The Association Between Internet Addiction and Social Anxiety Among Adolescents: A cross sectional study from Dharan

Sanjeev Kumar Mishra[1*], Sandip Pandey[2], Binita Kunwar[2]

1. Assistant Professor, Department of Psychiatry, BPKIHS, Dharan
2. MBBS Student, BPKIHS.

Abstract

INTRODUCTION

Internet addiction is an increasingly prevalent phenomenon affecting both social and psychological aspects of an individual. Internet addiction is thought to be the result of cognitive distortions such as those seen in social anxiety. In light of this theory, this study is an attempt to see if there is an association between internet addiction and social anxiety.

METHODOLOGY

A cross sectional study was conducted among students from class 10-12 of a school in Dharan using convenient sampling method. The students were evaluated using the Young Internet Addiction Test (IAT) and the SPIN Inventory. Descriptive data was analysed using number and percentage. Association between IAT and SPIN was assessed using chi square test. Correlation between the IAT and SPIN scores was assessed using Pearson correlation.

RESULT

Of the 245 students, 52.7% were female and 38.4% were from class 10. 44.9% students had mild internet addiction, 29.4% had moderate and 0.4% had severe level of internet addiction. 57.4% students had both internet addiction and social anxiety (p < 0.01). There was a small positive correlation between IAT and SPIN scores (r value 0.3, p value < 0.01).

CONCLUSION

Internet addiction and social anxiety are significantly associated with each other. Further studies need to be carried out to establish the cause-effect relationship.

KEYWORDS

Internet, addiction, anxiety

*Corresponding Author

Dr. Sanjeev Kumar Mishra

Assistant Professor

Department of Psychiatry

B.P. Koirala Institute of Health Sciences, Dharan, Sunsari

Email: sanjeev10317@gmail.com

INTRODUCTION

From the initial days of formation of World Wide Web in 1980s it took around 15 years to have its revolutionary impact on culture, commerce, technology including the rise of social networking[1] and after nearly 3 decades of its breakthrough its peak has hit 56.1% population of the world and 50% of the Asian Population.[2] Nepal is no exception to the growth of internet seen around the world. A 2017 survey found that 54% of Nepal's population were active internet users. This number had further increased to 63% in 2018.[3]

The increasing use of internet has attracted the attention of researchers to this field. Young and Griffith were the first to identify the behavior problems associated with the increased use of internet. A variety of terms have been used to describe this behavior, including ''internet addiction'',[4] ''pathological internet use'',[5] ''problematic internet use''[6] and "compulsive internet use".[7] In this sense, internet addiction can be defined as a syndrome of intense preoccupation with using the internet.[8] excessive amounts of time spent online, compulsive use of the internet, difficulty in managing the time spent on the internet, feeling that the world outside of the internet is boring, becoming irritated if disturbed while online, decreased social interaction with ''real'' people,[9] and increased loneliness and depression.[10]

Internet addiction is an increasingly prevalent phenomenon

affecting both social and psychological aspects of an individual with researches showing that Internet addiction is strongly correlated with stress, depression,[11] impulsivity,[12] social phobia,[13] attention deficit.[14] Whether these are the consequences of internet addiction or the cause is still a matter of debate.[15] One area of considerable interest is the presence of internet addiction in individuals with social anxiety, which is characterized by significant discomfort and avoidance of social and/or performance situations.[16] The cognitive behavior model of internet addiction states that internet addiction is a result of maladaptive cognitive distortions in individuals with preexisting psychopathology. The theory states that individuals with preexisting psychopathology such as social anxiety or depression may use excess internet as a result of reinforcement that they receive through it.[17] In accordance with this theory, researchers have now started looking into the association between internet addiction and social anxiety. However studies done in Nepal have mostly focused on the prevalence and associated comorbidities such as depression and sleep problems.[18-23] To the authors' knowledge no study has attempted to study the relation between internet addiction and social anxiety. This study is an attempt to assess whether an association exists between internet addiction and social anxiety in Nepalese context, which can have future clinical and research implications.

MATERIAL AND METHOD

This is a descriptive and cross sectional study conducted after obtaining ethical clearance from the Departmental Research Unit (DRU) after the study protocol was presented in the department in presence of all faculty members and incorporating appropriate feedbacks. Students studying in class 10, 11 and 12 of a private school were enrolled after obtaining consent from the principal of the school. All the students present on the day of data collection were given IAT and SPIN Inventory to complete. The presence of internet addiction was assessed using the Internet Addiction Test (IAT) which consists of 20 items scored on a scale from 0-5. A score between 20-49 indicates presence of mild level of internet addiction, 50-79 reflects the presence of moderate level while a score above 80 indicates severe level of internet dependency. Social anxiety was assessed using the SPIN Inventory which is a 17 item scale scored on a scale from 0-4. A score of 21-30 indicates mild anxiety, 31-40 indicates moderate anxiety, 41-50 indicates severe anxiety and a score above 50 indicates very severe anxiety. The collected data was entered in Microsoft Excel Program 2007 and analyzed by using Statistical Package for Social Sciences (SPSS) 11.5 for statistical analysis.

RESULTS

A total of 245 students participated in the study. The mean age of participants was 15.76 ± 0.97 years. As shown in table 1 majority of participants were female (52.7%) and from class 10 (38.4%).

Table 1: Sociodemographic characteristics of the participants (N = 245)

Variable	Category	Number (Percentage)
Gender	Male	116 (47.3%)
	Female	129 (52.7%)
Class	10	94 (38.4%)
	11	65 (26.5%)
	12	86 (35.1%)

The IAT scores showed that 183 (74.7%) of the participations had internet addiction. As shown in table 2 majority of the participants (44.9%) had mild addiction while only 0.4% had severe addiction. Scores from SPIN Inventory showed that 125 (51.0%) participants had social anxiety. Table 3 shows the distribution of students with social anxiety.

Table 2: Distribution of participants according to IAT scores (N=245)

Internet addiction	Number (Percentage)
Absent	62 (25.3%)
Mild	110 (44.9%)
Moderate	72 (29.4%)
Severe	1 (0.4%)

Table 3: Distribution of participants according to SPIN Inventory scores (N=245)

Social anxiety	Number (Percentage)
Absent	120 (49.0%)
Mild	72 (29.4%)
Moderate	33 (13.5%)
Severe	16 (6.5%)
Very severe	4 (1.6%)

Table 4: Association between social anxiety and internet addiction (N=245)

Categories		Social Anxiety		r value	p value	Remarks
		Absent Number (Percentage	Present Number (Percentage)			
Internet addiction	Absent Number (Percentage)	42 (67.7%)	20 (32.3%)	0.3	<0.01	Highly significant
	Present Number (Percentage)	78 (42.6%)	105 (57.4%)			

As shown in table 4, 57.4% of the participants had both internet addiction and social anxiety and the association was found to be highly significant.

The mean IAT score was found to be 41.48 ± 15.7 and the mean SPIN Inventory score was 22.55 ± 10.9. There was a small positive correlation between the two scores and it was statistically significant. (r value 0.3, p value - <0.01)

DISCUSSION

Our study showed that internet addiction is a highly prevalent phenomenon which is in accordance with other studies.[23-25] However the prevalence was higher than the study conducted by Gedam et al and Arthanari et al.[26,27] This could

be because the authors in the latter had used 50 as the cutoff point while the rest used a score of 20. The prevalence of severe addiction (0.4%) was in accordance with studies conducted in India and China.[24,28,29] However it was lower when compared to other studies done in Africa, Europe and Korea.[30-33] These variations could be due to factors such as accessibility to internet, the questionnaire used and the cut off values used. An additional problem is the use of vague terms to define level of internet use such as "problematic", "borderline", "at risk".

The prevalence of social anxiety in our study was 51%. We have included all students who have scored more than 20 in our final data analysis. The past studies conducted on prevalence of social anxiety have used a cutoff score to separate the students into those with social anxiety disorder and those with subclinical anxiety. One study in Iran used the cutoff of 33 and found the prevalence to be 10.1%.[34] Our findings were comparable to those of Karthikeyan et al who found that 61.1% had social anxiety of which 9.6% and 0.2% had severe and very severe anxiety respectively.[24]

We further found that there was a significant association between internet addiction and social anxiety. This reflects the cognitive behavior model of internet addiction which states that internet addiction is a result of maladaptive cognition coupled with behaviors which help mitigate them, thus providing reinforcement for the person.[17] People with social anxiety often have apprehension related to communication in public. Thus they prefer situations where the perceived risks associated with face to face communication is lowered. The internet provides them with such platform enabling them to control the less positive aspects of communication. By helping reduce the anxiety associated with face to face communication, internet acts as a rein forcing agent. This model of internet addiction has been given terms such as the social compensation hypothesis or the self medication hypothesis.[13,35]

Using the same model, researchers have argued about the potential therapeutic benefits of internet for people with social anxiety with researches showing that computer mediated communication (CMC) can be helpful in alleviating social anxiety.[36] On the contrary, one study concluded that CMC can decrease overall well being.[37] Contrary to the cognitive behavior model, some researchers argue that pathological internet use is the causative factor in social anxiety. Pathological internet use makes an individual take a step back from family and friends, thus reducing daily communication and increasing the fear of negative social evaluation.[38] All these findings show that the relationship between internet use and social anxiety is not so simple as once thought.

Problematic internet use is usually not assessed for in clinical practice. Our study shows that there is an association between internet addiction and social anxiety. This implies assessing the cases of social anxiety for underlying pathological internet use and taking appropriate measures to mitigate it. However, the cause effect relation between the two has not been clearly established in literature. Further studies need to be carried out to establish this relationship which may have clinical as well as therapeutic implications.

A limitation of this study is that it has been carried out in a selected sample of students and cannot be generalized to large population.

CONCLUSION

Our findings show that internet addiction and social anxiety are significantly associated with each other. However further studies need to be carried out to establish a cause-effect relationship.

FUNDING

ACKNOWLEDGEMENT

REFERENCE

1. Allen JW, Allen JW. History of The Internet. Internet Surg 2012;5-9

2. World Internet Users Statistics and 2019 World Population Stats [Internet]. [cited 2019 Apr 24]. Available from: https://www.internetworldstats.com/stats.htm

3. Internet users in Nepal increases rapidly, penetration reaches 63 percent – Nepali Telecom [Internet]. [Cited 2019 April 24]. Available from: https://www.nepalitelecom.com/2018/01/internet-in-nepal-users-rapid-increase.html

4. Bai Y-M, Lin C-C, Chen J-Y. Internet Addiction Disorder Among Clients of a Virtual Clinic. *Psychiatr Serv*. 2001 Oct;52(10):1397

5. Morahan MJ: Incidence and correlates of pathologic internet use among college students. *Comput HumBehav* 2000; 16:13–29

6. Davis R, Flett GL & Besser A: Validation of a new scale for measuring problematic internet use: implications for pre-employment screening. *Cyberpsychol Behav* 2002; 5:331–345

7. Black DW, Belsare G, Schlosser S. Clinical Features, Psychiatric Comorbidity & Health-Related Quality of Life in Persons Reporting Compulsive Computer UseBehavior: *J Clin Psychiatry* 1999; 60:839–844

8. Chou C. Internet Heavy Use and Addiction among Taiwanese College Students: An Online Interview Study. *CyberPsychology Behav* 2001 Oct;4(5):573–85

9. Kraut R, Patterson M, Lundmark V, Kiesler S, Mukopadhyay T, Scherlis W. Internet paradox. A social technology that reduces social involvement and psychological well-being? *Am Psychol* 1998 Sep;53(9):1017–31

10. Whang LS-M, Lee S, Chang G. Internet Over-Users' Psychological Profiles: A Behavior Sampling Analysis on Internet Addiction. CyberPsychology Behav 2003 Apr;6(2):143–50

11. Ahmet Akin and Murat Iskender. Internet Addiction and Depression, Anxiety and Stress. *International Online Journal of Educational Sciences*, 2011;3(1):138-148

12. Dalbudak E, Evren C, Topcu M, Aldemir S, Coskun KS, Bozkurt M, et al. Relationship of Internet addiction with impulsivity and severity of psychopathology among Turkish university students. *Psychiatry Res* 2013 Dec 30;210(3):1086–91

13. Weinstein A, Dorani D, Elhadif R, Bukovza Y, Yarmulnik A, Dannon P. Internet addiction is associated with social anxiety in young adults. *Ann Clin Psychiatry* 2015 Feb;27(1):4–9

14. Wang B-Q, Yao N-Q, Zhou X, Liu J, Lv Z-T. The association between attention deficit/hyperactivity disorder and internet addiction: a systematic review and meta-analysis. *BMC Psychiatry* 2017;17(1):260

15. Cash H. et al. Internet Addiction: A Brief summary of Research and Practice. Current *Psychiatry Reviews* 2012;8:292-298

16. Ryan JL, Warner CM. Treating adolescents with social anxiety disorders in school. *Child and Adolescents Psychiatric Clinics of North America* 2012 Jan;21(1):105-ix

17. Davis RA. A cognitive behavioral model of pathological internet use. *Computers in human behavior* 2001;17:187-195

18. Shakya, Rabi & Sharma, Pawan. (2017). Problematic Internet Use– An introduction and current status in Nepal. Journal of Psychiatrists' Association of Nepal. 4. 4. 10.3126/jpan.v4i2.18316.

19. Singh S, Shrestha S. Internet addiction among students of selected schools of Pokhara, Nepal. JCMC [Internet]. 2021 Mar. 26 [cited 2023 Jan. 23];11(1):104-7. Available from: https://www.nepjol. info/index .php/JCMC/article/view/36047

20. Karki K, Singh DR, Maharjan D, K C S, Shrestha S, Thapa DK. Internet addiction and sleep quality among adolescents in a peri-urban setting in Nepal: A cross-sectional school-based survey. PLoS One. 2021 Feb 18;16(2):e0246940. doi: 10.1371/journal.pone.0246940. PMID: 33600410; PMCID: PMC7891762.

21. Bhandari, P.M., Neupane, D., Rijal, S. *et al.* Sleep quality, internet addiction and depressive symptoms among undergraduate students in Nepal. *BMC Psychiatry* 17, 106 (2017). https://doi.org/ 10.1186/ s12888-017-1275-5

22. Paudel L, Sharma P, Kadel AR, Lakhey K, Singh S, Khanal P, Sharma R, Chalise P, Sharma SC, Pradhan SN. Association Between Internet Addiction, Depression and Sleep Quality Among Undergraduate Students of Medical and Allied Sciences. J Nepal Health Res Counc. 2021 Dec 14;19(3):543-549. doi: 10.33314/jnhrc.v19i3.3599. PMID: 35140429.

23. Marhatta et al. Internet Addiction and Associated Factors Among Health Sciences Students in Nepal. *Journal of Community Medicine and Health Education* 2015;5:6-10

24. Karthikeyan E et al. The association between internet addiction, social phobia and depression in medical college students *Int J Community Med Public Health*. 2018 Oct;5(10):4351-4356

25. Abdel Salem et al. Prevalence of Internet addiction and its associated factors among female students at Jouf University, Saudi Arabia. *Journal of the Egyptian Public Health Association* (2019) 94:12

26. Gedam S. (2017). Study of Internet Addiction: Prevalence, Pattern, and Psychopathology among Health Professional Undergraduates. *Indian Journal of Social Psychiatry* 2017;33(4):305-311

27. Arthanari S, Khalique N, Ansari M, Faizi N. Prevalence & determinants of Internet Addiction among Indian adolescents. *Indian Journal of Community Health* 2017;29:89-95.

28. Goel D, Subramanyam A, Kamath R. A study on the prevalence of internet addiction and its association with psychopathology in Indian adolescents. *Indian J Psychiatry*. 2013;55(2):140-143.

29. Lam LT, Peng ZW, Mai JC, Jing J. Factors associated with Internet addiction among adolescents. *Cyberpsychol Behav*. 2009;12(5):551-555.

30. Adiele I and Olatokun W. Prevalence and determinants of internet addiction among adolescents. *Computers in Human Behavior* 2014:100-110

31. Tsitsika A, Critselis E, Kormas G, et al. Internet use and misuse: a multivariate regression analysis of the predictive factors of internet use among Greek adolescents. *Eur J Pediatr*. 2009;168(6):655-665.

32. Pallanti S, Bernardi S, Quercioli L. The Shorter PROMIS Questionnaire and the Internet Addiction Scale in the assessment of multiple addictions in a high-school population: prevalence and related disability. *CNS Spectr*. 2006;11(12):966-974.

33. Park SK, Kim JY, Cho CB. Prevalence of Internet addiction and correlations with family factors among South Korean adolescents. *Adolescence*. 2008;43(172):895-909.

34. Talepasand S, Nokani M. Social phobia symptoms: prevalence and sociodemographic correlates. *Arch Iran Med*. 2010;13(6):522-527.

35. Yücens B, Üzer A. The relationship between internet addiction, social anxiety, impulsivity, self-esteem, and depression in a sample of Turkish undergraduate medical students. *Psychiatry Res*. 2018;267: 313-318.

36. Yen JY, Yen CF, Chen CS, Wang PW, Chang YH, Ko CH. Social anxiety in online and real-life interaction and their associated factors. *Cyberpsychol Behav Soc Netw*. 2012;15(1):7-12.

37. Schiffrin H. Edelman A. Falkenstern M, et al. The associations among computer-mediated communication, relationships, and well-being. *Cyberpsychol Behav Soc Netw* 2010;13:299–306

38. Cardak M. Psychological well-being and internet addiction among university students. *Turkish Online Journal of Educational Technology*. 2013;12:134-141.