

## ORIGINAL RESEARCH

# Selfitis Disease Behavior Scale: Turkish Validity and Reliability Study

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## Main Points

- In the study, it was aimed to adapt the selfitis disease behavior scale (SDBS) to Turkish culture.
- Confirmatory factor analysis revealed that the scale with six factors is valid and reliable in Turkish culture.
- The cronbach's alpha value of the scale showed that the scale was highly reliable ( $\alpha=0.956$ ).
- The positive and significant relationship between selfitis disease behavior and social media addiction and body image supported the concurrent validity of the scale.

## Abstract

Although selfie behavior, which has become popular with smartphones, initially starts as a leisure activity, it can turn into an addiction with time. This condition has been defined as a mental disorder by the American Psychiatric Association and named as selfitis. Recently, interest in studies on the concept of selfie has increased and a measurement tool called "Selfitis Disease Behavior" has been developed on this subject. In this study, we aimed to perform the validity and reliability analysis of the Turkish version of Selfitis Disease Behavior Scale (SDBS). As a result of the confirmatory factor analysis, it was found that the goodness of fit values of the Turkish version of the scale were acceptable and a good fit. It was also determined that the internal consistency coefficients of the scale were between 0.834 and 0.956. In addition, as a result of the correlation analysis performed within the context validity, it was concluded that the SDBS had a positive relationship with social media addiction and body perception scales. Therefore, the SDBS adapted into Turkish was demonstrated to be a valid and reliable measurement tool for use in Turkish culture.

**Keywords:** Selfitis, selfie taking, scale, addiction, behavioral addiction

## Introduction

The development of technology has brought various innovations and conveniences to people's lives. However, these innovations can bring with them some problems and even diseases. Today, smart phones with features of many different devices such as phones, televisions, computers, and cameras have become an almost inseparable part of life. However, various health problems such as internet addiction, online game addiction, nomophobia, techno-conference, cyberchondria, and social media addiction have also entered people's lives with this technology

(Balakrishnan & Griffiths, 2018). Moreover, companies in the smartphone industry today integrate cameras with better features and resolutions than professional cameras into smart phones. It can even be said that the camera features on these devices have become an important criterion when purchasing smartphones. These technological developments enable people to photograph the moment whenever they want, without any dependence on others. According to Hess (2015), this technology has made it easier to take selfies and share them on the web, allowing not only professionals but also non-professionals to take photos. Therefore, taking selfies and

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sharing them have become common problems with the emergence of these smart devices and social media (Shin et al., 2017; Sung et al., 2016).

In 2013, the Oxford dictionaries chose the word “selfie” as the word of the year. This word is defined as “A photograph taken by oneself, usually with a smartphone or webcam, and shared via social media” (Griffiths & Balakrishnan, 2018; Nagaraju & Chikkegowda, 2019; Shin et al., 2017; Sorokowski et al., 2015). Selfie is also expressed as a form of self-presentation and expression, which is an interpersonal communication in which a person conveys an image of himself/herself to another individual, community, or audience (Varma et al., 2020). In another definition, selfie is expressed as taking one’s own photo with a digital camera or camera phone, usually hand-held or supported by a selfie stick (Sowndarya et al., 2019). People take selfies at parties, in the classroom, while eating, exercising in the gym, and almost everywhere (Nagaraju & Chikkegowda, 2019). Furthermore, taking and sharing selfies is not just a trending fad among teens. This trend now covers all segments of society, from politicians to religious leaders, from the lower social strata to the upper strata, worldwide (Katz & Crocker, 2016). Hence, taking and posting selfies have become an integral part of people’s lives (Stuart & Kurek, 2019). People like to show that moment, more than live in the moment (Khan & Imran, 2019). Therefore, selfies have become a means by which individuals reflect their ideal selves in their minds rather than their normal selves. In fact, selfies are shared by being shaped (cropping, editing) and manipulated according to generally accepted social standards and other people’s views (McLean et al., 2015; Shin et al., 2017). Moreover, as the interest in manipulated selfies increases, it causes problems such as body dissatisfaction, low self-esteem, and low body perception, especially among young people (McLean et al., 2015). Psychiatrists have started to consider taking selfies as a serious mental health problem. Selfie initially starts as a leisure activity, but gradually becomes a habit and after a while turns into addiction (Kela et al., 2017; Nagaraju & Chikkegowda, 2019).

The American Psychiatric Association (APA) confirmed that selfie is a mental disorder and named this as “selfitis.” The term selfitis was defined by the APA as “an obsessive-compulsive desire to take one’s own photos and post them on social media as a way to compensate for the lack of self-esteem and to fill a gap in intimacy” (Pinoy, 2014). Selfitis is an important mental disorder and refers to the situation of people who feel themselves obliged to constantly post photos on social media (Varma et al., 2020). In the literature, selfitis is classified in three levels (El Khoueiry et al., 2020; Pinoy, 2014):

- **Borderline:** taking one’s own photographs at least three times a day but not posting them on social media.
- **Acute:** taking one’s own photographs at least three times a day and posting each of them on social media.
- **Chronic:** the person’s uncontrollable urge to take self-photographs at any time of the day and to post them on social media more than six times a day.

Although selfitis or selfie addiction is classified into three levels as mentioned earlier, it can briefly be defined as taking selfies several times a day in an almost obsessive manner and posting them on various social media sites. The main factors underlying this behav-

ior are narcissism, social competition, desire to attract attention, get rid of stress or feel happy, sense of belonging, self-confidence, and adaptation to the environment (Begum, 2019; El Khoueiry et al., 2020). When selfitis is examined in terms of people, it causes behaviors such as asociality and selfishness in general. Moreover, people try to photograph dangerous and risky situations with the impulse to be admired, appreciated, and show off. This can even cause death of people (Begum, 2019). On this basis, it is thought that a measurement instrument that can be used in Turkish culture is necessary to detect this behavior, which can become risky over time. In this study, we therefore, aimed to adapt the Selfitis Disease Behavior Scale (SDBS) to Turkish culture.

## Methods

### Aim and Scope

The purpose of this study was to perform the validity and reliability analysis of the Turkish version of SDBS developed by Balakrishnan and Griffiths (2018). We used the quantitative research design and presented descriptive findings. Quantitative research is simply studies that require the collection and analysis of quantitative data. The most distinctive feature of descriptive study is that the results describe a situation, but do not make comparisons to explain this situation (Büyüköztürk et al., 2013). The study was conducted on students studying at Kahramanmaraş Sütçü İmam University in 2021.

### Sample

A total of 380 students were included in the sample of the study using the convenience sampling method. The population of the study consisted of 35.700 people. The table created by Coşkun et al. (2017) to show the minimum acceptable sample sizes for certain populations was used in order to determine the sample size.

### Tools

Personal information form and SDBS were used to collect the research data. In addition, the Social Media Addiction Scale (SMAS) developed by Şahin and Yağci (2017) and the Body Perception Scale (BPS) developed by Secord and Jourard (1953) and adapted into Turkish by Hovardaoğlu (1992) were used for context validity.

SDBS comprised six dimensions. The dimensions consisted of 20 items: environmental enhancement (four items), social competition (four items), attention seeking (three items), mood modification (three items), self-confidence (three items), and subjective conformity (three items). The scale items were prepared with the Likert method and included the following choices: 1 “Strongly disagree,” 2 “Disagree,” 3 “Undecided,” 4 “Agree,” and 5 “Strongly agree.” There was no cut-off point for the scale. The scores obtained from the scale show that the selfitis disease increases as they approach 5 and decreases as they approach 1.

### Statistical Analysis

The research data were analyzed with the IBM Statistical Package for Social Sciences (IBM SPSS Corp.; Armonk, NY, USA) and the Linear Structural Relations (LISREL, by Karl Jöreskog, Scientist at ETS, Princeton, New Jersey and by Dag Sörbom, Prof. of Uppsala University, Sweden) package program. In the validity phase of the scale, first language and content validity, then construct and context validity were performed.

Language and content validity was performed to determine to what extent the items of the scale represented the situation to be measured (Kaya & Işık, 2018). Experts in the field made judgments on the representation power of the scale. On the basis of these judgments, a conclusion about the content validity of the scale was reached (Kurtuluş, 2004). The scale was translated by experts, and its Turkish translation was sent to experts in the field and checked. Experts were asked to give points from one to four on the accuracy of the items, and Kendall's test was applied to the obtained scores. No significant difference was found between the obtained scores ( $p>0.005$ ).

Construct validity analysis was performed in the second stage of the study. Construct validity shows the degree to which a test can accurately measure an abstract concept in the context of the desired behavior (Büyüköztürk, 2007). The method used to test the construct validity of a scale is a factor analysis (Işık, 2011). Factor analysis is divided into two as exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Yaşlıoğlu, 2017).

Confirmatory factor analysis (CFA) was used to determine the construct validity of SDBS. In addition, correlation analysis between SDBS, SMAS, and BPS was performed for context validity.

### Ethical Approval

The ethical approval for the study was obtained from the Kahramanmaraş Sütçü İmam University social and humanities ethics committee (dated 18.12.2020 and decision #2020/43). Informed consent was obtained from the participants in the study.

### Results

In this section, demographic data,  $t$  values, and standard coefficient values of the confirmatory factor analysis path diagram of SDBS are given. Finally, results of the correlation analysis between SDBS, SMAS, and BPS for context validity are included.

Of the students included in the study, 49.7% were female and 50.3% were male; 13.2% were first graders, 23.4% were second graders, 37.6% were third graders, and 25.8% were fourth graders. Considering the places where they lived before university, 16.8% lived in the village, 4.7% in the town, 33.7% in the district, and 44.7% in the city center. Examining the time spent by the students on the phone daily, 9.5% of them spend one to two hours, 37.1% three to four hours, 32.9% five to six hours, 13.2% seven to eight hours, and 7.4% nine or more hours (Table 1).

The  $t$  values of the scale items are given in Figure 1. In line with the analysis, it was observed that the level of representing the implicit variable of all items (observed variable) within the factors were significant at the 0.05 level. The  $t$  values calculated for the specified 20 items were greater than 1.96, which is the critical value determined for the 0.05 significance level.

The standardized coefficients of the scale are given in Figure 2. These values are in the acceptable and good range.

Table 2 includes goodness of fit index values of the scale and normal and acceptable goodness of fit index values. Accordingly, the goodness of fit values of the scale are chi-squared ( $\chi^2$ )/degrees of

freedom=3.373; goodness of fit index=0.955; adapted goodness of fit index=0.935; comparative fit index=0.923; root mean square error=0.079; root mean residual squares=0.028; and scaled fit index=0.966. It is stated in the literature that these values show a good fit and an acceptable fit (Hooper et al., 2008; Munro, 2005; Rose et al., 2004; Şimşek, 2007; Wang & Wang, 2019; Kırac, 2019; Toygar & Kirlioğlu, 2020).

Cronbach's alpha coefficient was used to measure the internal consistency of the scales. Cronbach's alpha coefficient indicates whether the scale items are homogeneous. The Cronbach alpha values used in Likert scales are as follows: 0.40 and below, unreliable; 0.40-0.60, low reliability, 0.60-0.80, very reliable, and 0.80-1.00, highly reliable (Uzunsakal & Yildiz, 2018).

Table 1.  
*Demographic Data of the Participants of the Study (n=380)*

| Sex                                      | n   | %    |
|------------------------------------------|-----|------|
| Female                                   | 189 | 49.7 |
| Male                                     | 191 | 50.3 |
| Grade                                    | n   | %    |
| 1 <sup>st</sup> Grade                    | 50  | 13.2 |
| 2 <sup>nd</sup> Grade                    | 89  | 23.4 |
| 3 <sup>rd</sup> Grade                    | 143 | 37.6 |
| 4 <sup>th</sup> Grade                    | 98  | 25.8 |
| The place he/she lived before university | n   | %    |
| Village                                  | 64  | 16.8 |
| Town                                     | 18  | 4.7  |
| District                                 | 128 | 33.7 |
| City center                              | 170 | 44.7 |
| Time spent on the phone daily            | n   | %    |
| 1-2 hours                                | 36  | 9.5  |
| 3-4 hours                                | 141 | 37.1 |
| 5-6 hours                                | 125 | 32.9 |
| 7-8 hours                                | 50  | 13.2 |
| 9 and above hours                        | 28  | 7.4  |

Table 2.  
*Goodness of Fit Values Used in CFA*

| Index Values | Normal Value | Acceptable Value | Model Values     |
|--------------|--------------|------------------|------------------|
| $\chi^2$ /SD | <2           | <5               | 512.71/152=3.373 |
| GFI          | >0.95        | >0.90            | 0.955            |
| AGFI         | >0.95        | >0.90            | 0.935            |
| CFI          | >0.95        | >0.90            | 0.923            |
| RMSEA        | <0.05        | <0.08            | 0.079            |
| RMR          | <0.05        | <0.08            | 0.028            |
| NFI          | >0.95        | >0.90            | 0.966            |

GFI: goodness of fit index; AGFI: adapted goodness of fit index; CFI: comparative fit index; RMSEA: root mean square error; RMR: root mean residual; NFI: scaled fit index

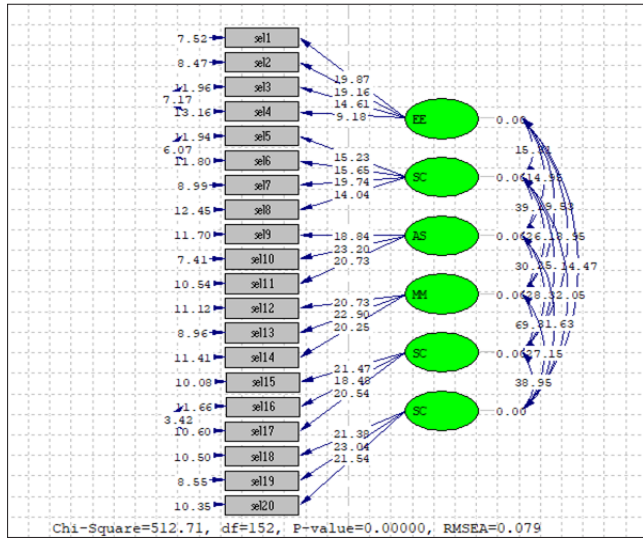


Figure 1. Selfitis Disease Behavior Scale Confirmatory Factor Analysis Path Diagram (t values)

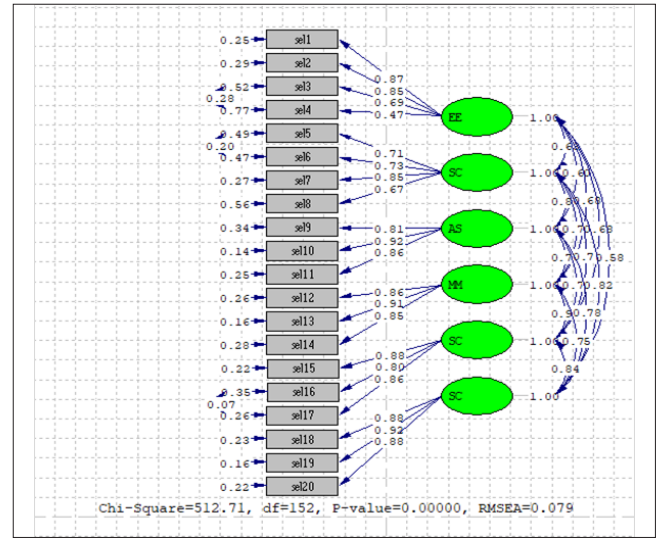


Figure 2. Selfitis Disease Behavior Scale Confirmatory Factor Analysis Path Diagram (Standard Coefficients)

Table 3.

*Selfitis Disease Behavior Scale (SDBS) Item Correlation Analysis*

|                              |                                                                                              | Corrected<br>Total<br>Question<br>Correlation | Cronbach<br>Alpha<br>when the<br>question<br>is deleted | Factors<br>Cronbach<br>Alpha | Cronbach<br>Alpha |
|------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------|------------------------------|-------------------|
| Environmental<br>enhancement | 1. I enjoy life more by taking selfies.                                                      | 0.649                                         | 0.953                                                   | 0.834                        | 0.956             |
|                              | 2. I can express myself better to my social environment thanks to selfie.                    | 0.654                                         | 0.953                                                   |                              |                   |
|                              | 3. Taking selfies offers better memories of my current situation and experiences.            | 0.536                                         | 0.955                                                   |                              |                   |
|                              | 4. I take selfies to collect memories.                                                       | 0.387                                         | 0.958                                                   |                              |                   |
| Social<br>Competition        | 5. Sharing my selfies creates a healthy competition with my friends and colleagues.          | 0.662                                         | 0.953                                                   | 0.841                        |                   |
|                              | 6. Different selfie poses help increase my social status                                     | 0.671                                         | 0.953                                                   |                              |                   |
|                              | 7. I often share selfies to get more likes and comments on social media.                     | 0.728                                         | 0.952                                                   |                              |                   |
|                              | 8. I use photo editing tools to make my selfies look better than others.                     | 0.599                                         | 0.954                                                   |                              |                   |
| Attention<br>Seeking         | 9. I get a lot of attention by sharing my selfies on social media.                           | 0.697                                         | 0.953                                                   | 0.899                        |                   |
|                              | 10. I feel more popular when I share my selfies on social media.                             | 0.793                                         | 0.951                                                   |                              |                   |
|                              | 11. I expect my friends to evaluate me by sharing my selfies.                                | 0.772                                         | 0.952                                                   |                              |                   |
| Mood<br>Modification         | 12. I reduce my stress level by taking selfie.                                               | 0.798                                         | 0.951                                                   | 0.905                        |                   |
|                              | 13. Taking more selfies improves my mood and makes me happy.                                 | 0.809                                         | 0.951                                                   |                              |                   |
|                              | 14. Taking Selfie instantly changes my mood.                                                 | 0.742                                         | 0.952                                                   |                              |                   |
| Self<br>Confidence           | 15. I feel safe when I take a selfie.                                                        | 0.797                                         | 0.951                                                   | 0.897                        |                   |
|                              | 16. I become more positive about myself when I take a selfie.                                | 0.746                                         | 0.952                                                   |                              |                   |
|                              | 17. Taking more selfies increases my self-confidence and I keep them carefully.              | 0.794                                         | 0.951                                                   |                              |                   |
| Subjective<br>Conformity     | 18. When I take a selfie and post it on social media, I gain more acceptance among my peers. | 0.774                                         | 0.952                                                   | 0.921                        |                   |
|                              | 19. I can become a strong member of my peer group by sharing selfies.                        | 0.758                                         | 0.952                                                   |                              |                   |
|                              | 20. When I don't take selfies, I feel disconnected from my peer group.                       | 0.721                                         | 0.952                                                   |                              |                   |

Table 4.  
Selfitis Disease Behavior Scale Context Validity (n=380)

|                                        | 1         | 2      |
|----------------------------------------|-----------|--------|
| 1. (SDBS)                              |           |        |
| 2. Social Media Addiction Scale (SMAS) | r 0.353** |        |
|                                        | p 0.000   |        |
| 3. Body Perception Scale (BPS)         | r 0.136** | 0.126* |
|                                        | p 0.008   | 0.014  |

As seen in Table 3, item-total correlation analysis of the scale was performed. The general reliability of the scale was determined as 0.956. This result indicates that the scale has a high level of reliability.

As can be seen in Table 4, correlation analysis was performed between SMAS and BPS to make the context validity of SDBS, and a positive relationship was found between the scales ( $p < 0.001$ ). As the students' social media addiction and body perception increase, selfitis also increases.

## Discussion

The fact that technology plays a role in all areas of life brings various problems along with innovations. Some of these problems are internet addiction, online game addiction, nomophobia, technoforence, cyberchondria, and social media addiction (Balakrishnan & Griffiths, 2018). All these problems brought on by technology are called digital diseases (Polat, 2017). Selfitis disease, which has started to be emphasized more recently, is a concept that can be considered among these digital diseases. The introduction of smartphones with professional camera features into people's lives has made it very simple to take pictures and selfies. The behavior of taking selfies and sharing them on social media, which starts as an entertainment and leisure activity, turns into an addiction with time and becomes an almost integral part of people's lives. When this situation becomes an addiction, it results in the manipulation of selfies that people take with the perception of the ideal self and appearance, rather than their real selves and appearances. Moreover, these manipulated selfies are shared on social media and trigger the desire to be liked and appreciated by other individuals. Considering all these points, even though the selfie behavior appears to be a normal behavior at first, it can be regarded as a digital disease when it becomes an addiction. When this behavior turns into an addiction and obsession, it is called "selfitis." In this study, we aimed to adapt SDBS, which measures the selfitis levels of individuals, into Turkish.

As a result of the Turkish validity and reliability analysis conducted in this study, it was determined that the Turkish version of the "Selfitis Disease Behaviour Scale," which was developed by Balakrishnan and Griffiths (2018) and consists of 20 statements and 6 dimensions, also consists of 20 statements and 6 dimensions. In addition, with the confirmatory factor analysis, it was determined that the SDBS adapted to Turkish showed good and acceptable fit.

## Limitations and Directions/Suggestions for Future Research

As the study was conducted on a study sample that included university students, the age variable can be considered as a limitation of this study. According to the findings obtained from the study, using SDBS, selfitis disease levels of individuals can be investigated alone as well as the relationship between individuals' selfitis disease levels and nomophobia, internet addiction, social media addiction, body perception, self-confidence, narcissism, subjective happiness, and social appreciation levels in today's world where technology use is prevalent in all areas of our lives can also be investigated. Therefore, it may be recommended to investigate the correlational relationships between these variables or the effects of these variables on each other in further studies in this field.

In conclusion, the SDBS developed by Balakrishnan and Griffiths (2018) was found to be a valid and reliable measurement instrument for use in Turkish culture as a result of the analysis conducted in the study. The correlational relationship between social media addiction and body perception was also examined to make the context validity of the scale. Therefore, it was concluded that there is a positive relationship between selfitis disease and social media addiction and body perception. Thus, we believe that SDBS will contribute to many studies in areas such as body and body perception, self-confidence, social competition, and subjective happiness, especially studies on digital diseases.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the Social and Humanities Ethics Committee of Kahramanmaraş Sütçü İmam University (dated 18.12.2020 and decision #2020/43).

**Informed Consent:** Informed consent was obtained from the participants in the study.

**Peer-review:** Externally peer-reviewed.

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