



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 8.4  
IJAR 2023; 9(2): 01-05  
[www.allresearchjournal.com](http://www.allresearchjournal.com)  
Received: 01-11-2022  
Accepted: 08-12-2022

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## Internet addiction and psychopathology among adolescents

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**DOI:** <https://doi.org/10.22271/allresearch.2023.v9.i2a.10548>

### Abstract

Internet use has increased rapidly and has become a major part of daily life. However, the advancement of internet technology not only brings benefits, but also negative results. Of these negative aspects, excessive internet use is increasing dramatically. Some Psychologists and educators have indicated the potential negative impact from excessive use and related physical and psychological problems. Thus, the aim of this study was to understand the difference in psychopathology between adolescents with internet addiction and without internet addiction. A between group research design with purposive sampling was opted for the study. The sample consisted of adolescent students aged between 19-21 years pursuing their degree course in Government College. Initially the adolescents were administered internet addiction scale to screen for internet addiction and then two groups were considered i.e. one with internet addiction and the other without internet addiction (average use of internet). Further both the groups were administered Symptom Checklist 90-R a self-report questionnaire that is designed to select the psychological symptom patterns across 9 dimensions. The analysis of data was done by computing t test. The results indicated that the group with internet addiction had significantly high pathology on 6 dimensions of Somatisation, Obsessive-compulsive, Interpersonal sensitivity, Depression, Anxiety and Hostility when compared to the group without internet addiction. The study concludes that internet addiction may lead to many psychopathologies and hence a check on usage time, purpose of surfing internet etc. is needed.

**Keywords:** Internet addiction and psychopathology and adolescents

### Introduction

Internet use has increased rapidly and has become a major part of daily life. Technology is changing the nature of problems (Young, 1996) <sup>[37]</sup>. However, the advancement of internet technology not only brings benefits, but also negative results. Of these negative aspects, excessive internet use is increasing dramatically. Symptoms often identified were a preoccupation with the internet, an inability to control use, hiding or lying about the behaviour, psychological withdrawal, and continued use despite consequences of the behaviour (Young, 2007) <sup>[42]</sup>.

“Healthy internet use” is the use of the internet for an expressed purpose in a reasonable amount of time without cognitive or behavioural discomfort. Problematic internet use is “a psychiatric condition which involves maladaptive thoughts and pathological behaviour” (Davis, 2002) <sup>[5]</sup>. Internet addiction, also described as pathological internet use, is defined as an individual’s inability to control his or her use of the internet, which eventually causes psychological, social, school and/or work difficulties in a person’s life (Davis, 2001; Young and Rogers, 1998) <sup>[4, 36]</sup>. Characteristics of compulsive online users include: a preoccupation with the Internet, lying about the behaviour, a loss of interest in other interests and/or people only to prefer more time online, using the Internet as a form of escape, an inability to control the behaviour, and impairment in functioning.

Psychologists and educators are aware of the potential negative impact from excessive use and related physical and psychological problems (Greenfield, 2000) <sup>[12]</sup>. Some Psychologists and educators have indicated the potential negative impact from excessive use and related physical and psychological problems. Users who spend a significant amount of time online often experience academic, relationship, financial, and occupational difficulties, as well as physical impairments (Chou, 2001) <sup>[3]</sup>.

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Some researchers (Brenner, 1997; Nie and Erbring, 2000) [1, 25] have even linked internet use with an increase in psychological difficulties such as depression and loneliness. There has been increased interest in the addictive potential of the internet and the effect this can have on psychological well-being (Niemz, Griffiths and Banyard, 2005) [26].

It is considered that internet addiction is linked to several psychopathologies. The study of Alavi, Maracy, Jannatifard and Eslami (2011) with university students showed that many psychopathologic features (somatization, depression, anxiety, paranoid ideation, hostility, interpersonal sensitivity, obsessive-compulsive specifications) are much more frequent in adolescents with internet addiction. In a similar study by Adalier and Balkan (2012), it was found that many symptoms related to psychopathologic features are much more frequent in adolescents with internet addiction than in those without internet addiction. Moreover, in studies analyzing psychiatric comorbidity in internet addiction, it was found that psychopathologies such as ADHD, depression, schizophrenia and OCD accompany internet addiction.

It can be said that depression and anxiety are among the most emphasized psychopathologies in the process of understanding internet addiction. It was found that individuals with internet addiction are affected more by depression and anxiety (Goel, Subramanyam and Kamath, 2013) [9]. Ko *et al.* (2012) [17] found in their study that resistant depressive symptoms accompany resistant internet addiction individuals, and following treatment of internet addiction, depression, social anxiety and aggressive behaviors diminish in Internet addicts.

There has been increased interest in the addictive potential of the internet and the effect this can have on psychological well-being (Niemz, Griffiths and Banyard, 2005) [26]. Studies indicated that the potential for negative psychological and social consequences reduced as society became more accustomed to using the internet (Kraut, Kiesler, Boneva, Cummings, Helgeson and Crawford, 2002) [18]. The explosive growth of the internet in the last decade has had a huge impact on psychological research in understanding psychopathology among adolescent with internet addiction and hence this study was done.

## Methodology

### Objective

The objective was to study the difference in psychopathology between adolescents with internet addiction and without internet addiction.

### Hypotheses

It was hypothesized that there will be no significant difference in psychopathology (Depression, Obsessive Compulsion, Interpersonal Sensitivity, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation and Psychoticism) between adolescents with internet addiction and without internet addiction.

### Variables

Adolescents with and without internet addiction was considered as independent variable and Responses on Symptom Checklist 90-R a self-report questionnaire covering pathological domains of somatisation, depression, obsessive compulsion, interpersonal sensitivity, anxiety,

hostility, phobic anxiety, paranoid ideation and psychoticism as dependent variable.

### Sample

The sample consisted of 68 adolescent students aged between 19-21 years pursuing their degree course in Government College. Adolescents pursuing their degree course in Government College.

### Inclusion criteria

- Adolescent students aged between 19-21 years pursuing their degree course in Government College were considered for the study.
- Adolescents with and without internet addiction (screened on internet addiction scale) were considered for the study.

### Exclusion criteria

- Adolescents outside the domicile of the region were not considered for the study.
- Adolescents staying in hostels/ residential colleges were not considered for the study.
- Adolescents undergoing counselling or psychotherapy were not considered for the study.
- Adolescents with physical disabilities were not considered for the study.

### Research design

A between group research design with purposive sampling was opted for the study.

### Tools

#### Internet Addiction Test (IAT) (Dr. Kimberly Young, 1999)

Internet Addiction Test was drawn from earlier research and clinical studies that explored various aspects of online behavior and profiled characteristics that differentiate 'normal' online users from compulsive online users (e.g., Greenfield, 1999; Griffiths, 1996; Morahan-Martin, 1997; Young, 1997a, 1997b, 1998, 1999) [10, 11, 23, 38-41].

The Internet Addiction Test is a 20-item questionnaire which measures characteristics and behaviours associated with compulsive use of the internet that include compulsivity, escapism, and dependency. The Internet Addiction Test measures the severity of self-reported compulsive use of the Internet for adults and adolescents. The scale was created by adapting DSM-IV criteria for pathological gambling. The test measures the extent of client's involvement with the computer and classifies the addictive behaviour in terms of mild, moderate, and severe impairment.

Research addressing the sensitivity and validity of these score ranges is published in several journals. Studies have found that the Internet Addiction Test is a reliable measure that covers the key characteristics of problematic Internet use. The Internet Addiction Test is the most widely used Internet addiction scale and the test has been translated in several languages including English, Chinese, French, Italian, Turkish, and Korean.

#### Symptom Checklist 90-R (SCL-90-R) (Derogatis, 1992)

The Symptom Checklist-90 (SCL90) is a 90-item questionnaire used to assess psychological problems. The

scale is evolved from the Hopkins Symptom Checklist (HSCL). It is intended for use as Quick screening instrument, Measure of the outcome or status of psychopathology, Quantification of current psychopathology along nine symptom constructs. It may be utilized with community respondents, students, medical patients, and various types of psychiatric outpatients and inpatients. It is available in English, French, Spanish, German, Russian, and 20 other languages.

Coefficients of internal consistency have been reported for the SCL-90-R subscales and global indexes across different patient populations – In two studies, Cronbach's alpha ranged from .79-.90. Stability coefficients have been adequate across a range of groups and test-retest interval – 1 week test-retest interval:  $r = .78-.90$  – 10 week test-retest interval:  $r = .68-.80$ . Studies have generally found greater support for convergent than divergent validity. Correlations between primary dimensions of SCL-90-R and three sets of scores from the MMPI demonstrated that the nine primary dimensions of the SCL-90-R correlated significantly in a convergent fashion with like score constructs on the MMPI. Studies have generally provided support for nine dimensions corresponding to the subscales of the SCL-90-R.

### Procedure

Initially the adolescents were administered internet

addiction scale to screen for internet addiction and then two groups were considered i.e. one with internet addiction and the other without internet addiction (average use of internet). Further both the groups were administered Symptom Checklist 90-R.

### Analysis of results

The analysis of data was done by computing 'independent t test'.

### Results and Discussion

As indicated earlier the sample consisted of 67 adolescent students aged between 19-21 years pursuing their degree course in Government College; Adolescents pursuing their degree course in Government College; 35 Adolescents with and 32 without internet addiction (screened on internet addiction scale).

**Table 1:** Showing the sample characteristics:

	Adolescents with internet addiction	Adolescents without internet addiction
Number	35	32
Age range	19-21 years	
Education	Pursuing their degree course	
Type of college	Government College	

**Table 2:** Showing the mean, SD and t ratio on 9 domains of Symptom Checklist 90-R for adolescents with and without internet addiction:

Domains	Adolescents with internet addiction		Adolescents without internet addiction		t ratio
	Mean	SD	Mean	SD	
Somatisation	23.77	8.89	18.28	7.93	2.67**
Obsessive compulsive	21.09	7.66	16.28	7.93	2.52**
Interpersonal sensitivity	20.77	7.99	15.28	7.93	2.82**
Depression	24.06	8.68	18.81	8.50	2.50*
Anxiety	22.91	10.18	16.59	8.69	2.74**
Hostility	8.09	2.02	6.25	2.29	3.47**
Phobic anxiety	4.91	1.74	4.81	1.57	0.25
Paranoid ideation	4.77	1.33	4.47	1.16	0.99
Psychoticism	1.83	1.32	1.81	1.26	0.05

\*\*P<.001 Level; \* P<.005 Level

The results indicated that the adolescents with internet addiction had significantly more pathology on 6 dimensions of somatisation, obsessive-compulsive, interpersonal sensitivity, depression, anxiety and hostility. On five dimensions of somatisation, obsessive-compulsive, interpersonal sensitivity, anxiety and hostility the difference was significant at 0.01 level, whereas on one domain of depression the difference was significant at 0.05 level. There was no significant difference on 3 dimensions of pathology such as phobic anxiety, paranoid ideation and psychoticism. Related to somatisation in the present study it is found that the adolescents with internet addiction had significantly more somatisation issue. Similarly study by Guo *et al.* (2020) [13] showed that Moderate and severe internet addiction were strongly associated with a broad group of adverse mental health outcomes, including somatic symptoms that are the core features of many medical illnesses. A cross-sectional study found that internet addiction was significantly associated with poor sleep quality (Lam, 2014) [19].

Related to obsessive-compulsiveness in the present study it is found that the adolescents with internet addiction had significantly more obsessive-compulsiveness. Similarly

studies have shown that students with excessive use of Internet reported the presence of obsessive-compulsive (Goel, Subramanyam and Kamath, 2013., Lin, Ko and Wu, 2011., Siomos *et al.*, 2012) [19, 21, 28].

Related to interpersonal sensitivity in the present study it is found that the adolescents with internet addiction had significant issues in interpersonal sensitivity. Previous studies indicate that people may develop a new lifestyle through internet activities, which may cause a worsening in their actual social relationships (Whang, Lee and Chang, 2003) [33]. High levels of internet use which interfere with daily life have been linked to a range of problems, including relationship breakdown (Weiser 2001; Widyanto and McMurrin 2004; Yao-Guo, Lin-Yan, and Feng-Lin 2006; Young 1998) [32, 34, 35, 40].

Related to depression in the present study it is found that the adolescents with internet addiction had significantly more depression. Meta-analysis by Ho *et al.* (2014) [14] showed that the prevalence of depression among internet addiction cases was 26.3%. Study by Guo *et al.* (2020) [13] showed that Moderate and severe internet addiction were strongly associated with a broad group of adverse mental health outcomes, although clinically significant depression showed

the strongest association. It was seen that nearly half of the Internet addicts seeking treatment have depressive symptoms. In studies on internet addiction, addiction scores showed a positive correlation with depression scores (Müller, Beutel and Wölfling, 2014) <sup>[24]</sup> and those individuals with internet addiction had higher depression scores (Tonioni *et al.*, 2012) <sup>[30]</sup>. Cross-sectional studies found that internet addiction was significantly associated with depression (Ho *et al.*, 2014) <sup>[14]</sup>, and even suicidality (Cheng *et al.*, 2018) <sup>[2]</sup>. In a longitudinal study, Lau *et al.* (2018) <sup>[20]</sup> found a bidirectional predictive relationship between internet addiction and depression. Some studies suggest that, relative to internet addiction, the association of problematic online gaming might be stronger with inattention but less strong with other common psychopathologies such as depression (Schou Andreassen *et al.*, 2016 and Király, 2014) <sup>[27, 16]</sup>. Cheng *et al.* (2018) <sup>[2]</sup> documented that internet addiction (compared with no internet addiction) was independently associated with suicidal ideation. Many other studies have also shown that students with excessive use of Internet reported the presence of depression (Goel, Subramanyam and Kamath, 2013., Lin, Ko and Wu, 2011., Siomos *et al.*, 2012) <sup>[9, 21, 28]</sup>.

Related to anxiety in the present study it is found that the adolescents with internet addiction had significantly more anxiety. Meta-analysis by Ho *et al.* (2014) <sup>[14]</sup> showed that the prevalence of anxiety among internet addiction cases was 23.3%. In studies on internet addiction, addiction scores showed a positive correlation with anxiety scores (Müller, Beutel, & Wölfling, 2014) <sup>[24]</sup> and those individuals with internet addiction had higher anxiety scores (Tonioni *et al.*, 2012) <sup>[30]</sup>. Cross-sectional studies found that internet addiction was significantly associated with anxiety (Ho and *et al.*, 2014) <sup>[14]</sup>. Students with excessive use of Internet reported the presence of anxiety were supported by many studies (Goel, Subramanyam and Kamath, 2013., Lin, Ko and Wu, 2011., Siomos *et al.*, 2012) <sup>[19, 21, 28]</sup>.

These results are important for informing health policymakers and service suppliers. It could also be concluded that internet addiction may lead to many psychopathologies and hence a check on usage time, purpose of surfing internet etc. is needed.

### Conclusions

- The group with internet addiction had significantly high pathology on 6 dimensions of Somatisation, Obsessive-compulsive, Interpersonal sensitivity, Depression, Anxiety and Hostility.
- There was no significant difference on 3 dimensions of pathology such as phobic anxiety, paranoid ideation and psychoticism.

### Implications

The study did find that there was significant pathology among adolescents with internet addiction than without internet addiction. There is also a need for more studies of adolescents who visit psychiatric clinics and seek Professional help for addicted Internet use. It is important for psychologists to plan intervention programmes for de-addiction of internet addiction.

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