Original Research Article

Pattern of internet addiction among urban and rural school students, Mangaluru, India: a comparative cross-sectional study

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ABSTRACT

Background: Adolescents use the Internet for a variety of activities besides gaming; they frequently engage themselves with social networking, instant messaging, blogging and downloading information. Heavy Internet use has been associated with potential side effects, such as loss of control over the use of the Internet, adverse effects on other daily activities, emotional status and communication among family members. Objective of present study to assess the prevalence of Internet Addiction (IA) and factors associated with Internet use among Urban and Rural school students.

Methods: A school based cross sectional study was conducted in the urban and rural field practice area of a medical college hospital in Mangaluru. Internet addiction was assessed using Young's Internet Addiction Test.

Results: The prevalence of internet addiction among urban school students was found to be i.e. 83.3%, while it was 78% in rural school students. Mild IA was common among both. Male gender, smart phones and hours spent on internet were common risk factor for IA in both groups.

Conclusions: Young's Internet Addiction Test (IAT) is a simple and easy tool to assess Internet addiction among adolescent school students. Need to give importance of outdoor activity and community level education needed to prevent Internet Addiction.

Keywords: Adolescent, Internet addiction, Young's internet addiction test

INTRODUCTION

Internet is one of the most widely accessible media in the world, it has provided better opportunities for communication, information and social interaction. India ranks 4th among the highest number of internet users only after China, U.S and Japan.¹ Adolescents are required to learn about it for academic and recreational reasons however, excessive and undisciplined use by individuals has led to the emergence of the concept of "Internet Addiction (IA)" among adolescents. Internet Addiction, which is included in section 3 of the 5th

edition of the DSM (DSM-5) (Emerging Measures and Models) is also gaining progressive attention by public opinion.

Internet Addiction was defined by preoccupation with the use of the internet, repetitive thoughts about limiting and controlling the use of the internet, failure to control the desire of access to the internet, continuous use of the internet despite the impairments at various levels of functionality, spending gradually increasing periods of time on the internet, seeking use of the internet in the case of inability to access and uncontrolled desire to get

access to the Internet.^{2,3} Addiction to the Internet has resulted in negative impact on academic performance, family relationships and emotions for adolescents. This can also have a negative impact on identity formation and may negatively affect cognitive functioning, engagement in risky activities and inculcate poor dietary habits. Internet Addiction is reported to be associated with depression and attention deficit hyperactivity disorder (ADHD).⁴

During 2013, India had 190 Million internet users, out of these 130 million students belonged to urban area while the remaining 60 million were from rural areas.⁷ According to DSM-V, "Internet addiction" is not yet recognized as a cognitive disorder but is being considered as an area in need for further research. Diagnostic tools of Internet addiction have been developed by Young.⁵ However, there is no empirical evidence such as sensitivity or specificity that provides support for the contents or cut-off points for this too, this study attempts to analyze the prevalence and patterns of "Internet Addiction" among urban and rural school students in Mangaluru.

Objective of present study to assess the prevalence of Internet Addiction (IA) and factors associated with Internet use among Urban and Rural school students.

METHODS

A school based cross sectional study was conducted, using simple random sampling. 2 schools were selected one each from urban and rural field practice area of Medical College, Mangaluru for a period of 3months from January 2016 to March 2016. High school children i.e. 8th, 9th and 10th class students participated in the study. Participants were briefed regarding the objectives of the study. Participant information sheets which contained information about the objectives and implications of the study were distributed and explained to all the participants. Written informed consent was obtained from all the participants before enrolment. If the particular participant was not present at the time of study, he/she was excluded from the study.

Sample size estimation

As per study done by Arvind Sharma et al by considering the prevalence of 57.3% with 10 % allowable error, the sample size will be estimated.⁶

$$n = 4pq/l^2$$

Where p = prevalence, q = 100-p, l = acceptable error (10% of p)

Calculating sample size

$$p = 57.3, \text{ Then } q = 100 - 57.3 = 42.7, l = 10\% \text{ of } 57.3 = 5.73$$

$$n = 4 \times 57.3 \times 42.7 / 5.73^2 = 298.3, \text{ rounded off to } 300$$

Method of data collection

Pre-tested semi-structured questionnaire was used to elicit their information regarding socio demographic profile, patterns of internet use, using Young's Internet Addiction Test Scale. Internet Addiction Test (IAT) 5 comprised of 20 items.

Internet addiction test

The Internet Addiction Test (IAT; Young, 1998) 5 is a 20 item 5-point Likert scale that measures the severity of self-reported compulsive use of the internet. Total internet addiction scores are calculated, with possible scores for the sum of 20 items ranging from 20 to 100. The scale showed very good internal consistency, with an alpha coefficient of 0.93 in the present study. According to Young's criteria, total IAT scores 20-39 represent average users with complete control of their internet use, scores 40-69 represent over users with frequent problems caused by their internet use, and scores 70-100 represent internet addicts with significant problems caused by their internet use.

Statistical analysis

Data were entered into Microsoft excel sheet and analysed using SPSS Inc. 21.0 software. Frequency and percentages (descriptive statistics) were calculated. Pearson's Chi-square was used as a test of significance. P-value < 0.05 was considered statistically significant.

RESULTS

A total of 300 students were studied who belonged to the age group of 12-17years. The urban school students comprised of 92 girls and 58 boys, rural school students comprised of 81 girls and 69 boys.

Figure 1: Gender-wise distribution of students.

In present study the more number of female students were present in both urban and rural areas of the study.

Among the urban schools male constituted 39.3% and female constituted nearly 60.7%. In Rural Areas Male constituted 46% and Female constituted 54%.

Figure 2: Age-wise distribution of students (rural and urban).

The majority of the children were in the age group of 13-15 years in our study in both the areas. The mean age of

children in rural areas was 14.5 years and urban was 14.7 years.

Table 1: Prevalence of internet addiction (gender-wise).

	Rural	Urban
Male	21.3%	23.3%
Female	10.6%	20.6%
Internet addiction	78%	83.3%

The prevalence of “Internet Addiction” among urban school students was found to be i.e. 83.3%, while among rural school students it was 78%. Among girls of both group internet addiction was more in urban girls (20.60%) compared to rural girls (10.60%).

Table 2: Prevalence of severity of internet addiction in both groups.

	Normal	Mild	Moderate	Severe
Rural	22%	43.5%	28%	4.6%
Urban	16.6%	39.3%	38%	6%

Mild IA was most common in both groups, while severe IA was more among urban students.

The Severe for internet Addiction was found to be more in urban area than rural areas.

Table 3: Factors associated with internet use-rural.

Variable	N	Category	N	Normal	Addiction	P value
Gender	150	Male	69	38	31	0.001*
		Female	81	65	16	
Continuous availability of internet	149	Yes	51	23	28	0.32
		No	98	77	21	
Gadget used to access internet	149	Desktop	1	0	1	0.001*
		Laptop	15	10	5	
		Tablet	30	19	11	
		Mobile	92	60	32	
Peer influence	149	Present	64	40	24	0.003*
		Absent	85	60	25	
Pornography	149	Use	23	6	17	0.41
		Not use	126	94	32	
Money spent on internet	149	300rs	108	87	22	0.31
		300-600rs	15	6	9	
		>600rs	26	8	18	
Hours spent per day	149	1-5hrs	106	85	21	0.002*
		6-10hrs	27	8	9	
		11-15hrs	17	8	18	

Among the rural students the various factors responsible for the internet addiction was analysed. The influence of Male Gender, availability of the gadgets, Peer influence

and Hours spent of internet in a day was found to be statistically significant. Nearly 70% of the students in rural spent nearly 300 rupees per month on internet and

around 5 hours of usage time. Internet addiction in males was statistically significant in both rural and urban students compared to girls. Among Urban students the

influence of male gender, Availability of internet, use of mobile phones and pornography were found to be the factors which were statistically significant.

Table 4: Factors associated with internet use-urban.

Variable	N	Category	N	Normal	Addiction	P value
Gender	150	Male	59	24	35	0.002*
		Female	91	60	31	
Continuous availability of internet	150	Yes	54	19	35	0.001*
		No	96	65	31	
Gadget used to access internet	150	Desktop	5	2	3	0.001*
		Laptop	21	10	11	
		Tablet	30	10	20	
		Mobile	94	52	42	
Peer influence	150	Present	65	31	34	0.126
		Absent	85	53	32	
pornography	150	Use	29	7	22	0.000**
		Not use	121	77	44	
Money spent on internet	150	300rs	104	72	32	0.34
		300-600rs	25	6	19	
		>600rs	21	6	15	
Hours of use per day	150	1-5hrs	99	70	29	0.54
		6-10hrs	35	6	29	
		11-15hrs	16	8	8	

Peer group influence for addiction was more in rural students. Smart phones were most commonly used gadgets for internet in use in both groups. An average hour of internet was 1-5 hour/day in both groups.

DISCUSSION

Internet Addiction is an emerging epidemic globally and number of studies have reported raising prevalence of internet addiction among adolescent and we conducted study to know prevalence rate of internet addiction and contributing factors for internet addiction among rural and urban adolescents.

The prevalence of mild Internet addiction 42% was high, similarly moderate level of addiction 33% is also higher compared to the previous studies conducted by Krishnamurthy and Kumar et al.⁷ This rise in addiction may be because of easily available smart phones at affordable rate, more involvement in online gaming and interaction in social media.

Anderson EL et al and Choi et al, it reported that the Internet addiction was more common in male students compared to female students and same we found in our study and factors may be social media involvement, online gaming and making online friends.^{8,9} Smart phone was most commonly used gadget for addiction. Continuous availability of internet, peer influence and smart phones usages are contributory factor for addiction.

There are few studies of Internet addiction in rural students and result we found is alarming. Although it is not clear whether depression precedes the development of internet abuse or it is a consequence, yet assessment of the same is imperative. A study by Niemiz et al dealt with British university students showed that those students who were pathological internet users had low self-esteem and were socially inhibited online.¹⁰

Young showed that withdrawal from significant real-life relationships is a consequence of pathological internet users.¹¹ The finding that urban school students use internet more compared to rural school students could be attributed to the fact that urban areas have got easy accessibility, fast developing and embracing technological growth at a pace faster than any rural area in a developing country like India.

The time spent on the internet and the amount spent on it by both the urban and rural area children in our study was found to be similar to the study findings of the Krishnamurthy and Kumar and Young KS.^{7,12}

The young teen wood or adulthood life of the children in both the rural and urban areas are not too different these days. This is due to availability of smart phones, internet in the phones, connectivity and other various factors. In our study we could conclude that in both the rural and urban areas the factors which influenced the internet usage was almost same. The adulthood with lot of

curiosity among them to know about lot of things, less parental supervision, more and easily availability of friends and their advices were the major factors influencing especially male for the internet addiction. These findings can be supported by the findings of the other studies.¹³⁻¹⁵

More number of schools could have been included in the study. The study participants may have responded in such a way as to portray themselves in a good light

CONCLUSION

Prevalence of “Internet addiction” among the urban school students was found to be higher as compared to rural school students, which is a cause of concern and requires to be addressed on priority before it takes the shape of an outbreak. As technology continues to grow at a faster rate and new applications, games, data become available on the web and failure to detect Internet Addiction at an early stage will make it a silent killer, affecting millions of people, especially children and adolescents. And excessive Internet use is an emerging public health issue as research findings have highlighted that excessive use of the Internet adversely affects one’s physical and mental health and social well-being.

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REFERENCES

1. Malviya A, Dixit S, Shukla H, Mishra A, Jain A, Tripathi A. A study to evaluate internet addiction disorder among students of a medical college and associated hospital of central India. *Natl J Community Med*. 2014;5(1):93-5.
2. Ferrara P, Corsello G, Ianniello F, Sbordone A, Ehrich J, Giardino I, et al. Internet addiction: starting the debate on health and well-being of children overexposed to digital media. *Eur Paediatr Assoc*. 2017;191:280-1.
3. Halder, Debarati and Jaishankar, K., Use and Misuse of Internet by Semi-Urban and Rural Youth in India: A Baseline Survey Report (2013) (January 14, 2014). Available at SSRN: <https://ssrn.com/abstract=2378968> or <http://dx.doi.org/10.2139/ssrn.2378968>.
4. Kumar R. Internet addiction and psychosomatic symptoms in engineering students, *Delhi Psychiat J*. 2014;17(2):387-93.
5. Young KS. Internet addiction: The emergence of a new clinical disorder. *Cyberpsychol Behav*. 1998;1(3):237-44.
6. Sharma A, Sahu R, Kasar PK, Sharma R. Internet addiction among professional courses students. *Int J Med Sci Public Health*. 2014;3(9):1069-73.
7. Krishnamurthy S, Chetlapalli SK. Internet addiction: Prevalence and risk factors: A cross-sectional study among college students in Bengaluru, the Silicon Valley of India. *Indian J Public Health*. 2015;59:115-21.
8. Anderson EL, Steen E, Stavropoulos V. Internet use and Problematic Internet Use: a systematic review of longitudinal research trends in adolescence and emergent adulthood. *Int J Adolesc Youth*. 2017 Oct;22(4):430-54.
9. Chou C, Condron L, Belland JC. A review of the research on Internet addiction. *Edu Psychol Rev*. 2005 Dec 1;17(4):363-88.
10. Niemz K, Griffiths M, Banyard P. Prevalence of pathological Internet use among university students and correlations with self-esteem, the General Health Questionnaire (GHQ), and disinhibition. *Cyberpsychol Behav*. 2005;8(6):562-70.
11. Pezoa-Jares RE, Espinoza-Luna IL, Vasquez-Medina JA. Internet addiction: a review. *J Addict Res Ther*. 2012;S6:004.
12. Young KS, de Abreu CN. Internet addiction: a handbook and guide to evaluation and treatment. New York:Wiley;2010:23.
13. Grover S, Chakraborty, K, Basu D. A survey of Internet use pattern among professionals. *Ind Psychiatry*. 2010;19:94-100.
14. Lam LT, Peng ZW, Mai JC, Jing J. Factors associated with Internet addiction among adolescents. *Cyberpsychol Behav*. 2009;12:551-5.
15. Korkeila J, Kaarlas S, Jääskeläinen M, Vahlberg T, Taiminen T. Attached to Web--harmful use of the internet and its correlates. *European Psych*. 2009;25:236-41.

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