

The Validity and Reliability of the Problematic Internet Usage Scale

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Abstract

In this research, it was aimed to develop an instrument for determining problematic internet usage of university students. Factorial structure of the data collected from 1658 university students revealed three factors. Of these, the first factor is called negative consequences of the internet and accounted for 25.36% of the variance, the second factor is called social benefit / social comfort and accounted for 14.62% of the variance, and the third factor is called excessive usage and explained 8.98 % of the variance. All three factors consisting of 33 items accounted for the 48.96% of the total variance. It was found that the scale was able to discriminate problematic internet use with respect to the time spent on the internet and individuals' perception of themselves as the internet addicts. The correlation between the scale and the Davis's Online Cognitive Scale-Turkish adaptation (Keser Özcan ve Buzlu, 2005) was found as 0.61. Internal consistency coefficient of the scale (α) was found to be 0.94. Item total correlations ranged between 0.31 and 0.70 ($p < .001$). Test-re-test reliability coefficient was found to be 0.81 and split half reliability coefficient was found to be 0.83. Thus, the scale called as "the Problematic Internet Usage Scale" was developed.

Key Words

Internet, problematic internet usage, reliability, scale development, validity.

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The internet is an important communication medium which has emerged in the field of communication technologies in our time. Development of the internet has also affected almost all aspects of social life. However, the internet has come up with some important negativity in our social life such as the unethical use of the internet, excessive use of the internet, and the internet addiction.

Recently, it has been indicated that individuals may show important disorders in critical areas containing social, academic, professional, and physical health in relation to the time they spend on the internet and the excessive use of the internet. Studies revealed findings which indicate that the internet users began to show behaviors similar to other addictions such as drug, alcohol, or gambling (Griffits, 1996; Young, 1998). Therefore, problematic internet use may damage individuals' relations with their environments and hinder their success. For this reason, the internet related psychological dependency or pathological internet use is a great field of interest in research and discussion. In the literature, many concepts such as the internet addiction, the internet dependency, problematic internet use, and pathological the internet use and cyber addiction have been used in order to define excessive the internet use behaviors of individuals whose lives were affected negatively. Moreover, in the literature, various researchers developed various measuring instruments in order to determine the internet addiction or excessive or abusive use of the internet (Caplan, 2002; Davis, Flett & Beser, 2002; Morahan-Martin & Schumacher, 2000; Tsai & Lin, 2001; Widyanto & McMurrin, 2004; Young, 1998).

University students are one of the first groups that began to use the internet most prevalently and the first group began to have problems related with excessive the internet use (DiNicola, 2004). Thus, university students are more likely to develop problems related with excessive internet use due to various factors including developmental problems (Kandell, 1998) and easy access to the internet (Anderson, 2001). Because of this, there is a great need for various researches directed towards on problematic internet use and understanding students' the internet use behaviors. This study aims at developing a measuring instrument to determine problematic internet use in university students.

Method

Four different working groups who attend Anadolu University within 2005-2006 education year were used in the study. There are 2491 university students totally in these four groups. In the study, a draft measuring instrument consisting of 59 items was formed to experts' opinions and suggestions in order to develop the "Problematic Internet Use Scale". The scale with 59 items was applied to 2112 university students. Of these students, 404 students who showed that they use the internet for average 0-2 hours per week were not included in the analysis. Principal components analysis of factor analysis, varimax rotational method, variance analysis, t test and Pearson correlation coefficient calculations were utilized in the analysis of data.

Results

Exploratory principal components analysis of factor analysis was used to determine the factorial structure of the Problematic Internet Use Scale. The scale was analyzed with three factors by varimax rotational method. This analysis resulted in the scale with three factors accounted for 48.96% of total variance with 33 items. First factor called as "negative consequences of the internet" alone accounted for 25.36% of total variance and consists of 17 items. The second factor called as "social benefit/social comfort" accounted for total variance and consisted of 10 items. The third factor named as "excessive use" explained 8.98% of total variance and consisted of 6 items. It was found that the ones spending more time on the internet have more problematic internet use as an indicator of discriminant validity of the Problematic Internet Use Scale. At the same time, problematic internet use was found higher among those perceiving themselves as the internet addicted than those not reporting any addiction significantly ($p < .05$). The correlation coefficient between the Problematic Internet Use Scale and the Turkish adaptation of Online Cognition Scale was found as 0.61 ($p < .0001$). Correlation coefficients were found -0.10 between the Problematic Internet Use Scale and the Family Subscale of Perceived Social Support Scale, 0.04 between the Problematic Internet Use Scale and the Friends Subscale of Perceived Social Support Scale, 0.05 between the Problematic Internet Use Scale and the Society Subscale of Perceived Social Support Scale, insignificantly. However, correlation coeffi-

ent between the Problematic Internet Use Scale and the Beck Depression Inventory were found as 0.29, and correlation coefficient between the Problematic Internet Use Scale and the UCLA Loneliness Scale were found as 0.27.

Internal consistency coefficient (α) of the Problematic Internet Use Scale was found as 0.94. Internal consistency coefficients of three factors composing the scale were found 0.94 for the first factor, 0.85 for the second factor, and 0.75 for the third factor. The item-total reliability coefficients change between 0.31 and 0.70 ($p < .001$). t values of all items were found significant ($p < .0001$) by means of comparing the low and high groups composed of 894 individuals in total. The test-re-test correlation coefficients of subscales were found as 0.80, 0.76, and 0.71, respectively. The split-half reliability coefficient of the Problematic Internet Use Scale was found as 0.83.

Discussion

The factorial structure of the data gathered from the sample consisted of 1658 university students revealed that the scale was composed of three sub-factors (negative consequences of the internet, social benefit/social comfort, and excessive use). These three factors, consisted of 33 items, accounted for 48.96% of variance together.

This study was carried out with the aim of developing a self-report scale that defines problematic internet use behavior among university students. The findings about the scale show that the scale is valid and reliable. Thus, The Problematic Internet Use Scale appeared as the scale with three factors, having 33 items, ranging between 33 and 165 points, replying with five ratings.

The Problematic Internet Use Scale has been developed as a vertical scale with the assumption that the intensity of the internet use shows continuity from normal to pathologic use. For this reason, this scale must not be evaluated as a scale measuring problematic internet use to diagnose “the internet addiction” in individuals. This scale aims at indicating the healthy and unhealthy usage levels of the internet. Thus, high scores from the scale indicate that individual’s the internet usage become unhealthy, it may affect their lives negatively and it may create tendency for the internet addiction. In conclusion, the Problematic Internet Use Scale is a valid and reliable instrument which can be used to measure problematic internet use behaviors of university students in future research.

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