

Internet Addiction and its Affecting factors among Undergraduate Students: An Integrative Review

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Abstract

Background: This contemporary technological era is witnessing internet addiction as an emerging global concern and burden on mental health and society. It is a multidimensional phenomenon that affects an individual physically, psychologically, and socially.

Objective: The objective of this review was to describe internet addiction and examine its affecting factors among undergraduate university students.

Methods: This integrative review was conducted to examine the affecting factors related to internet addiction among university students using PRISMA guidelines. A systematic search was conducted using Academic Search Complete (EBSCO), PubMed, MEDLINE, APA PsycArticles, CINAHL, SCOPUS, google scholar, ScienceDirect published in the English language between the year January 2011 to January 2021.

Results: A total of seventeen articles were retrieved and their results were synthesized. The findings revealed three common measurement tools namely Internet Addiction Test (IAT), Young's Diagnostic Questionnaire (YDQ), and Chen's Internet Addiction Scale (CIAS). Two factors were found related to internet addiction, internal factors that include demographic factors and psychological factors and external factors like external financial funding, and internet accessibility in college.

Conclusion: As internet addiction leads to many psychiatric comorbidities, identification of the factors contributing to this phenomenon needs more attention and careful consideration for prevention strategies.

Keywords: Internet addiction, University students, Factors, Integrative review.

Introduction

The Internet has grown exponentially and penetrated all levels of society and serves to be an

indispensable tool in this modern technological era. Even though technological advancements drive humankind to betterment in many ways, it does have its dark side causing repercussions. The Covid-19 pandemic situation has not only made the internet usage an inevitable surge in everyone's life but parallelly becoming a dependency. Internet addiction is defined as a psychological dependence on the internet, characterized by salience, withdrawal, tolerance, negative repercussions/conflict, craving, and mood modification¹. Young (2011) mentioned

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about the three aspects of internet as an addictive behaviour: The Internet can be very entertaining and one gets easily addicted due to its unidentified aspects (Anonymity), borderless connection (Convenience), and switching to more comfortable activities (Escape)².

Internet World Stats (2017) revealed Asia to have the highest number of Internet users and global prevalence rate estimates for about 3.7% to 39.6% in youths^{3,4}. Internet addiction has consequences that impairs an individual's physical and mental health, and loss of significant relationships⁵. Recent reviews have focused on the health effect of internet addiction among adolescents and on the association between depression and social media addiction^{6,7}, but not on the overall prevalence and associated factors of internet addiction among undergraduate students.

Hence this current integrative review aims to examine the available literature for the affecting factors that are antecedents of internet addiction and its severity among university students. There is an extensive need to focus on the undergraduate student population as they are at high risk of developing internet addiction. The present review will also extend the existing literature on Internet addiction, which may help nursing professionals and provide direction for future research to remark advanced phenomenon.

Aim

The aim of this integrative review was to explore the prevalence, affecting factors, and measurement tools used for assessing internet addiction among undergraduate university students.

Methods

This integrative review was conducted to examine the affecting factors related to internet addiction among university students using PRISMA guidelines,

the Preferred Reporting Items for Systematic Reviews and Meta-analyses⁸.

Search strategy

A systematic search for the research articles published in the English language between the year January 2011 to January 2021 was done using Academic Search Complete (EBSCO), PubMed, MEDLINE, APA PsycArticles, CINAHL, SCOPUS, google scholar, ScienceDirect databases with the keywords: "Internet addiction" OR "Internet addictive behaviour" in combination with "Internet addiction". "Internet addiction risk factors" OR "factors affecting Internet addiction", "Internet addiction" AND "university students" OR "undergraduate students", "Internet addiction" AND "college students", "factors", "predictors", "determinants" to find articles that reported empirical evidence based on meta-analysis, reviews of literature, case-control studies.

Inclusion and Exclusion criteria

The articles retrieved through the systematic search were retained, if it was based on the following criteria (1) studies related to factors affecting internet addiction among students, (2) undergraduate students who are studying in the university or college, and (3) studies providing description about the measurement tools of internet addiction. The articles were excluded if they were published in books, dissertations, conferences, and non-scientific papers.

Data extraction

The retrieved data was extracted using the extraction criteria from the standardized tool PRISMA guidelines flowchart. Initially, a total of 762 publications were identified from the search databases, duplicate publications were removed and a total of 208 publications remained for further screening. The title and abstracts of these retrieved

articles were screened. Among 132 publications, a total of 76 publications were screened for full-text review, some publications were removed due to reasons like their focus was on vocational students, no description about measurement, and irrelevant study type. Finally, 17 publications met the inclusion criteria and were eligible for quality assessment.

Data synthesis and Quality assessment

The data from the included studies were extracted based on study publication (author(s), year of publication, country of origin), title, design, sample size and sampling method, measurement tools,

analysis, and main findings. Each publication was rated for quality using the QualSyst tool, the “Standard Quality Assessment Criteria” for evaluating the primary research papers from a variety of fields (Kmet et al., 2004)⁹. The quantitative studies were evaluated based on 14 items, and qualitative study based on 10 items. The obtained total score was converted to a percentage and during the evaluation process the articles having a score < 50% were considered having low quality. On average all the seventeen articles met the criteria and had a good quality score of > 50%. The result of the quality of the qualitative paper is presented in Table 1 respectively.

Table 1: Quality scoring of qualitative study

S.no	Criteria	Study No.17
1.	Question / objective sufficiently described	Yes
2.	Study design evident and appropriate?	Yes
3.	Context for the study clear?	Yes
4.	Connection to a theoretical framework / wider body of knowledge?	partial
5.	Sampling strategy described, relevant and justified?	Yes
6.	Data collection methods clearly described and systematic?	yes
7.	Data analysis clearly described and systematic?	partial
8.	Use of verification procedure(s) to establish credibility?	partial
9.	Conclusions supported by the results?	yes
10.	Reflexivity of the account?	partial
	Total score	16
	Percentage score	80%

Results

1. Description of the studies

Among the seventeen articles two studies were conducted in China, Nigeria, and Ethiopia, one study from Africa, India, Egypt, Malaysia, Saudi Arabia, Tanzania, Turkey, Vietnam, Yemen, and the USA. Among the included studies sixteen were quantitative, cross-sectional design was used in fourteen studies except for two studies that used a case-control design, ex-post-facto design. The sampling techniques vary across the studies, seven studies used random sampling techniques, five studies used cluster sampling, three studies used purposive sampling, and two studies used convenience sampling technique. The total number of samples in all sixteen studies ranged from 200-2500 and had both male and female participants, in which the participants in five studies were solely medical undergraduate students. Different statistical analysis was used in the studies. One Qualitative study was included in the review, it had 19 study participants with a mean age of 22.

2. Concept of Internet Addiction

2.1 Prevalence and severity of Internet addiction among the university students

There is variance in the prevalence of Internet addiction from low to high among different countries. Three studies found a comparatively very high prevalence rate of 80 to 85% among students^{10,11,12}, and two studies found to have moderate and low prevalence rates^{13,14,15,16}. The differences in prevalence rates are due to varied methodologies and measurement tools used across countries, although a higher prevalence of internet addiction was found among medical students¹³. Many studies found mild severity level of .4 to 29%^{17,13,14,18-20}. High severity level ranging from 60 to 70% among students was reported in two studies^{12,16}.

2.3 Measurement tools used for assessing Internet addiction

Three widely used measurement tools in the reviewed studies were found. Fourteen studies used the Internet Addiction Test (IAT) a self-rated 20-item, 5-point Likert questionnaire developed by Dr. Kimberly Young for screening and measuring internet addiction and its severity. The scale has been translated into several languages, for instance, two studies in this review used the Turkish version of internet addiction test^{19,20}, and one study used Arabic version of Internet Addiction Test scale¹⁵. Only one study used an 8-item self-reporting Young's Diagnostic Questionnaire (YDQ) the first version of IAT for evaluating internet addiction among students²². Interestingly two studies used 26-item Chen Internet Addiction Scale (CIAS)^{17,19}. Although the three scales differ based on the number of items, the commonality between these three measures are the components "compulsive use and social functioning", and their focus is more on the individual's behavior related to internet addiction.

3. Factors affecting Internet addiction

3.1 Internal factors

3.1.1 Demographic factors

The findings indicated age and gender to be the most significant predictor. The mean age of the participants ranged from 18 to 22.6 years and younger age was significantly associated with poor control internet usage^{18,21} on contrary two studies reported non-significant differences between age and internet addiction^{12,22}. Six studies reported that the male gender had a higher and significant relationship with internet addiction and used more internet for online gaming^{13,16,17,18,23}; three studies reported parental factors like low parental educational level and low parental control significantly common among the students associated with poor control of internet

use^{15,18,24}. However only little emphasis was given on parental literacy, and more studies focus only on the student's related factors. Two studies found first-year students having high significant association with internet addiction^{15, 22}.

The assessment of academic performance level varied among these reviewed studies like some studies used GPA scores and some based on the grades, but the student's attendance rate hasn't been reported. For instance, two studies reported students with lower academic performance had a higher level of internet addiction score^{10,15}, and they used the internet for non-academic purposes like social networking, watching videos, visiting the website with sexual content, and playing online games was reported as common purposes in six studies^{11,15,17,18, 20,25}. The internet use practices varied largely among the reviewed studies based on the duration and gadgets, but there is less clarity about the frequency of internet usage, number, and types of gadgets used.

3.1.2 Psychological factors

Seven studies revealed mental health factors like depression to have a significant positive relationship with Internet addiction³². Mental health conditions like somatization, anxiety, depression, self-contempt, and freshman year adaptive problems were found to be causal factors and predictors of Internet addiction. Freshman faces a lot of psychological issues when they have a transition from school to university. For instance, one study found features of depression, learning maladaptation, and dissatisfaction in the freshman having a significant positive relationship with internet addiction²². Resilience, shyness, and loneliness positively predicted internet addiction²⁶. Students with mental distress were four times more likely to develop Internet addiction¹¹. Psychoactive substance use-related factors like the habit of khat chewing, tobacco, drugs, smoking, and alcohol

consumption were 2.3 times most likely to have Internet addiction^{17,11}. Although alcohol drinking was reported the frequency and amount of alcohol consumption, peer pressure in association with substance use and internet addiction also needs to be further explored.

Students with internet addiction had higher mean scores on the personality traits like novelty-seeking and harm-avoidance¹⁷. Many young adults use the internet for its anonymity nature. For instance, one study reported students with higher communication skills were less likely to have internet addiction²⁰. Interestingly, this study found males students to have fewer communication skills than females.

3.2 External factors

The review found two external factors contributing to internet addiction. One is external funding like students who receive study loans or other types of funding compared to those on scholarships and students with a lower family income were more likely to have internet addiction^{15,16}. Second factor is internet accessibility in college. Two studies reported college to be the commonplace, and absence of student-friendly recreational centers in the university campus having a significant association with internet addiction²⁴.

Discussion

The review findings revealed a high prevalence rate of internet addiction among university students in Asian countries, this maybe attributable to using personal gadgets for internet access than common devices, and availability of cheap internet service providers. Alarmingly the overall severity level of internet addiction was more than 70% and most of the students were medical students, proper initiative must be taken to prevent this, as they are the future health care providers who handle patients with addiction

in the future. Younger age was found a significant predictor for internet addiction, but the age of first internet use and the years of internet experience also needs to be explored to identify the vulnerability to internet addiction.

The measurement tools found in this review were developed based on different concepts. For instance, the Internet addiction test (IAT) was developed based on the concepts from “pathological gambling” whereas Chen’s Internet addiction scale (CIAS) was developed based on the concepts from “substance abuse and impulse control”²⁷. Psychological factors like substance abuse seems to be predominantly leading to internet addiction among university students. This pandemic has indirectly led to changes in drinking and smoking behaviors, also stress and the financial burden of the potential infection also could result in increased negative emotions such as depression²⁸ and loneliness leading to internet addiction.

Factors like poor communication skills and adaptation problem during their freshman year university are reported, where one study viewed internet addiction through the lens of Sullivan’s Interpersonal theory and several scholars who work on this concept are inspired by the Davis cognitive-behavioral framework and regarded as the most substantial cognitive-behavioral approach of Internet addiction²⁹.

Internal factors contribute more to internet addictive behaviors than external factors among university students. Hence this review recommends more focus on mental health of the students by promoting mental health awareness about the adaptive internet use through lectures or informative sessions, counseling services that could develop cognizance into their maladaptive behaviors. Subsequently, initiatives should be taken at the institutional level parallelly along with the family in promoting the

mental health of the students.

Conclusion

The evidence from the current review implies the prevalence rate to be high among undergraduate university students than other student population, in addition, findings from the existing literature have revealed that the prevalence to be high in Asian countries than the western countries, and most of the studies addressed mental health factors to be one of the predominating factors. No longitudinal studies were found in this review and there is only a little evidence-based on economic, familial, and psychosocial factors. This review by integrating the recent evidence may shed light on the widely used measurement tools used for evaluating internet addiction and may inform future nursing practice, healthcare professionals, and policy makers for formulating effective intervention strategies. Future implications should focus not only on treatment strategies but also on the primary prevention of maladaptive patterns of internet use.

Conflict of Interest/Disclosure Statement–

There is no potential conflict of interest to disclose.

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