INTERNET ADDICTION AND ITS ASSOCIATION WITH PSYCHOPATHOLOGY: A STUDY IN SCHOOL CHILDREN FROM MUMBAI, INDIA

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ABSTRACT

Background: Internet addiction is a common emerging problem amongst adolescents and students worldwide. The present research aimed at determining the prevalence of internet addiction and its correlation to psychopathology in school going adolescents in Mumbai.

Methods: 603 adolescents studying in 8th-10th standard were administered a semi structured preformed, Young's Internet Addiction Test and Depression Anxiety Stress scale. 555 questionnaires were included in the final analysis using descriptive statistics and correlation by Spearman's method.

Results: The prevalence of internet addiction was noted to be 3.96% in boys and 1.62% of girls. Over 15% of the total sample showed overuse of internet but below internet addiction criteria. Stress scores were significantly correlated with the internet use patterns in both sexes. Majority students used the internet at home while over 50% of the sample had their own mobile phone or laptop or both. The main use of the internet in either sex was for social networking.

Conclusions: The present study demonstrates that internet addiction is present in school going adolescents in Mumbai. Further studies across larger populations are needed to consolidate these findings.

Key words: Internet addiction, adolescents, school, depression, anxiety, stress.

INTRODUCTION

The internet is a medium to obtain faster information, research and communication, but for some users, it may become a companion for survival. Adolescents usually have poorer self-control, worse self-regulation, and poorer cognition as compared to adults and are considered the most vulnerable group to the temptations of the internet.[1] The term 'internet addiction' was first proposed by Ivan Goldberg for pathological internet use in 1993.[2] Caplan later replaced the term to "problematic internet use"(PIU) mentioning that social isolation plays a greater role in behavioral symptoms of PIU than does the presence of psychopathology.[3] Beard[4] recommends that the following five diagnostic criteria are required for a diagnosis of internet addiction viz. (a) feeling preoccupied with the Internet, (b) need to use the internet with- increased amounts of time in order to achieve satisfaction, (c) unsuccessful efforts to control, cut back, or stop internet use, (d) restless, moody, depressed, or irritable when attempting to cut down or stop internet

use, (e) staying online longer than originally intended. Additionally, at least one of the following must be present (f) jeopardized or risked the loss of a significant relationship, job, educational or career opportunity because of the internet, (g) lying to family members, therapist, or others to conceal the extent of involvement with the internet and (h) using the internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression).

There is considerable variance in the prevalence rates reported across studies for internet addiction with rates between 0.3% and 38% being reported.[5] This may be attributable to varying diagnostic criteria and assessment questionnaires used along with selective samples that are chosen.[6] The prevalence in adolescents across studies has been different across countries with prevalence rates of 1.5% in Greece[7], 1.6% in Finland[8] while high rates of 5.3% being reported in Riyadh, Saudi Arabia.[9] In another study that used a modified version of the Minnesota Impulsive Disorders Inventory, 4% of US high school adolescents were identified as being addicted to the internet.[10] Higher prevalence rates have been reported in adolescents, with studies demonstrating 8% prevalence in China[11] and 10.7% in South Korea.[12] Research on internet addiction had demonstrated that greater use of the internet is associated with social and psychological variables such as depression[13], loneliness[14], low self-esteem and life satisfaction[15], sensation or novelty seeking[16] and mental health problems.[17] Internet addiction has now been officially recognized as a psychiatric disorder in the latest classification issued by the American Psychiatric Association.[18] The aim of the current research was to study the prevalence of internet addiction in school going adolescents, elucidate the pattern of internet use in these adolescents and to note the association of any psychopathology with internet addiction.

METHODOLOGY

This cross sectional study was conducted after obtaining institutional ethics committee approval and permission of school authorities in Mumbai. The school was a private English medium school in Mumbai. Parents of the adolescents were informed and they gave consent for the study. The study participants were 603 school going adolescents studying in the 8-12th standard who were explained the purpose of the study and were administered the questionnaire in the classroom. Only students who had access to the internet and smart phone for at least a year were included in the study. The questionnaires were distributed groups of 60 students each and a session of 25 minutes was taken to explain students about the questionnaire. They were given 30 minutes to fill the case record form. The questionnaires used included a semi-structured questionnaire which was used to collect details like age, gender, socio-economic status, number of siblings and occupation of mother and father. The pattern of internet use was assessed by questions pertaining to internet use such as place of internet use, maximum hours spent on the internet, purpose of using internet like academics, browsing, social networking or entertainment etc.

The scales used in the study were:

1. The **Internet Addiction Test (IAT)**[19]: This was a 20-item likert scale that measured the severity of self-reported compulsive use of the internet. Total internet addiction scale scores were calculated, with possible scores for the sum of 20 items ranging from 20-100. According to Young's criteria, total IAT scores 20-39 represent average users with complete control of their internet use 40-69 represent over-users with frequent problems caused by their internet use, 70-100 represent internet addicts with significant problems caused by their internet use. This was used to determine the presence or absence of internet addiction in the adolescents. The original questionnaire is in English and was used for the study.

2. The **Depression Anxiety Stress Scale (DASS)**[20]: This is 42-item self-report inventory that provides scores on three subscales viz. depression (14-items), anxiety (14-items), and stress (14-items). Each item was rated on a 5-point scale.

Statistical analysis was done using computerized software and using Spearman's correlation where appropriate.

RESULTS

A total of 603 students were administered the questionnaire of which 48 left the questionnaire blank or incomplete and these were not included in the final analysis. A total of 555 questionnaires were included in the final analysis. In the final sample (n = 555), 55.13% were girls (n= 306) and the rest were boys (n= 249). All the students belonged to age group of 13-17 years with a mean

age of 14.84 ±1.34 years. The mean age in girls was 14.94 ± 1.04 years and in boys was 14.82± 1.12 years. In the sample of student we studied, we found that in 38% of boys, both parents were working while both parents were working in 29% of girls. Work status of the parents did not show any statistically significant correlation with internet addiction scores (p= 0.98 & r= -0.084).

Table 1: Gender wise correlation of scores on the DASS and IAT scales

Psycho-pathology	Mean ± SD	Spearman's r value	p value
Girls			
Depression	9.54 ± 4.96	0.7790	0.064
Anxiety	6.81 ± 1.79	-0.268	0.4161
Stress	12.27 ± 4.19	0.7120	0.0162*
Boys			
Depression	8.92 ± 2.77	0.1407	0.4929
Anxiety	7.53 ± 1.51	0.3149	0.1252
Stress	13.27 ± 2.34	-.04478	0.0218*

*significant (p < 0.05)

On assessing the pattern of internet use it was found that that 36.3% (n= 202) of all students were using internet for 3-5 hours a day for social networking. There was a gender difference reason for internet use with boys reporting using it for social networking and entertainment and gaming. It was interesting to note that 43.3% of boys spent used the internet mostly in the evening while 57.7% of girls use reported early morning internet use. 44.5% of boys had their personal mobiles while 30.9% owned laptops. 53.8 % of girls in the study had personal mobiles and 19% owned laptops. In this sample none of them use internet by going into cyber café which is often visited by many students across India. 43.7% of boys and 30.4% of girls reported using for internet for at least 3-5 hours daily. 84.3% of the total student population reported that they used the internet at home.

Using Young's internet addiction criteria[21] it was found that 3.96% of boys and 1.96% girls met the criteria for internet addiction. The difference across genders was statistically significant and a significant correlation between total daily hours of internet and internet addiction severity was demonstrated (p=<0.0001 Spearman r= 0.2689). Over 15% of the total adolescents showed over use of internet but did not fall in the internet addiction range. In our study, girls experienced greater amounts of stress and had high scores on the depression scale of the DASS questionnaire.

No correlation was found between anxiety levels and internet use. A similar trend was noted in boys as well (Table 1).

DISCUSSION

A larger number of the study participants were girls. This could have been due to the sex ration in the classroom that showed a higher female preponderance. Most subjects reported internet use for social networking as well as entertainment. Students often download music and movies from the internet. The findings is in keeping with a previous survey.[22] In India, girls may experience more restriction in extending friendships in real life due to societal and moral norms and thus may resort to social networking where friendships in virtual world may be safer.[23]

In our study we found that there was no correlation between working status of both parent and internet use. Parental job status and unavailability can have an impact on boredom and loneliness with few parental restrictions leading to increased internet use.[22] The study showed that more than 50% adolescents had either their own mobile phones or laptops or both indicative of a growing trend of children being given early access to gadgets at home. We found that the prevalence rate of internet addiction to be 5.58% of the study population. This is lower compared to a study in adolescents in Hongkong that reported a prevalence of 8% in 699 internet users aged 16–24 years.[24] Our study reports a higher prevalence than that of 0.7% reported from college students in a study done in 2013. This may also indicate growing trends for internet addiction and other socio-demographic parameters may also play a role.[25] Greater number of boys were addicted to the internet than girls. This has been attributed to differential patterns of use between boys and girls with boys more likely to use the internet for gaming, cybersex usage and gambling.[26]

In our study, we found higher depression and stress scores in those who were using the internet for longer hours. Greater use of the internet is associated with few social and psychological maladaptive variables such as loneliness and lower self-esteem and life satisfaction which could lead to internet addiction. Whether depression, anxiety and stress leads to internet addiction or internet addiction causes further psychopathology is still a matter of debate and speculation.

The results were largely based on the participant's self-report and could be biased. Participants were students of a single school in Mumbai and the results obtained here cannot be generalized. It is noteworthy to mention that the concept of internet addiction as adopted in this paper does not refer to a clinical diagnosis, but rather to a potentially pathological maladaptive behaviour pattern.

CONCLUSIONS

Internet addiction is an emerging psychiatric disorder in children and adolescents. A number of factors play a role in the development of internet addiction. Girls and boys may differ in their patterns of internet use and addiction. There is a need for further studies to in school based and general child and adolescent populations to evaluate the epidemiological characteristics of this disorder and to plan effective interventions at a community level for the same.

REFERENCES

1. Jang KS, Hwang SY, Choi JY Internet addiction and psychiatric symptoms among Korean adolescents. J School Health 2008;78:165-71.

2. J Kuss D, D Griffiths M, Karila L, Billieux J. Internet addiction: a systematic review of epidemiological research for the last decade. Curr Pharmaceut Des 2014;20(25):4026-52.

3. Caplan SE. Relations among loneliness, social anxiety, and problematic internet use. Cyberpsychol Behav 2007;10:234–42.

4. Beard KW, Wolf EM. Modification in the proposed diagnostic criteria for Internet addiction. Cyberpsychol Behav 2001;4(3):377-83.

5. Kuss DJ, Griffiths MD, Binder JF. Internet addiction in students: Prevalence and risk factors. Comp Hum Behav 2013;29(3):959-66.

6. Young KS. Internet addiction: A new clinical phenomenon and its consequences. Ann Behav Sci 2004;48:402–15.

7. Siomos KE, Dafouli ED, Braimiotis DA, Mouzas OD, Angelopoulos NV. Internet addiction among Greek adolescent students. Cyberpsychol Behav 2008;11(6):653-7.

8. Ko CH, Yen JY, Chen SH, Wang PW, Chen CS, Yen CF. Evaluation of the diagnostic criteria of Internet gaming disorder in the DSM-5 among young adults in Taiwan. J Psychiatr Res 2014;53:103-10.

9. Al-Hantoushi M, Al-Abdullateef S. Internet addiction among secondary school students in Riyadh city, its prevalence, correlates and relation to depression: A questionnaire survey. Int J Med Sci Public Health 2014;3:10-5.

10. Ko CH, Yen JY, Yen CF, Chen CS, Chen CC. The association between Internet addiction and psychiatric disorder: a review of the literature. Eur Psychiatry 2012;27(1):1-8..

11. Yu L, Shek DT. Internet addiction in Hong Kong adolescents: a three-year longitudinal study. J Pediatr Adolesc Gynec 2013;26(3):S10-7.

12. Kim K, Ryu E, Chon MY, Yeun EJ, Choi SY, Seo JS, Nam BW. Internet addiction in Korean adolescents and its relation to depression and suicidal ideation: a questionnaire survey. Int J Nurs Studies 2006;43(2):185-92.

13. Müller KW, Glaesmer H, Brähler E, Woelfling K, Beutel ME. Prevalence of internet addiction in the general population: results from a German population-based survey. Behav Inform Technol 2014;33(7):757-66.

14. Petry NM, O'Brien CP. Internet gaming disorder and the DSM-5. Addiction 2013;108(7):1186-7.

15. Nalwa K, Anand AP. Internet addiction in students: a cause of concern. Cyberpsychol Behav 2003;6(6):653-6.

16. Tonioni F, D'Alessandris L, Lai C, Martinelli D, Corvino S, Vasale M, Fanella F, Aceto P, Bria P. Internet addiction: hours spent online, behaviors and psychological symptoms. Gen Hosp Psychiatry 2012;34(1):80-7.

17. Kim J, La Rose R, Peng W. Loneliness as the cause and the effect of problematic Internet use: The relationship between Internet use and psychological well-being. Cyberpsychol Behav 2009;12(4):451-5.

18. American Psychiatric Association. Diagnostic and Statistical Manual for the Diagnosis and Classification of Psychiatric Disorders – 5th edition. American Psychiatric Press ; 2013.

19. Widyanto L, McMurran M. The psychometric properties of the internet addiction test. Cyberpsychol Behav 2004;7(4):443-50.

20. Lovibond SH, Lovibond PF. Manual for the depression anxiety stress scales. Psychology Foundation of Australia ; 1996.

21. Young KS. Internet addiction: The emergence of a new clinical disorder. Cyberpsychol Behav 1998;1(3):237-44.

22. Swaminath G. Internet addiction disorder: fact or fad? Nosing into nosology. Indian J Psychiatry 2008;50(3):158.

23. Chawada BL, Choksi RP, Choksi S, Dari U, Pawar A, Bansal R. Addiction to social networking websites and its effect on life-course of college going students in Surat city. Natl J Commun Med 2010;1(2):174-5.

24. Leung L. Net-generation attributes and seductive properties of the internet as predictors of online activities and internet addiction. Cyberpsychol Behav 2004;7:333-48.

25. 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):140-3.

26. Chakraborty K, Basu D, Kumar K. Internet addiction: Consensus, controversies, and the way ahead. East Asian Arch Psychiatry 2010;20(3):123–32.