

To Assess the Impact of Internet Use on Adolescent's Mental and Physical Health

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Abstract

Background: social media is the most prominent communication tool of choice for adolescents. Therefore, it is important to understand the relationship between the frequency of social media use and health behaviors among this population.

Objective: To determine the effect of internet use on the psychosomatic and physical health of adolescent children.

Materials and Methods: This cross-sectional study was carried out by the Department of Pediatrics, Patna Medical College and Hospital, Patna, Bihar, India, during the period of June 2019 to May 2020. "Young people's internet usage questionnaire" was handed over to everyone to enquire internet use practices. We measured frequency of social media use using a Likert-like scale. A structured interview accommodating various factors and statements from the internet addiction test was used to find the level of internet addiction.

Results: Out of 390 participants, only 94 (24.10%) were the normal users; 112 (28.20%) had mild prevalence of internet addiction, 147 (37.70%) had moderate and 37 (9.49%) had severe prevalence for internet addiction.

Conclusion: The internet addiction scores in adolescents have a significant relationship to the various types of illnesses and the duration of illness of their parents. Excessive use of the Internet undesirably affects one's physical and mental health and social wellbeing.

Keywords: Internet, Adolescent, Mental, Physical Health

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Introduction

The Internet has become an integral part of life [1]. Moreover, Internet has the touch in each and every aspect of human life. There is an emerging public health concern over the increase in Internet usage, particularly among college going students [2]. India is the third largest country in the world next to china and United States in respect of the number of internet users [3].

According to a newspaper article by Pandey, children are now the targets of lifestyle diseases-major reasons being gorging on junk food, addiction to media, and aversion to outdoor activities and stressful lifestyle [4]. In 1995, a clinical psychology student Ms Kimberly Young, then in Rochester, USA, got interested in the psychological factors behind computer

use and independently conceived of “addictive use of the Internet” as a pathological condition. In 1995, a clinical psychology student Ms Kimberly Young, then in Rochester, USA, got interested in the psychological factors behind computer use and independently conceived of “addictive use of the Internet” as a pathological condition [5].

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 [6]. The adolescents have a tendency to experiment with anything that is new. They also try to be independent from the family and venture out with peers. Their innate vulnerability is another factor. Considering the above factors, it is no surprise that they become easy victims of any new temptation.

The centers for disease control and prevention defines electronic aggression as any type of harassment or bullying (teasing, telling lies, spreading rumors, making rude and mean comments, making threatening, or aggressive comments) that occurs through e-mail, chat rooms, instant messaging, blogs, text messaging or videos, and photos posted on website or sent via cell phone [7]. According to a recent article in Times of India, a study conducted among 1422 children and adolescents across seven states of India revealed that one in three Indian children and adolescents had experienced the pain of being bullied online, while half had come across peers who have faced cyber bullying [8].

While many studies have focused on excessive use of social media or the internet, evidence is emerging that the relationship between intensity of internet use and health outcomes is not necessarily linear. Hence the present study was conducted with the objectives to determine the effect of internet use on the psychosomatic and physical health of adolescents.

Materials and Methods:

This cross-sectional study was carried out by the Department of Pediatrics, Patna Medical College and Hospital, Patna, Bihar, India, during the period of June 2019 to May 2020.

Methodology

The required sample size for our study is calculated from study conducted by Arthanari et al [9], about 35.6% of the students had internet addiction, allowing a relative error of 5% and for a confidence interval of 95%, precision of 5%, the estimated minimum sample size calculated were 352. Assuming a non-responsive rate of 10%, approximately 390 were taken as final sample size. Our study covered about 390 adolescents of different schools aged 10-19 years after taking informed consent and assent forms.

“Young people’s internet usage questionnaire” was handed over to everyone to enquire internet use practices. We measured frequency of social media use using a Likert-like scale. A structured interview accommodating various factors and statements from the internet addiction test was used to find the level of internet addiction.

The internet addiction test (IAT), also known as Young’s internet addiction scale, designed by Young [10] was used for assessing the IA of adolescents. The IAT is a 20-item self-reported scale. Questions included in the scale specifically reflect typical behaviors of addiction related to IA. The IAT has strong internal consistency ($\alpha = 0.90-0.93$) and good test-retest reliability ($r = 0.85$) values [11].

Results

All the study participants were adolescents from different schools. Out of 390 participants, maximum (54.1%) were using computers/ laptops since more than 4 years. Approx 138 participants (35.39%) were using computers for 2-4 hours daily. 42 (10.77%) were using computers for than 6 hours daily. 323 (82.82%) were using

internet daily for more than 2 hours. 186 participants (47.69%) are spending 200-400 Rupees per month for internet expenditures.

216 participants (55.38%) were using Smartphone 4-6 hours/ day

Table 1: Details of the study

Serial no.	Characteristics	Frequency	%
1.	#Age (in years)		
	10-13	95	24.35
	14-16	162	41.54
	17-19	133	34.10
2.	#Gender		
	Male	235	60.26
	Female	155	39.74
3.	Years of computer use		
	0-4	179	45.90
	4-8	124	31.79
	>8	87	22.31
4.	Daily computer use (in hours)		
	0-2	112	28.71
	2-4	138	35.39
	4-6	98	25.13
	>6	42	10.77
5.	Daily internet use (in hours)		
	0-2	67	17.18
	2-4	157	40.26
	4-6	110	28.20
	>6	56	14.36
6.	Years of internet use (in years)		
	0-4	116	29.74
	4-8	175	44.87
	>8	99	25.39
7.	Years of smartphone use (in years)		
	1-4	152	38.97
	5-8	145	37.18
	>8	93	23.85
8.	Smartphone use per day (in hours)		
	0-2	35	8.97
	2-4	98	25.13
	4-6	216	55.38
	>6	83	22.56
9.	Expenditure on Internet per month (in Rs.)		
	<200	75	19.23
	200-400	186	47.69
	400-600	73	18.72
	>600	56	14.36

Table 2: Outcome of internet addiction according to YIAT scores

Prevalence	YIAT criteria	Frequency (n)
Normal users	Score 0-30	94 (24.10%)
Mild	Score 31-49	112 (28.20%)
Moderate	Score 50-79	147 (37.70%)
Severe users	≥ 80	37 (9.49%)
Total		390 (100%)

Out of 390 participants, only 94 (24.10%) were the normal users; 112 (28.20%) had mild prevalence of internet addiction, 147 (37.70%) had moderate and 37 (9.49%) had severe prevalence for internet addiction.

Table 3: Prevalence of mental and physical illness

Prevalence	Frequency	%age
Mental illness		
Depression	128	32.8
Anxiety	187	47.9
Stress	241	61.7
Physical illness		
Headache	341	87.4
Backache	298	76.4
Eye pain	283	72.6

Participants were also asked some questions about their mental health and physical health. So, it was found that participants who were the moderate and severe addiction of internet had more stress, anxiety and depression. In physical illnesses headache followed by backache and eye pain were more prevalent.

Discussion

Out of 390 participants, only 94 (24.10%) were the normal users; 112 (28.20%) had mild prevalence of internet addiction, 147 (37.70%) had moderate and 37 (9.49%) had severe prevalence for internet addiction. The pattern of internet use in our study was diverse and Krishnamurthy et al and Bagdey et al had similar pattern of internet use [12, 13]. Surwase et al studied in Nanded, Maharashtra reported mild prevalence 31.36% which is higher as compared to our study while moderate 34.49% which was lower than our results [14] While Chaudhary et al found mild prevalence of 51.42%, and moderate prevalence 7.45% [15].

In our study, a significant association was found between increased frequency of internet viewing and sleep problems. Several factors may be contributory for the same. First, the glare from the computer screen may suppress the nocturnal secretion of melatonin leading to decreased sleep. Second, the stimulating content viewed online may cause heightened alertness of the central nervous system which may inhibit relaxation, hence sleep. Finally, the sleep sacrifice made by the adolescent to stay online for a longer time may shorten the sleep duration. Chronic sleep debt may manifest as lack of concentration, attention problems, mood swings, and somatic problems such as headache and backache. Similar hypotheses were postulated by Li et al. regarding media and sleep problems [16].

Physical illness observed in the present study were headache, backache and eye pain.

Another study by Donne stein reported that 10-35% of young people have experienced

electronic aggression which has significant psychosocial effects on the victims, including depression, anxiety, social isolation, and suicide attempts [19]. In a recent study based on PHQ9 questionnaire, Agarwal et al. reported that about 83% males and 74% females of the victims of cyber violence suffered from depression. They suggested a strong need for comprehensive, school-based programs directed at cyber-violence prevention and intervention [20]. Our observations suggest that internet addiction is a prevalent public health issue, which is having multiple risk factors.

Conclusion

Youth is the most important building block of the nation, especially for a developing country like India. When the whole world is proceeding towards progress with modernization and using high-tech advancements. On the other hand, the field of Internet addiction is advancing rapidly even without its official recognition as a separate and distinct behavioral addiction. The need of the hour is to create awareness among them, plan public health policies with regard to this addiction, and conduct further research to support the same.

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