Prevalence of Internet Addiction among Secondary Level Students

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ABSTRACT

Background: The study aimed to assess the prevalence of internet addiction among Secondary level students in Waling Municipality, Syangja, Nepal.

Methods: A cross-sectional study was conducted among 280 students aged 15-19 from three schools in Waling Municipality in January 2022; stratified simple random sampling proportional to the size of the population was used. A self-administered structured questionnaire was used and an Internet Addiction scale was applied which includes 20 questions with a score of 1–5 for each question. Based on scoring subjects would be classified into normal users (0–30), mild (31–49), moderate (50–79), and severe (80–100) Internet Addiction groups. Descriptive statistics, bivariate analysis, and multivariate logistic regression analysis were computed at a 5% level of significance.

Results: of the total 30.7 had mild and 15.4 had moderate internet addiction. The likelihood of reporting internet addiction was significantly higher among those who used the internet for more than two hours (AOR, 2.91; 95% CI, 1.56-5.42), common mode to access the internet (AOR, 17.04; 95% CI, 2.09-138.61), friend's encouragements (AOR, 2.18; 95% CI, 1.17-4.05), living with family (AOR, 5.183; 95% CI, 1.55-17.30) and gender (AOR, 1.833; 95% CI, 1.04-3.22)

Conclusion: The current study documents almost half of the school adolescents had internet addiction. Carrying out public awareness campaigns and establishing ways to enhance the positive effect of the internet while minimizing the negative outcomes of the associated factors may be a profitable strategy to decrease its prevalence and effect.

Keywords: Internet addiction; secondary level students; Nepal.

INTRODUCTION

Internet use has increased rapidly and it is estimated that global population using the internet increased from 17% in 2005 to almost 70% in 2021, with more than half of the internet users living in Asia.[1,2] This global rise in internet usage, especially among young people, has brought attention to the phenomenon of Internet addiction.[3] Defined by criteria such as preoccupation, failed attempts to control use, and negative emotional reactions when limiting use, it poses challenges to work, social, and personal life.[4]

Adolescents, particularly in developing countries like Nepal, are at heightened risk due to increased access to the Internet.[5] This addiction correlates with various issues including depression, poor academic performance, and sleep disturbances.[6,7] Despite its prevalence, research on this topic in Nepal is scarce, [8] likely due to competing health concerns country so to fill the research gap, and for a better understanding, this study is being conducted.

METHODS

An institutional-based, cross-sectional study was carried out in 3 selected Secondary Level schools of Waling Municipality, Syangja, Nepal. All regular students aged 15-19 of grades 11 and 12, who had at least one device to access the internet, were recruited. The information was collected in January 2022.

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The sample size was determined using the single population proportion formula, taking 21% of the prevalence of Internet Addiction[8] with the following assumption: 95% CI, 0.05% permissible error, and 10% non-response rate. So, the final sample size was 280.

Stratified probability sampling was adopted for this study. Firstly, out of 16 schools providing secondary-level courses, 3 were selected randomly by using the Lottery Method. Then, a distinct list of the total number of students from each selected School was made which was the sampling frame of the study. Lastly, 280 students were recruited from the sampling frame of each school by using simple random sampling proportional to size.

A Self-administered structured questionnaire was developed based on the previous studies. Socio-demographic, internet use, and psychology-related variables were assessed using standard questions from previous studies.[9,10] The IAT is the most commonly used measure of Internet Addiction among adults. It includes 20 questions with a score of 1-5 for each question and a total maximum score of 100. Based on scoring subjects would be classified into normal users (0-30), mild (31-49), moderate (50-79), and severe (80-100) Internet Addiction groups.[11] Mild Internet addiction, moderate Internet addiction, and severe Internet Addiction were considered as having Internet Addiction.[12]

A previously used structured scale was developed in English and translated to Nepali Language and again translated back into English to ensure consistency. The structured questionnaire was pretested in a similar population of one non-sampled institution using 10% of the total sample size of the study population to ensure the adequacy of the information, and a clear flow of questions and minor modifications were done in the questionnaire, especially in the sequence and wording of the questions. The purpose of the study was clearly explained to the participants and a structured questionnaire was provided with a request to them to provide their information. The filled questionnaire was collected on the same day. All the students were assured about the confidentiality of the information provided. Participation of the participants in the research process was voluntary.

The data were coded and entered in Epi data version 4.6 and exported to SPSS version 22.0 for analysis. Descriptive data were presented by frequency and percentage. The association between the variables was measured using the Chi-square test and binary logistic regression analysis was computed to find out factors associated with internet addiction. The factors that were significant in bivariate analysis were selected for multivariate analysis. Model fitness was checked by using Hosmer and Lemeshow Test, Nagelkerke R Square was computed. The significance level of P value was set at 0.05 for all analyses.

The study was approved by the ethical review committee of Gandaki Medical College Teaching Hospital and Research Centre (Reference No. 24; Registration No. 47805/064/065) and implementation of research by the school principals. To maintain the code of ethics of conducting research with children assent was taken from the school principals and parents were informed about the research prior the data collection. In addition to this, consent was taken from the respondents.

RESULTS

A total of 280 participants were involved with a response rate of 100%. More than half of 280 (55%) were female. (Table 1)

Table 1.Socio-demographic characteristics of the respondent.

Variable	Category	Frequency	Percentage (%)
Gender	Male	126	45
	Female	154	55
Age (in years)	15-17	232	82.9
	18-19	48	17.1
Ethnicity	Brahmin/Chhetri	144	51.4
	Janjati	104	37.1
	Others	32	11.4
Religion	Hindu	269	96.1
	Non-Hindu	11	3.9
Type of Family	Nuclear	211	75.4
	Joint	69	24.6
Education Level	11	159	56.8
	12	121	43.2
Education Status of Father	No formal education	24	8.6
	School level	236	84.3
	University level	20	7.1
Education Status of Mother	No formal education	49	17.5
	School level	215	76.8
	University Level	16	5.7
Occupation of Father	Farmer	79	28.2
	Employee	39	13.9
	Foreign employment	70	25.0
	Others*	92	32.9
Occupation of Mother	Farmer	56	20.0
	Employee	20	7.1
	Housewife	173	61.8
	Others	31	11.1

*= own private business

Table 2 show that 89.6% had access to Wi-Fi at their current residence and 62.1% of the respondents spent ≥ 2 hours a day using the internet. Regarding the prevalence of internet addiction, the study found that 30.7% of respondents had mild addiction, and 15.4% had moderate addiction. However severe internet addiction was not found among study subjects.

Table 2. internet-related characteristics of the study population.

Variable	Category	Frequency	Percentage (%)
Common mode of internet access	Wi-Fi	251	89.6
	Mobile internet	29	10.4
Hours in a day spent on the internet	< 2 hour	106	37.9
	≥ 2 hour	174	62.1
Device used to access the internet**	Computer/Laptop	53	18.9
	Mobile phone	275	98.2
	Tablets	6	2.1
Frequently visited app/website**	You Tube	201	71.8
	Facebook	178	63.6
	TikTok	134	47.9
	Instagram	62	22.1
	Others*	62	22.1
Purpose for internet use**	Academic	171	61.1
	Watching movies/songs	175	62.5
	Gaming	89	31.8
	Social networking	184	65.7
Overuse of internet by parents	< 4 hour	252	90.0
	≥ 4 hour	28	10.0
Living with family	Yes	259	92.5
	No	21	7.5
Peers encouragement for internet use	Yes	185	66.1
	No	95	33.9
Internet addiction test score	Normal (0-30)	151	53.9
	Mild (31-49)	86	30.7
	Moderate (50-79)	43	15.4
	Severe (80-100)	0	0

*= Snapchat, Gaming application, Photoshop

**=Multiple choice question

Table 3 and table 4 shows that internet addiction had a significant association with gender, educational level, education status of a father, occupation of a mother, common mode of access the internet, duration of internet use, frequently visited apps, purpose of internet use, living with family and encouragement of internet use by friends.

Table 3. Association between internet addiction and socio-demographic characteristics.

Variables		Not Addicted (%)	Addicted (%)	Chi-square value (x^2)	p-value
Gender	Male	55 (43.7)	71 (56.3)	9.740	0.002*
	Female	96 (62.3)	58 (37.7)		
Age (in years)	15-17	129 (55.6)	103 (44.4)	1.528	0.216
	18-19	22 (45.8)	26 (54.2)		
Ethnicity	Brahmin/Chhetri	79 (54.9)	65 (45.1)	0.801	0.670
	Janjati	53 (51.0)	51 (49.0)		
	Others	19 (59.4)	13 (40.6)		
Religion	Hindu	146 (54.3)	123(45.7)	.331	0.565
	Non-Hindu	5 (45.5)	6 (54.5)		
Type of Family	Nuclear	117 (55.5)	94 (44.5)	.798	0.372
	Joint	34 (49.3)	35 (50.7)		
Education Level	11	94 (59.1)	65 (40.9)	3.990	0.046*
	12	57 (47.1)	64 (52.9)		
Education status of Father	No formal education	15 (62.5)	9 (37.5)	7.683	0.021*
	School Level	131 (55.5)	105 (44.5)		
	University Level	5 (25)	15(75)		
Education status of Mother	No formal education	30 (61.2)	19 (38.8)	2.805	0.246
	School Level	115 (53.5)	100 (46.5)		
	University Level	6 (37.5)	10 (62.5)		
Occupation of Father	Farmer	48 (60.8)	31 (39.2)	2.579	0.461
	Employee	18 (46.2)	21 (53.8)		
	Foreign employment	37 (52.9)	33 (47.1)		
	Others	48 (52.2)	44 (47.8)		
Occupation of Mother	Farmer	37 (66.1)	19 (33.9)	8.356	0.039*
	Employee	9 (45.0)	11 (55.0)		
	Housewife	84 (48.6)	89 (51.4)		
	Others	21 (67.7)	10 (32.3)		

Table 4. Association between internet addiction and internet related characteristics.

Variables		Not Addicted (%)	Addicted (%)	Chi-square value (x^2)	p-value
Common mode of internet access	Wi-Fi	123 (49.0)	128 (51.0)	23.655	0.000*
	Mobile internet	28 (96.6)	1 (3.4)		
Duration of internet use in a day	< 2 Hour	79 (74.5)	27 (25.5)	29.133	0.000*
	≥ 2 Hour	72 (41.4)	102 (58.6)		
Device used to access the internet	Computer/Laptop	23 (43.4)	30 (56.6)	10.694	0.13
	Mobile phone	146 (53.1)	129 (46.9)		
	Tablets	1 (16.7)	5 (83.3)		
Frequently Visited app	You Tube	105 (52.2)	96 (47.8)	25.872	0.000*
	Facebook	88 (49.4)	90 (50.6)		
	Tiktok	66 (49.3)	68 (50.7)		
	Instagram	21 (33.9)	41 (66.1)		
	Others	25 (40.3)	37 (59.7)		
Purpose of internet use	Academic	92 (53.8)	79 (46.2)	17.176	0.002*
	Watching movies/songs	94 (53.7)	81 (46.3)		
	Gaming	32 (36.0)	57 (64.0)		
	Social networking	101 (54.9)	83 (45.1)		
Overuse of interne by parents	<4 hour	138 (54.8)	14 (45.2)	0.704	0.401
	≥ 4 hour	13 (46.4)	15 (53.6)		
Living with family	Yes	134 (51.7)	125 (48.3)	6.673	0.010*
	No	17 (81.0)	4 (19.0)		
Peers encouragement for internet use	Yes	83 (44.9)	102 (55.1)	18.029	0.000*
	No	68 (71.6)	27 (28.4)		

Males are 1.83 times more likely to report internet addiction as compared to female students in the study (AOR, 1.833; 95% CI, 1.04-3.22). Respondents whose mothers are housewives are 2.657 times more likely to report internet addiction as compared to other occupations in the study (AOR, 2.657; 95% CI, 1.07-6.54). the study population living with the family are 5.182 times more likely to report internet addiction as compared to the student living away from family (AOR, 5.182; 95% CI, 1.55-17.30). (Table 5)

Table 5. Logistic regression analysis of the factors associated with internet addiction.

Variables	AOR	95% CI	P Value
Sex			
Male	1.833	1.04-3.22	0.035
Female	1		
Education			
11	0.69	0.39-1.22	0.208
12	1		
Fathers' education			
Literate	1.053	0.37-2.97	0.923
Illiterate	1		
Mothers occupation			
Farmer	1.753	0.59-5.15	0.307
Employee	3.074	0.84-11.22	0.089
Housewife	2.657	1.07-6.54	0.034
Others	1		
Living with family			
Yes	5.182	1.55-17.30	0.007
No	1		
Friends encouragement			
Yes	2.18	1.17-4.05	0.013
No	1		
Duration of internet use			
> 2 hours	2.91	1.56-5.42	0.001
<2 hours	1		
Common mode			
Internet	17.04	2.09-138.61	0.008
Mobile internet	1		
Social networking			
Yes	0.690	0.37-1.25	0.225
No	1		
Nagelkerke R Square	.330		
Hosmer and Lemeshow Test	.511		

DISCUSSION

This study assessed the prevalence of internet addiction among secondary-level students of Waling Municipality. Different findings have been found among the few studies conducted in Nepal in the past few years that aimed to assess the prevalence of internet addiction among students. The result of a study conducted in the Kathmandu pooled prevalence of internet users was 31.78% and internet addiction was 2.57% which is different from the prevalence of internet addiction in this study.[13] Similarly, in a previous study conducted in Nepal in 2015, the prevalence of internet addiction was found to be 35.4%.[14] The variation in the result may be probably due to the increase in internet penetration rate and internet use by students over the past few years as well as due to differences in the sampling procedure of the study participant.

The majority of the finding of this study shows a significant association between internet addiction and different socio-demographic variables. It is evident that socio-demographics and internet addiction are linked.[10,15-19]

This study shows internet addiction had an association with the common modes of internet access which is similar to the finding of a study conducted in Ethiopia.[12] The association might be increased access to Wi-Fi and widespread presence of wireless mobile internet access services that facilitate using the internet by mobiles. Increased duration of internet use is also significantly associated with internet addiction; this online engagement, if not controlled, could appear problematic, and it is supported by previously conducted studies.[9,10,12,20,21] however, the speed of the internet connection might play a big role in affecting time spent using online.

Similarly, the purpose of internet use was significantly associated with internet addiction which is similar to the finding of a study conducted in Malaysia.[19] The possible association might be virtual life on the internet is more attractive because it allows user to escape their problem in real life. In this study, there was a significant association between internet addiction and peer encouragement which is different from the finding of the study conducted in Bangladesh.[10]

Conclusively, most of the internet-related characteristics were significant factors in internet addiction among secondary-level students. Very few studies have been conducted across the world to assess the prevalence of internet addiction among secondary-level students.

Thus, this study will help to understand the possible association between the above-mentioned variables and may be used by other researchers to conduct further research on the related topics.

Although research meets its objectives, some limitation was creeping with it. There might be a discrepancy between self-reported behavior and actual behavior practice. The study could only assess the internet addiction of participants from 11 and 12 classes of 3 schools of Waling Municipality. Three schools were selected due to the time limitation of the study. Hence, the study result cannot be generalized outside of Waling Municipality. There might be other factors affecting internet addiction that we have not assessed.

CONCLUSIONS

The prevalence of internet addiction was about 47% among the secondary level students. There are numbers of factors which play a significant role to point out the alarming situation such as time spent on internet per day, living setup, and peer influence were found to be statistically associated with the internet addiction. Major purpose of internet use was found to be entertainment, academic and use for social networking showed significant association with internet addiction. Most commonly used app/websites were found to be social media among participants. Moreover, majority of the participant access the internet through Wi-Fi.

Education programs need to be carried out on regular basis regarding the addictive behavior and coping strategies also involving education and sensitization of the students, parents as well as teachers.

COMPETING INTERESTS

The authors declare no competing interest.

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