The current study was planned to translate the SAS-SV into Urdu using rigorous back-translation procedure²¹ and to examine the psychometric properties of the Urdu version of the scale.

Subjects and Method

The cross-sectional study was conducted in three stages from October 2017 to January 2018 at the International Islamic University (IIU), Islamabad, Pakistan. After getting permission from the institutional ethics review committee as well as the developers of the original scale, 8 experts in the field of mental health along with good bilingual skills and experience of translation were approached. For the purpose of forward translation, four bilinguals were asked to translate the 10-items of the scale from English to Urdu with primary concentration on content equivalence.

A review committee involving four experts, including two psychologists with specialisation in addiction, one psychometrician and one bilingual expert examined the four drafts of forward translation. The primary focus of the committee was to ensure the functional equivalence of the translated items along with the wordings, meanings, background and grammar of each item. Most consistent items were included in the reconciled forward translated version. The forward translated version was then back translated into source language by four bilingual experts who were not included in the forward translation process. Items were translated back into English without looking at the original English version of the scale.

A review committee again evaluated each and every item of the back-translated version of the scale. Additionally, in this phase the back-translated version was compared with the original English version of SAS-SV. The panel of experts reviewed the final version for any discrepancies in terms of content, functional and conceptual equivalence and approved the 10 items for inclusion in final Urdu version of the scale.

In stage 2, a pilot study was conducted on 30 students selected from the introductory classes of the Bachelors programme conducted by the IIU's Department of Psychology. The age range of this sample was 18-19 years, and there were 20(63.33%) boys and 10(33.67%) girls. The subjects reported no problems in comprehension of the items. This assessed the content validity and face of the items.

The third stage involved comprehensive empirical investigation for validation of the translated version of the

scale for which adolescent students from schools, colleges and universities within Islamabad and Rawalpindi were approached. Literature²² proposes that a sample size of 300 is adequate for factor analysis with variables (items) less than 30. Participants were included if using smartphone, aged 11-30 years, with the ability to respond to the research questionnaire and willingness to participate. Those diagnosed with any psychological disorder as per Diagnostic and Statistical Manual of Mental Disorders (DSM) or International Classification of Diseases (ICD) criteria and taking psychological or psychiatric services were excluded.

The SAS-SV scale consists of 10 items measuring addictive and problematic use of smartphone.⁸ Individuals have to respond on the Likert scale 1-6, where 1 indicates 'strongly disagree' and 6 indicates 'strongly agree'. Inter-item reliability index of SAS-SV ranges from 0.88 to 0.91.^{8,10}

The current study used SPSS 22 and Analysis of Moment Structure 21 (AMOS 21) for data analysis. Frequencies and percentages as well as the mean and standard deviation were used to express data. Internal consistency of SAS-SV was determined using Cronbach alpha coefficient. Pearson Product Moment Correlation coefficients were computed between items and the total score. For determining construct validity, Confirmatory Factory Analysis (CFA) using Maximum Likelihood Estimation (MLE) was used.

Results

Of the 348 subjects, 216(62%) were males. Overall, mean age was 18.96 ± 2.20 years, and 194(55.7%) students were above the addiction cut-off value (Table-1).

In terms of item analysis and internal consistency of the scale, items 4 and 5 assessing withdrawal symptoms were most common, while items 6 and 7 assessing disregard

Table-1: Demographic Data (N = 348).

| Variable | Categories | f | % |
|----------------------|----------------------------|-----|------|
| Gender | Male | 216 | 62.1 |
| | Female | 132 | 37.9 |
| Education | Elementary Education | 21 | 6.0 |
| | Secondary Education | 6 | 1.7 |
| | Higher Secondary Education | 70 | 20.1 |
| | Graduation | 251 | 72.1 |
| Smartphone addiction | Below Cut off | 153 | 44.0 |
| | Above Cut off | 194 | 55.7 |

Table-2: Mean, Standard Deviation, Item Factor Loading, Corrected Item Total Correlation and Alpha Reliability (N = 348).

| Serial no. | Smartphone Addiction Scale-Short Version (SAS-SV) items | Score | | Item factor load | Corrected item total (r) | α if item deleted |
|------------|---|-------|------|------------------|--------------------------|--------------------------|
| | | M | SD | | | |
| 1. | E: Missing planned work due to Smartphone use. U: ”سمارٹ فون کے استعمال کی وجہ سے طے شدہ کام نہیں کر سکتا / سکتی ہوں۔“ | 3.74 | 1.41 | 0.35** | 0.35** | 0.80 |
| 2. | E: Having a hard time concentrating in class, while doing assignments, or while working due to Smartphone use. U: ”سمارٹ فون کے استعمال کی وجہ سے کلاس میں توجہ مرکوز کرنے یا کام کرنے میں مشکلات کا سامنا کرنا پڑتا ہے۔“ | 3.06 | 1.59 | 0.44** | 0.42** | 0.79 |
| 3. | E: Feeling pain in the wrists or at the back of the neck while using a Smartphone. U: ”سمارٹ فون استعمال کرتے ہوئے کلا نی یا گردن کے پیچھے درد محسوس ہوتا ہے۔“ | 3.71 | 1.67 | 0.44** | 0.40** | 0.80 |
| 4. | E: Won't be able to stand not having a Smartphone U: ”سمارٹ فون کے بغیر زندگی خالی محسوس ہوتی ہے۔“ | 4.12 | 1.58 | 0.49** | 0.44** | 0.79 |
| 5. | E: Feeling impatient and fretful when I am not holding my Smartphone. U: ”جب میرے پاس اپنا سمارٹ فون نہ ہو تو میں خود کو بہت بے چین اور پریشان محسوس کرتی/کرتا ہوں۔“ | 3.79 | 1.70 | 0.58** | 0.51** | 0.78 |
| 6. | E: Having my Smartphone in my mind even when I am not using it. U: ”جب میں سمارٹ فون استعمال نہ بھی کر رہا/رہی ہوں تو پھر بھی سمارٹ فون میرے ذہن میں ہوتا ہے۔“ | 3.07 | 1.40 | 0.71** | 0.63** | 0.77 |
| 7. | E: I will never give up using my Smartphone even when my daily life is already greatly affected by it. U: ”میں سمارٹ فون کا استعمال ترک نہیں کروں گا/گی، چاہے میری زندگی اس سے بہت زیادہ متاثر ہی کیوں نہ ہو رہی ہو۔“ | 2.79 | 1.49 | 0.54** | 0.46** | 0.79 |
| 8. | E: Constantly checking my Smartphone so as not to miss conversations between other people on Twitter or Facebook U: ”میں اپنے سمارٹ فون کو مسلسل چیک کرتا/کرتی ہوں تاکہ میں ٹویٹر یا فیس بک پر دوسرے لوگوں کے ساتھ بات چیت سے محروم نہ رہ جاؤں۔“ | 3.77 | 1.65 | 0.58** | 0.50** | 0.79 |
| 9. | E: Using my Smartphone longer than I had intended. U: ”میں سمارٹ فون کے استعمال کو کم کرنے کی کوشش کرتا/کرتی ہوں تو بر دفعہ ناکام ہو جاتا/جاتی ہوں۔“ | 3.63 | 1.65 | 0.68** | 0.61** | 0.77 |
| 10. | E: The people around me tell me that I use my Smartphone too much. U: ”میرے ارد گرد لوگ مجھے بتاتے ہیں کہ میں بہت زیادہ سمارٹ فون استعمال کرتا/کرتی ہوں۔“ | 3.40 | 1.70 | 0.58** | 0.50** | 0.79 |
| Total | | 3.52 | 0.99 | | | 0.81 |

Note: E= English; U= Urdu; * = $p < 0.05$; ** = $p < 0.01$.

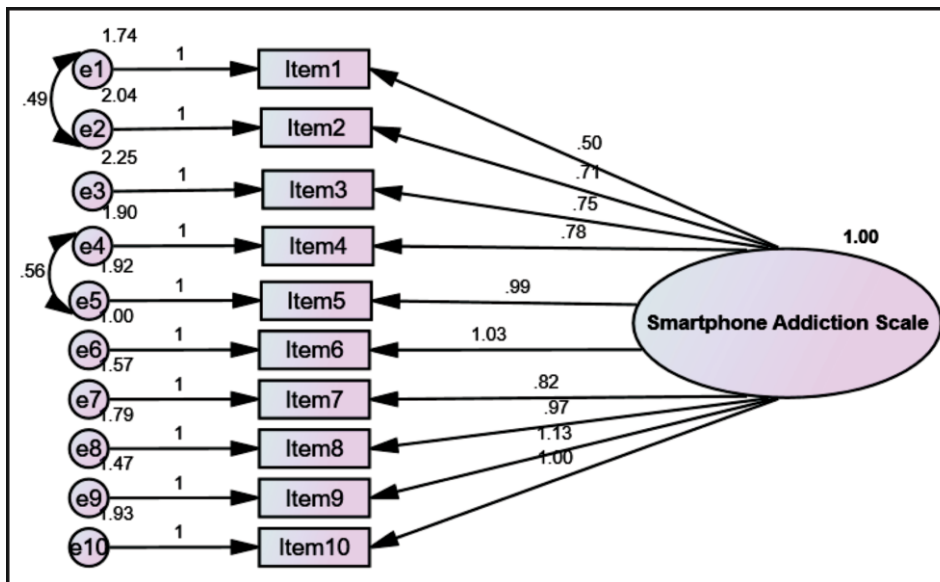


Figure: Uni-dimensional Confirmatory Factor Analysis (CFA) Model (Hypothesised Model).

for consequences and preoccupation respectively were teleast common with least variability (Table-2). The mean score across the 10 items of SAS-SV was 3.52 ± 0.99 and there was adequate inter-item reliability ($\alpha = 0.81$). The corrected item-total correlation ranged from 0.35 to 0.63 ($p < 0.01$).

The hypothesised model was uni-dimensional (Figure). All the 10 items loaded adequately on a single factor with loading ranging from 0.35 to 0.71 ($p < 0.01$). Model fit indices suggested a good fit with Comparative Fit Index (CFI) = 0.95, Tucker Lewis Index (TLI) = 0.93, Normative Fit Index (NFI) = 0.92 and Root Mean Squared Error Approximation (RMSEA) = 0.05.

Discussion

The present study was carried out to translate SAS-SV into Urdu language with the aim of enabling clinicians and researchers to tap the emerging problem of smartphone addiction. The study translated the English version into Urdu, and further data was collected from a range of educational institutions located within Rawalpindi and Islamabad to examine the psychometric properties of SAS-SV. The findings showed that SAS-SV was a reliable and valid instrument for assessing smartphone addiction in Urdu-speaking Pakistani population.

The study indicated that Urdu version of SAS-SV had an adequate internal consistency in Asian-Pakistani context. As Cronbach alpha coefficient for the total scale was within an adequate range ($\alpha = 0.81$), which is quite close to and consistent with the reliability of the original scale (0.91) with a Korean sample.⁸ Additionally, it is consistent

with the reliability reported by adaptation studies carried out in a range of countries, including the Turkish version ($\alpha = 0.88$),¹² Italian version ($\alpha = 0.79$),¹³ Malay version ($\alpha = 0.94$),²³ Spanish version ($\alpha = 0.88$) and French version ($\alpha = 0.90$) respectively.¹⁰ Similarly, corrected item-total correlation for SAS-SV ranged from 0.35 to 0.61, which indicates that all items demonstrated an adequate intensity of relationship with scale ($r > 0.30$). The range for item-total correlation is much similar and consistent with previous studies, like, for instance, the Spanish, Belgian, Turkish and South Korean

samples.^{8,10,12} CFA findings indicated the scale's uni-dimensionality.^{10,12} Collectively, these findings indicate that smartphone addiction encompassed by SAS-SV measures an etic construct. However, despite the similarities that emerged in psychometric properties, the prevalence of smartphone addiction found in the current study was considerably different compared to literature.^{10,11} The present study indicated a high prevalence rate of smartphone addiction (55.70%) compared to rates reported from Western countries, including United Kingdom (10%),¹⁰ Spain (12.5%),¹⁰ Switzerland (16.5%)¹¹ and France (21.5%).¹⁰ Recent research documents that cultural factors may contribute to the variation in the prevalence of technological addiction, Western countries are less prone and vulnerable to high technological addiction rates.²⁴ For instance, rates of smartphone addiction in Asian and Middle East region, including India, (39-44%),¹⁶ Iran (56.2-64.5%)¹⁷ and Saudi Arabia (48%)²⁵ is higher compared to rates reported in the West.^{10,11} In the case of Pakistan, which is part of low middle income countries (LMICs) in Asia and where a small portion of budget is allocated to the health sector for treatment, prevention and awareness programmes, majority of the individuals are not well aware of behavioural non-chemical addiction and negative outcomes of smartphone overuse. Similarly, Pakistan has undergone an intense surge of organised violence in recent years and addictive practices serve to give escape from psychological and physical inconvenience along with coping motives, including mood regulation, entertainment and enjoyment.²⁶

Empirical studies have demonstrated that exposure to violence plays a vital role in the development of substance and chemical addiction.²⁷ The increased rate of smartphone addiction in this study may be due to such plausible reasons. However, there is no direct empirical evidence in favour of such argument and further research is warranted to elucidate the relationship of exposure to organised violence and non-chemical behavioural addiction. In addition, results indicated that items assessing the withdrawal symptoms are more common and prevalent compared to other items on the scale. Future studies should look at the relationship of smartphone addiction with other variables and co-existing psychiatric problems in order to devise indigenous interventions to overcome this non-chemical addiction.

Conclusion

SAS-SV can be used as a screening tool for assessment and identification of smartphone addiction in research and clinics in Pakistan.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: Higher Education Commission (HEC), Pakistan.

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