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DEPRESSION, ANXIETY AND STRESS AMONG INTERNET USER STUDENTS: A COMPARATIVE STUDY

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Abstract

Background: The use of Internet has become an integral part of everyday life, especially among the youth. In spite of the widely perceived merits of this tool, psychologists and psychiatric social worker have been aware of the negative impacts of its use, especially the over or misuse and the related problems. One of the most common of these problems is internet addiction and addiction produced negative impacts physical and psychological health. Aim: Aim of the present study was to identify the High internet use among Female B.A. student and to assess the Depression, anxiety and stress level among High and Low internet user. Methods: It was a School based prospective study. Purposive sampling technique used for the study. Total 80 female college students (female student who were Studying in B.A. I, II, III years) from Baba Siddh Kanya Mahavidyalaya, Arjunpur, Utter Pradesh were taken in the study in which 40 were high internet user and 40 were low internet user. The age range of the sample were 18 to 24 years. Subject were evaluated by using socio demographic datasheet, Internet Addiction Test (IAT) and Depression, anxiety and stress scale (DASS-21). Results: Present study finding revealed that there is a difference in the socio-demographic variables of the family income among high and low internet users.The overall prevalence of High Internet Users in B.A. female students was found to be 29.9% and Low Internet users was 70.1 % and High internet users have more Depression, Anxiety and stress as compared to Low internet user. Conclusion: A high prevalence rate in the present study indicates towards the increasing use of the Internet in problems in their health among female B.A. student. Significant differences were observed in

terms of comparison of the two groups on the domain of Depression, Anxiety and Stress. These are the important findings that justify the need for the study on High internet users.

Keywords: Internet addiction, college student, Depression, Anxiety and Stress.

Introduction:

Internet has become a primary part of daily life all over the world. In India explosive growth in the use of internet in the last decade. There were about 483 million internet users in 2018 (Diwanji, 2019). This figure expected to grow to 627 million in 2019 (PTI, 2019). 385 million internet user in India are 12+ years old and 66 million are 5-11 years old who access internet on device of family member (IAMAI, 2019). The term "internet addiction" was proposed by Dr.Ivan Goldberg in 1995 for pathological compulsive internet use (Goldberg, 1996). Young linked excessive internet use most closely to pathological gambling, a disorder of impulse control in DSM IV and adapted the DSM IV criteria to relate to internet use in the Internet Addiction Test developed by her. According to her, various types of internet addiction are cyber-sexual addiction, cyber-relationship addiction, net compulsions, information overload, and computer addiction. Gambling disorder is the only behavioral (non-substance related) addiction included in DSM-5. Still in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), Internet Gaming Disorder is identified in Section III as a condition warranting more clinical research and experience before it might be considered for inclusion in the main book as a formal disorder.

The growth of the internet is remarkable While Internet has developed our lives, however, for some, Internet use can grow into a problem. People may find themselves online-shopping, gaming, social networking, site surfing, blogging, stock trading, gambling, having cybersex, viewing pornography-to an extent that it interferes with their ability to keep up with school, relationships, and work, and/or has a negative effect on their mood. School and College students in particular may develop overuse of the Internet. Griffiths (2000) also emphasized that “excessive use of the Internet may not be problematic in most cases but the limited case study evidence suggests that for some individuals, excessive Internet use is a real addiction and of genuine concern.” Internet addiction has also been explained by Kandell (1998) as “a psychological dependence on the Internet regardless of the type of activity once logged on.” The dramatic increase in the use of the internet in the recent years has led to pathological use such as

internet addiction (Markey & Wells, 2002; Chou & Hsiao, 2000). In the literature this way of using the internet has been called Internet addiction disorder (Goldberg, 1996), Internet dependency (Scherer, 1997), maladaptive (Beard & Wolf, 2001), dysfunctional (Weiser, 2001; Morahan & Schumacher, 2003), pathological (Weinstein & Lejoyeux, 2010), or problematic (Shapira et al., 2003). It has been demonstrated that a number of users lose control over the amount spent online and the way they use the internet. They can utilize the internet either positive way or negative way. The World Wide Web and other advantageous communication options of the internet provide remote access to the voluminous information in all areas of interest. Internet thus becomes a milieu that could be abused by anyone with or without their interest in science and technology (Griffiths, 2000). There are a lot of concerns regarding excessive use of internet. Frequent Internet use changes how humans use their brains. For instance, checking social media sites, such as Twitter or Facebook, triggers oxytocin release in the brain. While oxytocin is primarily associated with childbirth, it is also released during orgasm or while bonding emotionally with another person. Internet addiction may account for several social problems such as jeopardizing relationships and losing employment over excessive Internet use. Some users can come to disengage from "real life" friendships, instead meeting this social need with online communities. Internet addiction may cause neurological disorders. Prolonged computer use, even if there isn't the component of addiction involved, has physical side effects which include disrupted sleep schedules, headaches and disordered eating.

Two important psychological effects of excessive use of internet are anxiety and depression. Anxiety can have many possible effects on the sufferer, many of which are fairly obvious short-term ones such as your heart beating faster and having problems concentrating. However, prolonged periods of anxiety can also lead to some long-term effects on the body such as an increased chance of a stroke or heart attack. Some short term effects can be: Difficulty Swallowing, Dizziness, Dry Mouth, Rapid heartbeat, Rapid Breathing, Fatigue, Headaches, Inability to concentrate, Irritability, Muscle Aches, Muscle Tension, Nausea, Shortness of breath, Sweating, Trembling and Twitching. Longer-term effects can be: Increased risk of stroke, early memory decline, Insomnia, Detrimental impact of emotional distraction. On the other hand, depression can reduce a person's enjoyment of life, withdraw them from their family and friends and make them feel very alone. Depression means that we can lose focus of our priorities and goals in life and drains the motivation to achieve and to do the things that we love. This in turn devalues our self-worth and self-esteem leaving us with a feeling of hopelessness and despair. In

the long term, prolonged depression can have even more serious impacts on one's health, leading to the development of more serious conditions and illnesses. A continued imbalance in chemicals in our bodies, weakens a persons' immune system and mental health, making them more susceptible to many other serious conditions. Although there has been a lack of consensus on diagnostic criteria of problematic internet use, various epidemiological studies have been conducted to explore the prevalence of problematic internet use in the general population. One of the earliest and the largest study till date was conducted by Greenfield (1999) using his proposed criteria for compulsive internet usage. The study was carried out on 18,000 participants and the prevalence rate of compulsive internet users was reported to be 5.7 per cent (DeAngelis, 2000).

Yadav et al. (2013) conducted a study to see internet addiction among Indian school students. The results showed that 11.8% of students had Internet Addicts and a positive correlation was also reported between Internet Addiction and depression, anxiety and stress. Another study was carried out in Bangalore to assess the risk taking behaviors of the adolescents in the internet use on a sample of 75 students from three English medium schools through simple random sampling technique and by using semi-structured interview schedule. The result showed that 34.7% had ranked playing online games as their first-choice, 29.3% use it for academic purpose, and 29.3% use it for e-mailing. The study also showed that 5.3% reported that they were requested to engage in sexual activities by an adult, 16% got to know a teenager online and made contact with him/her in person, 90.7% of them had come across nudity and sexual images and 45.3% had placed their personal details in websites such as Facebook, MySpace and Orkut. The researchers also highlighted that 66.7% had access to computer at home but no guidance regarding its proper use that increases the risk taking behaviour among adolescents (Govindappa et al., 2014).

One study was conducted in Mumbai on a sample of 987 students of which 681 were females and 306 were male, with the aim of elucidating the prevalence of internet addiction and to see if any psychopathology was present along with the problematic manner of internet use. A semi-structured proforma, Young's Internet Addiction Test and Dukes health Profile were used to assess the students. The statistical analysis of the data indicated that 24.8% were fitting in the category of possible addicts, 74.5% were moderately addicted and 0.7% were found to be severely addicted to internet use. The findings also indicated that those with problematic or excessive internet use had scored on depression and anxiety (Goel et al., 2013).

The objective of this study is to check whether there is significant difference in the depression anxiety and stress levels of high internet users and low internet users respectively.

Methodology:

Aim of the Study:

Present study aims to identify the High internet use among Female B.A. student and to assess the Depression, anxiety and stress level among High and Low internet user.

Objectives of the Study:

- To identify the High Internet Use among female B.A. student.
- To measure the level of depression, anxiety and stress among high and low internet user B.A female student.
- To compare the depression, anxiety and stress among high and low internet user B.A. female student.

Design of the Study: It was a School based prospective study, female student who were Studying in B.A. I, II, III years.

Sample: Purposive sampling technique used for the study.

Sample Size: The total 80 female college students fromArjunpur, Utter Pradesh were taken in the study in which 40 were high internet user and 40 were low internet user. The age range of the sample were 18 to 24 years.

Venue of the study: This study was conducted at Baba Siddh Kanya Mahavidyalaya. Arjunpur, Utter Pradesh.

Inclusion Criteria:

1. Respondent should be a student.
2. Age between 18 to 24 years.
3. Student who give the written consent.

Exclusion Criteria:

1. Age above 24 years.
2. Student who not give written consent.

Tools:

- Socio demographic Data sheet
- Internet addiction Test
- Depression anxiety and stress Scale

Description of Tools:

1. **Socio-Demographic Data Sheet: This data sheet was developed to obtain information about Name, age, category, religion, and parents' occupation.**
2. **Internet Addiction Test (IAT) (*Kimberly S. Young, Ph. D.)***

   The IAT is designed for the experienced Internet user who utilizes this technology on a frequent basis. The 20-item questionnaire measures characteristics and behaviors associated with compulsive use of the Internet that include compulsivity, escapism, and dependency. Questions also assess problems related to addictive use in personal, occupational, and social functioning. Questions are randomized and each statement is weighted along a Likert-scale continuum that ranges from 0 = less extreme behavior to 5 = most extreme behavior for each item. This scale was used to categorize internet users into high and low groups. Those who had IAT score of ≥ 50 (greater than equal to 50) were categorized as High Internet Users and those who had the IAT score of <50 (less than 50) were categorized as Low Internet Users.
3. **Depression, Anxiety and Stress Scale - 21 Items (*Lovibond and Lovibond (1995)***

   The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic nonspecific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

Procedure:

The first step of the study was selection a Collage, Baba Siddh Kanya Mahavidyalaya from Arjunpur, Utter Pradesh and the consent was sought from the principals of the Collage to carry out the study on the students of their collage. After obtaining the consent from collage authority total 240 consent forms were distributed in collage. Total number of signed consent received were 194 Screening was done by applying Internet Addiction Test by Dr. K. Young (1998) on 194 female students. After the screening process, 58 students out of 194 were found to be falling above the cut-off score while the other 136 below the cut-off were taken as Low Internet Users. Those who had IAT score of 60 or more than 60 (≥60; greater than equal to 60) were categorized as 'High Internet Users.' Those who had IAT score of less than 50 (<50; less than 50) were categorized as 'Low Internet Users.' Thus the sample had 40 'High Internet Users' and 40 'Low Internet Users.' In the second phase DASS-21 scales were administered on the 40 high internet user female student and 40 low internet user female student.

Statistical Analysis:

Statistical analysis was done using SPSS 20. To study the comparison of variables between two groups i.e. High and low Internet Users Group, Independent sample t-test was used.

Result:

Table-1: Prevalence of High and Low Internet User

Sample (N=194)		
Variable	**High Internet User (N=58) (n %)**	**Low Internet User (N=136) (n %)**
Internet Addiction Test (IAT)	29.90 %	70.10 %

Table 1 shows overall prevalence of Internet Addiction. An overall prevalence of High internet user was 29.29 % among female college student.

Table- 2: Comparison of Socio Demographic Variable between High and Low Internet User.

Variable		Sample (N=80)			
		High Internet User (N=40)	(N %)	Low Internet User (N=40)	(N %)
Age					
Family Type	**Nuclear**	26	65	21	52.5
	Joint	11	27.5	15	37.5
	Extended	3	7.5	4	10
Family Income (monthly)	**Less Than 10000**	6	15	11	27.5
	10000 to 15000	5	12.5	18	45
	15000 to 20000	22	55	7	17.5
	Above 20000	7	17.5	4	10
Religion	**Hindu**	29	72.5	32	80
	Muslim	8	20	3	7.5
	Christen	3	7.5	5	12.5
Domicile	**Urban**	26	65	23	57.5
	Semi Urban	11	27.5	10	25
	Rural	3	7.5	7	17.5

Table 2 Show comparison of socio-demographic variables between High internet user student group and low internet user group. The result shows that majority of the respondent belong to nuclear family in both group (High user=65.00%, Low user=52.5%). The difference was found in family income, high internet user family income was more (15000 to 20000 for 55 %) than low internet user (10000 to 15000 for 45%). In both the group majority of the population were Hindu (High user=72.5%, Low user= 80.00%). Most of the respondent belong to Urban area for both group (High user=65.00%, Low user=57.5%)

Table- 3: Comparison of Depression, Anxiety and Stress between High and Low Internet User.

Variable		High Internet User (N=40) Mean±SD	Low Internet User (N=40) Mean±SD	T	Df	P
Depression, Anxiety and Stress Scale (DASS)	**Depression**	11.00 ± 2.52	9.40 ± 2.87	2.64	78	.010**
	Anxiety	8.77 ± 1.79	6.97± 1.25	5.21	78	.000**
	Stress	18.97 ± 4.83	11.30 ± 3.29	8.29	78	.000

**Significant level <0.01

Table 3 shows comparison of depression, anxiety and stress among High and Low internet user. It shows that there was a presence of significantly high scores on Depression (11.00 ± 2.52), Anxiety (8.77 ± 1.79) and Stress (18.97 ± 4.83) in High internet user group compared to Low internet user group.

Discussion:

The aim of this study was to measure and compare the depression, anxiety and stress levels of the high and low internet users. As we know there has been an explosive growth in the use of internet not only in India but also worldwide in the last decade. The number of internet users in India increased from about 5 million in the year 2000 to about 52 million in the year 2008 and to more than 566 million in the year 2018. The internet is used to facilitate research, seek information, for interpersonal communication, and for business transactions. On the other hand it is used by many to indulge in pornography, excessive gaming, chatting for long hours and even gambling. There have been growing concerns worldwide for this problematic use of internet. In this study, Internet Addiction Test (IAT) by Dr. Kimberly Young has been used to assess the compulsive use of internet. The primary motive of our study was to identify the high internet users in a Sample representing the B.A. female student population. Firstly the Internet Addiction Test (IAT) was administered on the sample. Those who had IAT score of 60 or more than 60

(≥60; greater than equal to 60) were categorized as 'High Internet Users.' Those who had IAT score of less than 50 (<50; less than 50) were categorized as 'Low Internet Users.' After the screening process, 58 students out of 194 were found to be falling above the cut-off score. So, the prevalence of high internet user among female B.A. student in our current study was found to be 29.90% (Table No. 1). Which is consistent with previous literature of both East and West that have assessed the prevalence of high internet user based on Internet Addiction Test by Young. According to a recent study on students in Mangalore the prevalence of high internet user was reported to be 18.8% (Chathoth et al, 2013). The prevalence studies conducted in Asian countries have reported the prevalence rates to be ranging between 2% and 18% (Ko et al., 2007; Park et al., 2008; Song et al., 2010).

According to an overview on problematic internet use done by Aboujaode (2010), worldwide prevalence estimates from various other large and offline studies such as those done in Norway (Johansson &Gotestam, 2004; Bakken et al, 2009), has been reported to be ranging between 2 per cent to 11 per cent. However, the current study shows the prevalence rate to be higher which could be due to the heterogeneity of the subject population, a difference in the evaluation methodology of studies and the influence of confounding factors such as stress and anxiety. One potential explanation for this could be because of the emergence in mobile Internet technology i.e. smartphones, laptops and tablets (Kuss, et al, 2013) which results in easy affordability and accessibility to Internet. Another important factor for high prevalence rate of PIU could be due to school work such as homework, school assignments and project works that require adolescent to go online, and the teachers not only assume and facilitate but encourage their students' use of Internet. This encouraged use is encountered on campuses as well as access made possible anytime day or night via computer labs, wired dorms, and mobile Internet devices. After the screening process 58 student out of 194 found to be high internet user and rest of the (136 student) found to be low internet user. Only 40'High Internet Users' and 40 'Low Internet Users B.A. female student selected for the further assessment.

The present study shows that majority of the respondent belong to nuclear family in both group (High user=65.00%, Low user=52.5%) and most of the respondent belong to Urban area for both group (High user=65.00%, Low user=57.5%). The reason could be that the sample was taken from collage which are located in urban area. The difference was found in family income, high internet user family income was more (15000 to 20000 for 55 %) than low internet user (10000

to 15000 for 45%). The reason could be that the number of the high internet user belong to urban areas. In both the group majority of the population were Hindu (High user=72.5%, Low user= 80.00%) which could be because of the fact that Hinduism is a major religion in India and also in the eastern part of the country. Various studies have indicated that ethnic and socioeconomic factors appear to have little impact on Internet access in industrialized nations (Rideout, Foehr, Roberts & Brody, 1999).This can be explained on the basis of small sample size, heterogeneity of the groups and majority of the population hailing from urban background.

The current study shows significant difference between two groups in terms of depression, anxiety and stress. The High Internet Users were higher in depression (11.00 ± 2.52), anxiety (8.77 ± 1.79) and stress (18.97 ± 4.83) as compared to Non- Problematic Internet Users group (Table No. 3). One of the studies by Young (1998; 1999) aimed to identify association between depression and internet addiction indicated that increased levels of depression are associated with those who become addicted to the Internet. In particular, low self-esteem, poor motivation, fear of rejection, and the need for approval have been commonly associated with depression and contributed to increased Internet use. The Problematic Internet Users report of experiencing loneliness to a greater degree than Non-Problematic Internet Users (Morahan & Schumacher, 2000). Boredom has been found to be an important factor associated with excessive indulgence in Internet. According to a study by Lin et al. (2009), leisure boredom and involvement in Internet and social activities increase the probability of Internet addiction; however, family and outdoor activities along with participative and supportive parental monitoring decrease these tendencies. Since, youth has been frequently conceptualized as a period of continual struggle, with its defining feature of intense psychic pain and severe turmoil as a result of which youth experience severe psychological distress. Such adolescents are at higher risk for emotional problems and psychiatric disorders. In order to escape painful feelings or difficult situations, they tend to indulge in activities in which they can loosen themselves completely or absorb themselves mentally to reduce their tension and sadness. According to Chou and colleagues (2000, 2005), one of the primary motivation for heavy Internet users is wish fulfilment. The role of meta-cognitions as the mediator of the relationship between high internet user and negative emotional states such as depression, boredom and anxiety were also highlighted, A significant positive relationship was reported between the five dimensions of the Meta-Cognitions Questionnaire (positive beliefs, uncontrollability & danger, cognitive awareness, cognitive confidence & need of control) negative emotional states (Spada et al., 2008). Some more studies,

such as those done by Junghyun (2009), De Leo (2012) and Abdolmajid et al. (2014) have been carried out in order to assess the association between PIU and negative emotional states. The result of these studies suggests that increased level of anxiety, depression and stress are associated with High internet user.

Conclusion:

A high prevalence rate in the present study indicates towards the increasing use of Internet in problematic manner among female B.A. student. In spite of the small sample size, statistically significant differences were observed in terms of comparison of the two groups on the domains of Depression, Anxiety and Stress. These are important findings that justify he need for the study on High Internet User.

Implications of the Study:

As the current study has shown the prevalence of High Internet User among female B.A. student and its association with Depression, anxiety and Stress. Students as a group appear more vulnerable in developing a dependence on the Internet than any other segment of society. Therefore, the current study offers some implications for school/collage psychologists/counselor and collage administrators. They can promote such awareness by being in a position to both assess the needs of students and implement preventive programs and educate for safe use of internet to decrease the potential dangers of excessive Internet use.

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