Validity, Reliability and Psychometric Evaluation of Persian Version of Young Internet Addiction Questionnaire For Tabriz University and Tabriz University of Medical Sciences Students

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Abstract

Introduction: The concept of addiction has developed enough to be used outside of areas such as drugs and alcohol and is being generally applied to many other behaviors such as internet use. The aim of this study is to evaluate the validity and reliability of the Persian version of the Young Internet Addiction Questionnaire (YIAQ) in university students in Tabriz.

Methods: Initially, YIAQ was translated from English to Persian by someone with expert English skills, and then the Persian version was translated to English by another person. After that, a specialist in the field of psychiatry with acceptable skills in the field of English compared these two versions and suggested needed changes. In this methodological (mixed method) study, the Delphi method was used in the qualitative part and a cross-sectional design was used in the quantitative part. The Persian version was evaluated using the Delphi method by ten specialists in the field of internet use and they mentioned changes needed to evaluate face and content validity. For the evaluation of the Cronbach's alpha coefficient, 200 students with different majors at Tabriz University were selected randomly and filled out the Persian version of YIAQ. Reliability was confirmed by clinical interview.

Results: The reliability of the questionnaire was acceptable for 20 questions with Cronbach's alpha coefficient of 0.93. The face and content validity were determined by the Delphi method and application of opinions of specialists in the field of internet use.

Conclusion: The Persian version of YIAQ is valid and reliable for the evaluation of internet addiction.

Introduction

The influence of the internet on people's lives is undeniable and very important. Life seems to be dull and upsetting without it. The invention of the internet resembles the discovery of nuclear energy since it can have both positive and negative effects on people's lives.[1]

Internet users are rising in number in an amazing trend. Users numbered 665 million in the year 2002 and grew to over 2 billion in the year 2011.[2] In recent years, the number of internet users has had a 3100% increase.[3]

Presently, the concept of addiction has developed enough to be used outside of areas such as drugs and alcohol and is being generally applied to many other behaviors such as internet use.[4]

The true outbreak of addiction to the internet is unclear. Young estimated this number to include between 5 to 10% of internet users in the world.[5,6] In studies conducted in the United States, Norway, China, South Korea and Greece numbers ranging from 0.7% to 13.5% have been reported.[7-13] The outbreak rate of this addiction in Iran is not clear either. In a study conducted by Darghahi and Razavi in

2007, 30% of the 732 internet users in the age range of 15 to 39 were diagnosed with addiction.[14] In another study by Gahsemzadeh et al., the rate in a class of high-school students was reported to be 3.8%.[15]

The suggested criteria for addiction to the internet in the comprehensive books of psychiatry[16] are as follows, and having only five of the following will be enough to be diagnosed with addiction:

1. Mental preoccupations with net
2. Increased online time
3. Failing to return to the previous use patterns together with having unrest
4. Nervousness and depression
5. More online time spent than initially intended
6. Risk of losing a job, relationship or other opportunities due to internet use
7. Turning to lies in order to hide the true rate of one's internet use or using the net to escape negative feelings

Davis preferred the term pathologic internet use to internet addiction and classified it to two groups:

1. Generalized: This includes the general and extremely multi-dimensional use of the internet and wasting time online without a certain focus on a specific matter.
2. Specified: This includes the overuse of the net with a certain focus on particular subjects such as sexual issues and online gambling.[17]

According to the side effects of internet addiction, it is necessary to investigate this phenomenon from different angles and in detail and there will be a certain need for reliable instruments in doing so.

In studies conducted in different countries to assess the problems associated with the internet, several tests such as the Chen Internet Addiction Scale and GPIUS assessment questionnaire were used.[15]

Needless to say, having access to the Persian version of this questionnaire whose reliability and validity have been examined will help the researchers in this area.

Materials and Methods

This study was performed using descriptive and cross-sectional methods.

The sample size and study area :

A certain number of students studying at Tabriz University and Tabriz University of Medical Sciences were selected in a random major-based style:

1. 50 students majoring in technical fields
2. 50 students majoring in non-medical and non-technical fields
3. 50 medical students studying the basic medical sciences at Tabriz University of Medical Sciences
4. 50 medical students (interns and stagers) studying at Tabriz University of Medical Sciences

The questionnaires included demographic information such as age, gender, marital status, university major and entrance year to the university.

This study was conducted in winter 2014, spring and summer 2015. Inclusion criteria were being a student with internet access and there were no specific exclusion criteria. Young's Internet Addiction Test is one of the most reliable sources in the area of internet addiction. It was designed by Kimberly Young in 1994 consisting of only eight questions. In 1998, a more thorough version of this questionnaire was created and the number of questions had risen to 20. This questionnaire included 20 questions based on a five-grade Likert scale ranging from never, seldom, sometimes, usually, often and always which receive the scores zero to 5, respectively.

According to the gained score, the user will be placed in one of the following groups:

1. 20 to 49: normal internet user
2. 50 to 79: a user who suffers from some certain problems due to internet overuse
3. 80 to 100: a user who suffers from numerous problems in his/her life due to extreme internet use and is therefore considered an internet addict.

Provision of the Persian Version

Initially, the original English version of Young's questionnaire was translated to Persian by an expert translator. The translated version was then translated back to English by an individual unfamiliar with the original English version. The resultant translation was compared to the original English version and linguistically edited by Dr. Pourafghari, professor of psychiatry at Tabriz University of Medical Sciences. The comparison did not end in any major edits in the Persian version, save for some very minor changes.

Content Validity

The credibility of the Persian version was measured by a group of different professors at Tabriz University and Tabriz University of Medical Sciences from various relevant disciplines. In doing do, three professors of psychiatry, three professors of psychology, two professors of sociology and two professors of information technology evaluated the data of the Persian version in terms of clarity and suitability of each item. Corrective remarks were taken into consideration and the above-cited stage was repeated. Eventually, the finalized version was confirmed by all the professors and the content validity of the Persian version was measured using statistical analysis.

Reliability

In order to measure reliability, 200 students majoring in different fields at Tabriz University and Tabriz University of Medical Sciences who were selected by stratified random sampling filled out the questionnaires. All the subjects went through a psychiatric interview based on the criteria of internet addiction. According to the result of the interview and each individual's questionnaire score, the sensitivity of the Persian version was obtained. To specify the internal reliability Cronbach's alpha coefficient was used.

The ceiling effect was the percentage of students who score over 80 (3.5%) and the floor effect was the percentage of students who score under 50 (74.8%).

Statistical Analysis

The present research used the software SPSS 20 to analyze the data. Initially, descriptive statistics such as the mean, standard deviation, frequency and percentage were analyzed. The Pearson correlation coefficient was then used to investigate the relationship between age and internet addiction. Furthermore, one-way variance analysis was used to find out the mean differences among the internet-addicted interviewees in terms of the internet addiction variable. An independent t-test was used to research the students' gender and marital status differences in research variables. The justification of the sample size was calculated using the formula Cochran.

$$n = \frac{\frac{Z^2 pq}{d^2}}{1 + \frac{1}{N}\left(\frac{z^2 pq}{d^2} - 1\right)}$$

In this formula Z = 1.96, d = 0.01, P = 0.5 and N = 20.000 was defend.

Ethical Consideration

Informed consent was obtained from all students with an emphasis on confidentiality. This study was funded by the psychiatric research center.

Results

The Cronbach's alpha coefficient for the 20 designed questions of the questionnaires was α = 0.93. In the present study, according to Table 1, 57% of the participants were female students and 43% were male. As for marital status, 89.4% were single and 10.4% were married. There was no mean difference between the male and female students in terms of internet addiction and there was no mean difference between the single and married students in terms of internet addiction either. According to Table 2, the mean and the standard deviation of internet addiction in medical students studying the basic medical sciences were higher compared to other majors. According to Tukey's range test (Table 1), a significant difference was detected in the mean between the medical and the technical students, non-medical, non-technical and medical students, and basic medical students and medical students. No significant difference was noted in the mean of other majors. The psychiatric interviews, based on the internet addiction criteria, revealed that 12 individuals out of 199 (6.03%) were suffering from addiction. The sensitivity of the questionnaires was 58%.

Table 1. demographic characteristics

	Abundance	**Percent**
Female	114	57.0
Male	85	42.5
Married	21	10.6
Single	117	88.9

Table 2. Descriptive statistics of the sample on the basis of academic disciplines

Students	**Number**	**Average**	**Standard deviation**	**Minimum score**	**Maximum score**
Technical	50	40.59	18.34	5	86
Non –medical non technical	50	40.24	17.82	11	87
Interns stagers	50	30.39	15.04	8	71
Basic medical	49	43.35	20.05	9	83
total		38.68	18.44	5	87

Table 3. Tukey's range test to assess the differences

Students	**Mean difference**	**Standard deviation**	**P value**	**Lower limit**	**Upper limit**
Non medical technical-interns and stagers	10.20	3.60	0.02	0.87	19.19
Non medical-interns and stagers	9.85	3.60	0.03	0.52	19.19
Basic medical-interns and stagers	12.96	3.60	0.002	3.6	22.2

Discussion and conclusion

The results of the present study revealed the high validity and reliability of the Persian version of Young's internet addiction questionnaire. The reliability of the test, based on Cronbach's alpha coefficient, was reported to be 0.93, which indicates a very favorable reliability. In the Korean version of the questionnaire the same coefficient, after calculation, turned out to be 0.91.[18] In a study by Faraci et al., Cronbach's alpha coefficient was 0.91 for the Italian version.[19] The majority of the questions seemed interesting for the participants, which is an indication of the high face validity of the questionnaire. The same high face validity was also mentioned in a study done by Widyantol et al.[20] The content and face validity of the questionnaires for the Persian version in this study was evaluated through the Delphi approach and the expert cooperation of ten professors in fields relevant to internet addiction. It is thus inferred that the Persian version, like all the other translated versions in other languages, is of an acceptable validity for the diagnosis of internet addiction.

Two hundred various students in different majors at Tabriz University and Tabriz University of Medical Sciences were selected in order to analyze the problems of internet addiction in terms of the academic field of study as well.

The number of the single participants was high with an average age range of 21.29 years old, which was a predictable matter. However, no significant difference was detected in the internet addiction rate between the single and married participants.

Internet addiction decreased with age, and this relationship was significant. The probable reason for this finding might be the low average score of the questionnaire in the clinical medical students who constituted the older participants of this study.

The mean difference of the questionnaires given to clinical medical students was lower than the study groups. According to the statistical analysis, this difference was significant, which could be explained by the difficulty of their lessons the considerably high amount of time spent in the educational hospitals and their limited access to the internet.

In this study, the internet addiction outbreak was 3.5% (score 80-100) and the rate of risk-exposed users was 21.6% (score 50-79). In Alavi's study on 250 Isfahani students, the internet addiction rate was 15% and in Ghamari's study on 426 medical students in Arak, the rate of addiction was 8%. It is likely that the reason for this difference is the different type of instruments used in that study.[3]

As the present study reveals, the internet addiction rate in this study is closer to the results of the studies conducted in the United States and other European countries than those of Asian countries and Southeast of Asia where internet addiction has turned out to be a major problem for parents and a social threat for authorities. This could be an alarming and critical fact for us as well. Achieving an authentic Persian version of this questionnaire will be helpful to researchers in studies of internet users and It is recommended that a similar study for the preparation of the appropriate questionnaire for the population of high school students be done, as recently internet use in this category has also increased.

According to the population investigated in this study and access to the internet compared to the general population, the generalizability of the results to the general population cannot be certain.

Competing Interests

The authors declare that there is no conflict of interest.

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