

Prevalence of Internet Addiction and its Effect on the Mental Health of Adolescents

Shashi Kala Nishad (Research Scholar)
School of Education, S.G.R.R. University
Dehradun-248001, India

Dr Balbir Kaur (Associate Professor)
School of Education, S.G.R.R. University
Dehradun-248001, India

ABSTRACT

The goal of the current study is to investigate how internet addiction affects adolescents' mental health in the Dehradun district. 800 Dehradun students in classes XI and XII make up the sample of the study. For the purpose of testing hypotheses, mean, standard deviation, chi-square, and analysis of variance (ANOVA) calculations were made. The finding of the study reveals that the total number of adolescents possess a proportion not equally likely at various levels of internet usage. The prevalence of internet addiction is 4.306% as extremely high internet usage and 27.083 % as average/ moderate internet usage. Different levels of internet usage affected the mental health of adolescents' significantly.

Keywords: Internet addiction, Mental health, Adolescents

I. Introduction

Internet addiction (IA) is a growing social concern and has been intensively studied in recent years. Internet addiction is one such negative consequence of excessive internet use among its users. Internet addiction is defined as pathological internet use leading to psychosocial distress and significant impairment at school, home, and work as well as in health or interpersonal relationship (Widyanto & Griffiths, 2006). It refers to excessive internet use that may lead to significant impairment or distress (Laconi et al., 2014; Young, 2004). As per the report by Yang et al. (2014), the prevalence of Internet addiction, with a focus on online inappropriate sexual exposure, cyber-bullying victimization, academic-purpose computer overuse, and game-purpose computer overuse, were 31.6%, 19.2%, 8.5%, and 21.8%, respectively among the Korean middle school students (Yang et al. 2014). The report by Gong et al. (2009), claimed that internet addiction was gender dependent, leading to the use of drugs, as well as significantly increased with grade. His study of more than 3000 samples size from 11-23 years old persons, as well as from middle, high school, vocational and university graduates reported that the girls were less internet addicted as compared to the boys, which were 3% and 8 % respectively (Gong et al. 2009). Liu et al. (2012) evaluated that 11.6% of participants demonstrate pathological internet use behavior. They also revealed that the trend of internet addiction was higher, for male students as compared to female ones, as well as for senior students in comparison to junior ones. Their study suggested that parental internet uses correlated to adolescent Problematic Internet Use (PIU) positively, while the parental norms regarding internet use and parent-adolescent communication correlated to adolescent Problematic Internet Use (PIU) negatively (Liu et al. 2012). Wang et al. (2013) found that 7.5% of adolescents were internet addicted. They claimed that adolescents with internet addiction were more likely to be male students (Wang et al, 2013). The report of Li et al. (2013) stated that the prevalence of internet addiction among Chinese middle school students of mean age of 13.5 years, was associated with severe Problematic Internet Use (PIU) for 6.3% of participants (Li et al, 2013). Recent reports by Chi et al. (2020) and Xu et al. (2020) observed that the prevalence of internet addiction was 15.3 and 23.7 %, based on 2059 and 2892 samples size of Chinese adolescents respectively. The study of Xu et al. (2020) further differentiated that students of Macau were more likely to suffer from IA than those in mainland China, as they had done their survey in two different regions of China.

The most common behavioral changes observed by the Chinese researchers were found anxiety and depression, among high school students by Yang et al. (2014a), in middle and high school students by Li et al. (2019), social anxiety among vocational high school, higher vocational college students by Dong et al. (2019); middle and high school students by Feng et al (2019); High-level anxiety due to high-density living conditions of Chinese college students by Tao et al. (2016); high level of depression in middle school students by Lu et al (2018) and in secondary school students Xu et al. (2020), as well as among Hong Kong Chinese secondary

school students by Wu et al. (2016), while another report by Wang et al. (2013) stated that the male students were found to be more depressive as compared to females one of the age group of 13-24 years.

II. Objectives

- (i) To study the various level of internet addiction among adolescents.
- (ii) To find out the effect of internet addiction on the mental health of adolescents.

III. Hypotheses

- (i) There is no significant difference between various levels of internet addiction among adolescents.
- (ii) There is no significant effect of internet addiction on the mental health of adolescents.

IV. Research Methodology

In the present study normative survey method has been used, with a sample of 800 senior secondary school students of class XI and XII of the Dehradun district.

4.1 Variables of the Study

- (i) Independent Variable-Internet Addiction
- (ii) Dependent Variable- Mental Health

4.2 Tools Used

The following tools were used in this study-

- (i) Internet Usage Scale (IUS- SSKP) – S. Saini and P. Kaur
- (ii) Mental Health Scale (MHS-TSBA) – S. Talesara and A. Bano

4.3 Statistical Techniques Used

Mean, Standard deviation, chi-square test, Analysis of variance (ANOVA), and Tukey's Honestly-Significant-Difference Test were computed for the testing of hypotheses using SPSS 16.0 software.

4.4 Delimitations of the Study

The present study was restricted to the intermediate colleges of the Dehradun district. The selected semi-rural or peri-urban rather than extremely rural areas.

V. Findings of the study

H₀1: There is no significant difference between various levels of internet addiction among adolescents

Table 1: Percentage and chi-square value of Internet usage among total adolescents

Level of Internet Usage	Ext. High	High	Above Average	Average/ Moderate	Below Average	Low	Ext. Low	Total
Percentage	4.306	14.583	22.083	27.083	18.611	11.667	1.667	100.00
Chi-square Value	256.578							
df	6.00							
p-value	0.00 (P<0.05)							
Remark	Significant							

*0.05 level of significance

Inference:

From table 4.4, it was observed that the calculated Chi-square value was 256.578, and was significant at a 0.05 level of significance ($p < 0.05$). It means the hypothesis that there is no significant difference between various levels of internet addiction among adolescents was rejected and there exists a significant difference in proportions of adolescents to different levels of internet addiction. From the above table, it was clear that 27.083 percent of internet usage was average/moderate and only 1.667 percent were extremely low addicted. The maximum proportion of adolescents lies in the average/moderate usage category while the minimum lie in extremely low usage.

The result of the present hypothesis as supported by Liu et al. (2012) evaluated that 11.6% of participants demonstrated pathological internet use behavior. Wang et al. (2013) found that 7.5% of the adolescents were internet addicted.

H₀2: There is no significant effect of internet addiction on the mental health of adolescents.

Table 2a: Mean, SD of mental health of adolescents with respect to different levels of internet addiction

Level of Internet Usage	Mean Mental Health	N	Standard Deviation	Standard Error	95 confidence limits for the mean	
					Lower Bound	Upper Bound
Low Usage	196.02	84	9.18	1.00	194.03	198.02
Average/Moderate Usage	174.69	195	14.44	1.03	172.65	176.73
Above Average Usage	158.31	159	18.82	1.49	155.36	161.26
High Usage	147.14	105	21.28	2.08	143.02	151.26
Below Average Usage	186.83	134	9.59	0.83	185.19	188.47
Extremely High Usage	118.10	31	10.83	1.94	114.13	122.07
Extremely Low Usage	205.17	12	9.39	2.71	199.20	211.13

Table 2b: F ratio of mental health of adolescents with respect to different levels of internet addiction

Source	Type III SS	df	Mean Squares	F-Ratio	p-Value	Remark
Level of Internet Usage	2,74,053.443	6	45,675.574	194.751	0.000	Significant
Error	1,67,222.055	713	234.533		(p<0.05)	

*0.05 level of significance

Inference: From the table, it was observed that the F-value was 194.751 which was significant at 0.05 level (p<0.05). It shows that the mean scores of mental health of adolescents on different levels of internet usage differ significantly. From the table it was marked that maximum adolescents found average/moderate internet usage with mean mental health was 174.69 and minimum adolescents are extremely low internet usage with mean mental health was 205.17. In order to know which type of pair of internet usage significantly higher difference in mental health, the data were further analyzed with the help of Tukey's Honestly-significant-difference test, and results were given in Table 2c.

Table 2c: Tukey's Honestly-Significant-Difference Test

Level Of Internet Usage	Level Of Internet Usage	Difference	p-Value	95% Confidence Interval		Remark
				Lower	Upper	
Above Average	Average/Moderate	-16.379	0.000	-21.204	-11.554	significant
Above Average	Below Average	-28.520	0.000	-33.815	-23.225	significant
Above Average	Extremely High	40.211	0.000	31.346	49.076	significant
Above Average	Extremely Low	-46.858	0.000	-60.376	-33.341	significant
Above Average	High	11.165	0.000	5.487	16.843	significant
Above Average	Low	-37.716	0.000	-43.806	-31.625	significant
Average/Moderate	Below Average	-12.141	0.000	-17.208	-7.075	significant
Average/Moderate	Extremely High	56.590	0.000	47.860	65.321	significant
Average/Moderate	Extremely Low	-30.479	0.000	-43.909	-17.050	significant
Average/Moderate	High	27.544	0.000	22.079	33.010	significant
Average/Moderate	Low	-21.337	0.000	-27.229	-15.444	significant
Below Average	Extremely High	68.732	0.000	59.733	77.730	significant
Below Average	Extremely Low	-18.338	0.001	-31.944	-4.733	significant
Below Average	High	39.686	0.000	33.801	45.570	significant
Below Average	Low	-9.195	0.000	-15.479	-2.912	significant
Extremely High	Extremely Low	-87.070	0.000	-102.421	-71.719	significant
Extremely High	High	-29.046	0.000	-38.275	-19.817	significant
Extremely High	Low	-77.927	0.000	-87.416	-68.438	significant
Extremely Low	High	58.024	0.000	44.265	71.783	significant
Extremely Low	Low	9.143	0.457	-4.791	23.077	Not significant
High	Low	-48.881	0.000	-55.491	-42.271	significant

From Table 2c, it was clear that all the pairs found significant differences between each other but there was no significant difference between extremely low usage and low usage for internet usage. The result of the present hypothesis was supported by Rajanna et al., (2016) and Sakia et al., (2019) who reported that their studies that psychological distress due to different levels of internet addiction was observed among Indian higher secondary school students (Rajanna et al 2016; Sakia et al. 2019).

VI. Conclusion

From the above finding-

(i) It can be inferred that in the general approach to addiction to internet usage among adolescents, the proportions are significantly different with maximum being addicted to moderate usage and minimum to extremely low. Thus H_01 “There is no significant difference between various levels of internet addiction among adolescents” is rejected and it is concluded that total adolescents possess a proportion not equally likely at various levels of internet usage.

(ii) It can be inferred that the level of internet usage has a significant effect on the mental health of adolescents. Thus H_02 “There is no significant effect of internet addiction on the mental health of adolescents” is rejected and it is concluded that the different levels of internet usage affected the mental health of adolescents. The mental health of adolescents with extremely low and low usage is not significantly different while all other pairs differ significantly to each other. From this study, we concluded that more usage of the internet can affect the mental health of adolescents.

References

- [1]. Chi, X., Hong, X., & Chen, X. (2020). Profiles and sociodemographic correlates of Internet addiction in early adolescents in southern China. *ADDICTIVE BEHAVIORS*, 106. <https://doi.org/10.1016/j.addbeh.2020.106385>
- [2]. Dong, B., Zhao, F., Wu, X.-S., Wang, W.-J., Li, Y.-F., Zhang, Z.-H., & Sun, Y.-H. (2019a). Social Anxiety May Modify the Relationship Between Internet Addiction and Its Determining Factors in Chinese Adolescents. *International Journal of Mental Health and Addiction*, 17(6), 1508–1520. <https://doi.org/10.1007/s11469-018-9912-x>
- [3]. Feng, Y., Ma, Y., & Zhong, Q. (2019). The Relationship Between Adolescents’ Stress and Internet Addiction: A Mediated-Moderation Model. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.02248>
- [4]. Gong, J., Chen, X., Zeng, J., Li, F., Zhou, D., & Wang, Z. (2009). Adolescent addictive internet use and drug abuse in Wuhan, China. *Addiction Research & Theory*, 17(3), 291–305. <https://doi.org/10.1080/16066350802435152>
- [5]. Li, D., Li, X., Wang, Y., Zhao, L., Bao, Z., & Wen, F. (2013). School Connectedness and Problematic Internet Use in Adolescents: A Moderated Mediation Model of Deviant Peer Affiliation and Self-Control. *Journal of Abnormal Child Psychology*, 41(8), 1231–1242. <https://doi.org/10.1007/s10802-013-9761-9>
- [6]. Li, X., Luo, X., Zheng, R., Jin, X., Mei, L., Xie, X., Gu, H., Hou, F., Liu, L., Luo, X., Meng, H., Zhang, J., & Song, R. (2019). The role of depressive symptoms, anxiety symptoms, and school functioning in the association between peer victimization and internet addiction: A moderated mediation model. *Journal of Affective Disorders*, 256, 125–131. <https://doi.org/10.1016/j.jad.2019.05.080>
- [7]. Liu, Q.-X., Fang, X.-Y., Deng, L.-Y., & Zhang, J.-T. (2012). Parent-adolescent communication, parental Internet use and Internet-specific norms and pathological Internet use among Chinese adolescents. *Computers in Human Behavior*, 28(4), 1269–1275. <https://doi.org/10.1016/j.chb.2012.02.010>
- [8]. Lu, L., Xu, D.-D., Liu, H.-Z., Zhang, L., Ng, C. H., Ungvari, G. S., An, F.-R., & Xiang, Y.-T. (2018). Internet addiction in Tibetan and Han Chinese middle school students: prevalence, demographics and quality of life. *Psychiatry Research*, 268, 131–136. <https://doi.org/10.1016/j.psychres.2018.07.005>
- [9]. Rajanna, S. H., Sharma, M. K., & Palanichamy, T. S. (2016b). Exploration of technology use pattern among teenagers and its relationship with psychological variables. *Asian Journal of Psychiatry*, 17(2), 239–249.
- [10]. Saikia, A. M., Das, J., Barman, P., & Bharali, M. D. (2019). Internet Addiction and its Relationships with Depression, Anxiety, and Stress in Urban Adolescents of Kamrup District, Assam. *Journal of Family and Community Medicine*, 26(2), 108–112. https://doi.org/10.4103/jfcm.JFCM_93_18
- [11]. Saini, S., Kaur, P. (2017). Manual for Internet usage scale (S. Saini., P., Kaur (ed.); First). National Psychological Corporation.
- [12]. S. Laconi, R.F. Rodgers, H. Chabrol. (2014). The measurement of internet addiction: A critical review of existing scales and their psychometric properties. *Computers in Human Behavior*, 41 (2014), pp. 190-202, 10.1016/j.chb.2014.09.026
- [13]. Tao, Z., Wu, G., & Wang, Z. (2016). The relationship between high residential density in student dormitories and anxiety, binge eating and Internet addiction: a study of Chinese college students. *Springerplus*, 5. <https://doi.org/10.1186/s40064-016-3246-6>
- [14]. Talesara, S., Bano, S. (2017), Manual for Mental Health scale (S.Talesara, A., Bano (ed.); First). National Psychological Corporation.
- [15]. Wang, L., Luo, J., Bai, Y., Kong, J., Gao, W., & Sun, X. (2013). Internet addiction of adolescents in China: Prevalence, predictors, and association with well-being. *Addiction Research & Theory*, 21(1), 62–69. <https://doi.org/10.3109/16066359.2012.690053>
- [16]. Widyanto, L., & Griffiths, M. (2006). Internet addiction: a critical review. *International Journal of Mental Health and Addiction*, 4, 31–51.
- [17]. Wu, A. M. S., Li, J., Lau, J. T. F., Mo, P. K. H., & Lau, M. M. C. (2016a). Potential impact of internet addiction and protective psychosocial factors onto depression among Hong Kong Chinese adolescents - direct, mediation and moderation effects. *Comprehensive Psychiatry*, 70, 41–52. <https://doi.org/10.1016/j.comppsy.2016.06.011>
- [18]. Wu, A. M. S., Li, J., Lau, J. T. F., Mo, P. K. H., & Lau, M. M. C. (2016b). Potential impact of internet addiction and protective psychosocial factors onto depression among Hong Kong Chinese adolescents - Direct, mediation and moderation effects. *Comprehensive Psychiatry*, 70, 41–52. <https://doi.org/10.1016/j.comppsy.2016.06.011>
- [19]. Xu, D.-D., Lok, K.-I., Liu, H.-Z., Cao, X.-L., An, F.-R., Hall, B. J., Ungvari, G. S., Lei, S.-M., & Xiang, Y.-T. (2020). Internet addiction among adolescents in Macau and mainland China: prevalence, demographics and quality of life. *SCIENTIFIC REPORTS*, 10(1). <https://doi.org/10.1038/s41598-020-73023-1>
- [20]. Yang, S.-J., Stewart, R., Lee, J.-Y., Kim, J.-M., Kim, S.-W., Shin, I.-S., & Yoon, J.-S. (2014). Prevalence and Correlates of Problematic Internet Experiences and Computer-Using Time: A Two-Year Longitudinal Study in Korean School Children. *Psychiatry Investigation*, 11(1), 24–31. <https://doi.org/10.4306/pi.2014.11.1.24>
- [21]. Yang, S., Lu, Y., Wang, B., & Zhao, L. (2014). The benefits and dangers of flow experience in high school students’ internet usage: The role of parental support. *Computers in Human Behavior*, 41, 504–513. <https://doi.org/10.1016/j.chb.2014.09.039>
- [22]. Young, K. (2004). Internet addiction: A new clinical phenomenon and its consequences. *American Behavioral Scientist*, 48 (4) (2004), 402-415, 10.1177/0002764204270278