

# Relationship Of Internet Addiction With Social Connectedness, Self Esteem, Anxiety, Depression, And Insomnia

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## ABSTRACT

**Background:** Internet Addiction Disorder (IAD) refers to excessive use of internet which lead to distress and impairment in socio-occupational functioning. A number of psychological and personality variables seem to be correlated to it.

**Objective:** The aim of this study was to find out the relationship of Internet Addiction with Anxiety, Depression, Self Esteem, Social connectedness and Insomnia.

**Methodology:** Around 140 college going students, both males and females in the age range of 16-35 years were recruited using purposive sampling technique. Online questionnaire consisting of Young's Internet Addiction Scale (Kimberly,1998), Rosenberg Self Esteem Scale (Rosenberg,1965), Generalized Anxiety Disorder-7item Scale-GAD7(Spitzer,2006), Patient Health Questionnaire-PHQ9 (Kroenke,2001) Social Connectedness Scale-R(Lee,2001), Insomnia Severity Scale (Morin,2011) were administered.

**Results:** Descriptive-analytic correlation revealed that Internet addiction was positively related to Depression, Anxiety and Insomnia Scores and negatively related to Social Connectedness and Self-esteem Scores. Regression analysis indicated that Internet addiction was able to predict the variance in psychological variables like social connectedness, self-esteem, depression, anxiety and insomnia to some extent.

**Conclusion:** Current study is replicating results from studies worldwide. It can be concluded that IA is associated with poor sleep quality, low social connectedness, low Self Esteem and High depression and Anxiety severity. Further longitudinal studies and larger sample sizes are required to establish sound model for etiopathogenesis of IA, as these variables are also dependant on each other.

**Keywords** –internet, addiction, social connectedness, self-esteem, insomnia

## INTRODUCTION

Today in the 21<sup>st</sup> century Internet has become an integral part of our lives. With easy affordability and access, internet is expected to be used by 627 million people in India by the year 2019. It is being frequently used for Online purchasing, chatting, communicating with others, gaming, browsing, data collection and so on. This excessive preoccupation and use leading to withdrawal symptoms, physical and psychiatric comorbidities; has led to its being labelled as Internet Addiction.

Internet Addiction (IA) is still struggling for recognition as a psychiatric diagnosis, though Internet Gaming disorder has now been included in ICD-11 recently. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), problematic Internet use on gaming has been considered to merit inclusion in the future edition of DSM.<sup>[1]</sup> The definition is based on impulse control disorder or substance use disorder, similar to any other Substance Use Disorders. It has never been well conceptualised and this was pointed out very early by Mark Griffith (Griffith,2016) that there is a difference between addiction to internet and addiction on internet.<sup>[2]</sup>

IA refers to excessive or poorly controlled preoccupations, urges, or behaviours regarding computer use and Internet access that leads to impairment or distress. It's association with various personality, neurocognitive factors, comorbid psychiatric disorder is being researched now. Recent research has placed increasing emphasis on Internet misuse and its consequences, both psychological and behavioural, among young people.<sup>[3-6]</sup> The emergence of possible behavioural alterations, loss of control, school failure, social isolation and an increase in family conflict are some of the ensuing difficulties<sup>[7,8]</sup>. Several studies have reported correlations between Internet Addiction Disorder (IAD) and depression.<sup>[9-15]</sup> It has been hypothesised that anxiety and depression may lead to IA or vice versa. People with

depression and anxiety try to find their ideal in virtual world, which lead to transient escape from stress.<sup>[16-20]</sup> Young (1998) reported that the vast majority of Internet addicts have a history of depression and anxiety. Studies have revealed that personality traits, self-esteem and psychiatric disorders are associated with Internet addiction.<sup>[21]</sup> The relationship between Internet addiction and self-esteem has been investigated in several studies.<sup>[22]</sup> Adolescents with low self-esteem tend to spend more time on social networking sites than those with higher self-esteem.<sup>[23-25]</sup>

A very important confounding variable is aloofness, social disconnect and psychological distance that excessive internet use leads to. Social connectedness which is considered as an attribute of the self that reflects cognitions of enduring interpersonal closeness with the social world was assessed in this study. People with high connectedness tend to easily identify with others\*, feel close to other people, perceive others as approachable, friendly, and participate in social activities.<sup>[26]</sup>

Excessive use of Internet leads to increased waking hours and disturbance in sleep-wake patterns. Another important related variable in terms of physical symptom associated with Internet Addiction is Insomnia. Insomnia which refers to difficulty initiating sleep, maintaining sleep and early morning awakenings lasting for more than 3 days in a week and for more than 3 months in the absence of any other physiological cause and substance use. Internet Addiction is positively related to Insomnia.<sup>[27]</sup>

IA is relatively a new area and research is still in infancy therefore the curiosity of its link with certain psychological and social variables remains.

The present study, therefore, was conducted with the objective to study the relationship between Internet Addiction and various socio-demographic variables, psychological dimensions (social connectedness and self-esteem), psychiatric comorbidity (depression

and anxiety) and physical symptoms like insomnia.

## Material and Methods:

### Sample

The sample was selected using random sampling technique. 140 college going males and females in the age range of 16-35 years were recruited from an academic institution in a northern city of India.

### Inclusion Criteria:

1. Individuals with good comprehensibility of English language
2. Individual with 16+ age
3. Willing to participate in the study
4. Individuals with uninterrupted access to the internet
5. Individuals using internet frequently for academic and recreational purposes

### Exclusion Criteria:

1. Individuals with poor comprehensibility of English language
2. Not willing to participate in the study
3. Individuals with interrupted access to the internet
4. Individuals not using internet frequently for academic and recreational purposes

### Instruments:

1. **Young's Internet Addiction Test (YIAT)<sup>[28]</sup>**: This scale was developed by Kimberley Young and most common scale to be used to measure extent of IA. YIAT is a self-administered, 20 questions scale, where each item is scored using a five-point Likert scale (0 = less extreme behaviour to 5 = most extreme behaviour for each item). It is

based on pathological Gambling Criteria and measures characteristics and behaviours associated with compulsive use of the Internet that include compulsivity, escapism, and dependency. The instrument has good psychometric properties. The reliability for this questionnaire is 0.899

2. **Generalized Anxiety Disorder (GAD-7)<sup>[29]</sup>**: GAD-7 is self-administered 7 items scale which measures the problem associated with anxiety in last 15 days. It is rated on Likert scale of 0 to 3 (0 = not at all and 3=nearly every day) and gives total score out of 21. It subsequently measures the severity of anxiety on the basis of score. Higher the score, higher the anxiety levels.
3. **Patient Health Questionnaire (PHQ-9)<sup>[30]</sup>** : PHQ-9 is a self-administered questionnaire consist of 9 items rated on Likert Scale of 0 to 3(0 = not at all and 3=nearly every day) and gives total score out of 27. It diagnoses depression and subsequently categorized depression on the basis of severity. Higher the score, higher the severity of depression.
4. **Rosenberg Self-Esteem Scale<sup>[31]</sup>**: It is a 10-item, self-administered scale rated on a 4-point ordinal scale. It ranges from 0 to 3, (0= strongly agree to 3=strongly disagree). A score of 15-25 is considered average and a score of less than 15 suggests low self-esteem.
5. **Social Connectedness Scale-Revised (SCS-R)<sup>[32]</sup>**: It is a self-administered scale of 20 questions. Each answer is rated on a 6-point Ordinal scale. Response 1=strongly disagree to response 6=strongly agree. Higher the score, higher are the levels of social connectedness.

6. **Insomnia Severity Index (ISI)**<sup>[33]</sup>: It is a self-administered scale consisting of 7 questions. First three questions measure insomnia problem on Likert scale of 0 to 4 (0 = none and 4= very severe). Remaining of 4 questions are related to distress and interference in daily activity due to sleep problem are measured on Likert scale of 0 to 4. ISI gives total score by adding up for all 7 items out of 28. It also measures severity of insomnia. Higher the score would mean more severe Insomnia.

### Procedure

Online questionnaire was prepared. The students were approached through their class representatives and the questionnaires were sent to them on their email ids. Participants filled the questionnaire as per their convenience and responses were collected online.

### Statistical Analysis

Data were analysed using the Statistical Package for the Social Sciences (IBM SPSS Statistics 20) software version 25.0. Descriptive statistics in the form of mean, standard deviation (SD), and frequency (%) were computed for socio-demographic variables. Bivariate Correlational analysis was carried out to find the relationship between Internet Addiction, Social Connectedness, Depression, Anxiety, Self-esteem and Insomnia.

Regression analysis was performed where Internet Addiction was kept as independent variable (predictor variable) and Depression, Anxiety, Social Connectedness, Self-esteem and Insomnia were used as dependent variables.

### Ethical Considerations:

Informed consent was sought from all the subjects before recruiting them for the study. The purpose of the study was explained to them. Confidentiality was maintained. The participation was completely voluntary.

Anyone who wished to withdraw was not included in the study.

### RESULTS:

**Table 1** presents the socio-demographic profile of the participants. A total of 140 participants took part in the study. Mean age of the sample was  $19.36 \pm 3.915$  years. There were 74 (52.9%) males and 66 (47.1%) female participants. There were 119 (85%) twelfth pass, 12(8%) graduates, 7(5%) postgraduates, and 2 (1.4%) tenth pass.

**Table 2** shows the Online behavioural profile of the participants. Around 81(57.8%) of the total participants reported their major activity on Internet as social networking, chatting, video-calling etc., around 28% for academics, 16(11.4%) used it for gaming, 6(4.2%) for entertainment purposes like movies, web-series etc., 5(3.5%) for professional use, 2 (1.4%) for general surfing, 1(0.7%) for gambling and around 1(0.7%) for browsing pornographic sites. Around 22(17.9%) of them spent 25 hours and more every week on Internet and related activities, around 22 (15.7%) of them spent 20-25 hours weekly, 31(22.1%) spent 15-20 hours per week and around 38 (27.1%) spent 10-15 hours per week on Internet. On Young's Internet Addiction Test (YIAT), 50.7% of the participants scored between 0-31, 39.3% scored between 31-49, 10 % of them scored between 50-79, and almost none scored between 80-100 range.

**Table 3** shows the descriptive statistics for all the variables. Mean scores on YIAT measuring Internet addiction was  $30.14 \pm 14.00$ , on PHQ-9 measuring depression was  $79.72 \pm 11.060$ , on GAD-7 measuring Anxiety was  $6.14 \pm 4.74$ , on SCS-R measuring social connectedness was  $79.72 \pm 11.060$ , on RSES measuring self-esteem was  $25.36 \pm 3.708$ , on ISI measuring Insomnia severity was  $9.24 \pm 5.932$ .

**Table 4** shows Internet Addiction was positively correlated with Depression (0.358,  $p < 0.01$ ), Anxiety (0.397,  $p < 0.01$ ) and Insomnia (0.442,  $p < 0.01$ ). IA was significantly negatively correlated to Social Connectedness (-.318,  $p < 0.01$ ) and Self-esteem (-.296,  $p < 0.01$ ).

**Table 5** shows the linear regression analysis with IA as an independent variable and all others as dependent variables. Scores obtained

on Internet Addiction Scale could significantly produce 10% variance in social connectedness  $R^2 = 0.101$ ,  $F(1,138) = 15.482$ ,  $p < 0.01$ , caused 16 % variance in anxiety,  $R^2 = 0.157$ ,  $F(1,138) = 25.746$ ,  $p < 0.01$ , caused 13% variance in depression,  $R^2 = 0.128$ ,  $F(1,138) = 20.232$ ,  $p < 0.01$ , 9% variance in self-esteem,  $R^2 = 0.088$ ,  $F(1,138) = 13.288$ ,  $p < 0.01$  and 20% variance in insomnia,  $R^2 = 0.196$ ,  $F(1,138) = 33.539$ ,  $p < 0.01$ .

**Table 1: Socio-demographic profile of participants, n=140**

Variables	Categories	Frequencies (%)
Gender	Male	74 (52.9%)
	Female	66 (47.1%)
Age		$19.36 \pm 3.915$
Education	10 <sup>th</sup> pass	2 (1.4%)
	12 <sup>th</sup> pass	119 (85%)
	Graduate	12 (8.6%)
	Postgraduate	7 (5%)

**Table 2: Online behavioural profile of the respondents (n=140)**

Variables	Dimensions	Frequencies (%)
Use of internet	Chatting & Social Networking	81 (57.8%)
	Academics	28 (20%)
	Gaming	16 (11.4%)
	Entertainment (movies, videos etc.)	6 (4.2%)
	Professional use	5 (3.5%)
	Surfing/Browsing	2 (1.4%)
	Pornography	1 (0.7%)
	Gambling	1 (0.7%)
Hours of internet use per week	Around 5 hours	24 (17.1%)
	10-15 hours	38 (27.1%)
	15-20 hours	31 (22.1%)
	20-25 hours	22 (15.7%)
	More than 25 hours	25 (17.9%)
Internet addiction on YIAT	0-30	71 (50.7%)
	31-49	55 (39.3%)
	50-79	14 (10%)
	80-100	0

**Table 3: Descriptive statistics about Internet Addiction, Social Connectedness, Self-esteem, Insomnia Severity, Generalized Anxiety Disorder and Depression**

Variables	Mean $\pm$ SD
Internet Addiction	30.14 $\pm$ 14.00
Social Connectedness	79.72 $\pm$ 11.060
Self-esteem	25.36 $\pm$ 3.708
Depression	7.33 $\pm$ 4.601
Insomnia Severity	9.24 $\pm$ 5.932
Generalized Anxiety Disorder	6.14 $\pm$ 4.746

**Table 4: Correlation between Internet Addiction, Social Connectedness, Self-esteem, Depression, Insomnia Severity and Generalized Anxiety Disorder PWB (n=140)**

Variables	Social Connectedness	Self-esteem	Depression	Insomnia Severity	Generalized Anxiety Disorder
Internet Addiction	-0.318**	-0.296**	0.358**	0.442**	0.397**
Social Connectedness	1	0.460**	-0.465**	-0.350**	-0.440**
Self-esteem		1	-0.487**	-0.279**	-0.437**
Depression			1	0.508**	0.742**
Insomnia Severity				1	0.502**

\*\*0.01

**Table 5: Linear Regression analysis summary for Internet Addiction as independent variable (predicting variable)**

Dependent Variables	R <sup>2</sup>	B	SEB	t	Sig	F	Sig.
Social Connectedness	0.101	-0.251	0.064	-3.935	0.000	15.482	0.000
Anxiety	0.157	0.397	0.026	5.079	0.000	25.746	0.000
Depression	0.128	0.358	0.026	4.498	0.000	20.232	0.000
Self-esteem	0.088	-0.296	0.022	-3.645	0.000	13.288	0.000
Insomnia	0.196	0.442	0.032	5.791	0.000	33.539	0.000

Predicting variable: IA; B: Unstandardized coefficients; SEB: Standard error of B

## Discussion:

The boundless availability of smart phones, uninterrupted internet access at affordable prices and explosive growth of social networking sites in India have resulted in overindulgence in Internet use. The addiction to internet has negative impact on mental health and academic performance. The aim of the present study was to study the relationship of Internet addiction with social connectedness, self-esteem, depression, anxiety and insomnia.

In this study, out of the total 140 respondents, 52.9% were males and 47.1% were females. Majority of the participants (85%) were undergraduates. Around 57.8% of the participants used Internet for social networking, chatting etc. as a major activity online. (Explain take lines from my other paper.

Internet addiction was found to be positively correlated to depression and anxiety and have a significant association. People who score higher on YIAT tend to exhibit more symptoms of Internet addiction i.e. withdrawal, preoccupation, escape etc., due to which they limit themselves to internet and had less interaction with society, poor stress handling, and low academic performance. Other could be vice versa; Depressed individuals try to find distraction from unpleasant emotions in internet and may become addicted to it. Our study is replicating the results from various studies conducted in multiple countries.

Our study demonstrated YIAT scores are negatively correlated to SCS-R score for Social Connectedness. Individual with internet addiction are not able to relate to others. They consider themselves lonely, lack real life participation in society and internet is best source to fill this void. These results also consistent with other studies on IA.

Another finding is IA is associated with poor self-esteem. Individual with poor self-esteem consider themselves inferior to others. An internet account on social media offers them anonymity, fearless expression of emotion

helps them to fill this gap; which they found in real world. It helps them to match their “ideal self” through virtual world.

Our study demonstrated that people with higher YIAT are associated with poor sleep quality. Regression model demonstrated insomnia is significant predictor of IA. Individuals with internet addiction would use internet in free time which is night and may lead to poor sleep hygiene. Which could further be related to poor mental well-being and poor academic performance in youth.

It is worth to be noted that all variables in studies are also interconnected to each other and often confound.

## Limitations of the Study-

1. Many other variables can be added.
2. Purposive sampling, so results can be generalized
3. Small sample size

## Conclusion:

These all finding are suggestive that IA is leading to significant mental and physical health burden among youth, who are the major and productive age group of India in present time. The study is demonstrating important findings which need to be addressed. More research is needed to establish IA as well recognisable psychiatric disorder so measures can be invented and implemented in near future. All these variables playing crucial role in IA and awareness regarding same is needed, which would also enhance interest of researches in this entity.

## Regression Interpretation

Regression analysis showed that IA proved to be a significant predictor variable for all other psychological variables explored in this study. IA was able to produce variability in all the variables but maximum variance (20%) was caused in Insomnia. This can be explained by the overindulgence in entertainment portals

like Netflix, prime video, YouTube etc. where people tend to 'binge watch' web serials and movies. Binge-watching, is an act of streaming many television episodes in one sitting. New and buzzy series are constantly being added to these portals. According to a recent study, avid binge-watchers reported poor sleep quality, increased fatigue and more insomnia symptoms. They exhibit increased cognitive arousal. (ref below). This is in line with our findings.

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