

ABSTRACT

Introduction

The internet has conceptually transformed the earth into a high-dimensional information network village. It has improved many aspects of people's lives and has become an unseparated part of everyday routine. Internet addiction disorder is growing as a potentially problematic condition parallel to existing behavioral disorders, especially among adolescents. Nonetheless, the condition is widespread and problematic, limited scientific evidence is available on prevalence, diagnosis, risk factors, prevention, and efficacy of the treatment globally as well as locally.

Objectives

The objective of this study was to adapt, translate and validate an instrument (Internet Addiction Test) to assess Internet addiction disorder and to determine its prevalence and associated factors, and to determine the effectiveness of the developed educational package for the prevention of Internet addiction disorder among 15-19-year-old adolescents in Colombo district.

Methodology

The study had three components with three different study designs. Internet Addiction Test (IAT) developed by Young (1998) was adapted, translated, and validated to both Sinhala and Tamil languages resulting IAT-Sinhala and IAT-Tamil versions by conducting two descriptive cross-sectional validation studies. The developed tools were intended to assess Internet addiction disorder among 15-19-year-old adolescents in Colombo district. Statistical analysis was carried out to test the construct validity using SPSS-21 (Principal Component Analysis) with a sample of 228 for the IAT-Sinhala version and a sample of 225 for the IAT-Tamil version. A total of 239 and 240 study participants were selected for IAT-Sinhala and IAT-Tamil versions for the samples of Confirmatory Factor Analysis respectively. The statistical analysis was carried out by using LISREL 8.8. The reliability was assessed by internal consistency and test-retest reliability methods for both versions.

The second component of the study was a school-based descriptive cross-sectional study including an analytical component conducted among 15-19-year-old adolescents in Colombo district. A total sample of 1351 school-going adolescents was recruited by multi-stage stratified cluster sampling with probability proportionate to the size method.

The prevalence of Internet addiction disorder and its associated factors were determined. A self-administered questionnaire was used for the data collection and the data analysis was done using SPSS-21 version. Initial bivariate analysis was followed up with Multivariate Logistic Regression analysis to determine the associated factors of Internet addiction disorder.

Component three was a quasi-experimental study to determine the effectiveness of an educational intervention for the prevention of Internet addiction disorder. The educational package was developed on Social Cognitive Theory. The contents were designed following a literature review, expertise from a multidisciplinary panel, and using the preliminary results of the descriptive cross-sectional study. Adolescents of two educational zones in Colombo district were purposefully selected for the Intervention group (n=280) and control group (n=290). A self-administered questionnaire including validated IAT Sinhala version and outcome assessment questionnaire was used for the data collection. Following the implementation of the educational package, primary and secondary outcomes were compared between study groups by chi-square test and paired t-test. Statistical analysis was carried out using the SPSS-21 version.

Results

The IAT-Sinhala version demonstrated a four-factor model consisting of 20 items with the model indices of RMSEA= 0.06, CFI= 0.93, NNFI= 0.91, SRMR= 0.063, and GFI=0.77. It had an acceptable internal consistency with a Cronbach alpha value of 0.782. The IAT-Tamil version had a three-factor model with 20 items and the model indices were RMSEA=0.07, CFI=0.91, NNFI=0.87, and SRMR=0.066. It was also demonstrated excellent levels of reliability with a Cronbach alpha value of 0.948.

The prevalence of Internet addiction disorder among 15- to 19-year-old adolescents in Colombo district was 17.2% (95% CI: 15.2-19.3).

Male sex (AOR=2.27;95%CI:1.27-4.07), excessive use of social media (AOR=4.32; 95%CI:2.12-8.80), lack of engagement in outdoor sports (AOR=5.4;95%CI:2.49-11.73), unemployed mother (AOR=2.06;95%CI:1.40-3.04), excessive engagement of internet gaming (AOR=1.94;95%CI:1.34-2.82), excessive internet usage time per day for nonacademic activities (AOR=2.59; 95%CI:1.71-3.91), higher duration of internet use in years (AOR=2.64;95%CI:1.80-3.85), and no excessive internet use by the parents (AOR=0.46;95%CI:0.30-0.70) were the statistically significant associated factors of Internet addiction disorder among 15-19-year-old adolescents in Colombo district.

Following the intervention, the proportion of adolescents with the Internet addiction disorder in the intervention group was less in comparison with the control group and the difference was statistically significant ($\chi^2=9.026$, $df=1$, $p=0.003$). There was a statistically significant difference between the mean differences of pretest and post-test IAT scores ($t=-0.412$, $df=279$, $p=0.001$) with the reduction of mean IAT scores among the intervention group. The proportion of study participants engaged in social media ($\chi^2=10.6$, $df=1$, $p=0.001$) and excessive engagement of internet gaming ($\chi^2=5.514$, $df=1$, $p=0.019$) among the intervention and the control groups revealed a statistically significant difference in favour of the intervention group.

Conclusions and recommendations

Both IAT-Sinhala and Tamil versions were valid and reliable tools to assess Internet addiction disorder among 15-19-year-old school-going adolescents in Sri Lanka.

The prevalence of Internet addiction disorder among 15- to 19-year-old adolescents in Colombo district is within the range of regional levels. Future studies should favor the idea of using qualitative study methods to assess Internet addiction disorder to explore its effects among adolescents which could provide more valid information. Both versions of validated IAT and the developed educational package are recommended to use in future prevention programs and to aid the policymakers and the administrators in the prevention, diagnosis, and management of Internet addiction disorder among this age group.

Keywords: Internet addiction, adolescents, associated factors, prevention of Internet addiction, school-based

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