A Cross-Sectional Study on Internet Addiction Among Adolescent Children of Parents With Mental Illness

G.K. Sahanapriya[1], P Bijulakshmi[1] (iD), Gopi Rajendhiran1, S Mathumathi[1], Vikhram Ramasubramanian[1,2], and M. Kannan[2]

ABSTRACT

Background: The internet can cause adverse psychological issues in children whose parents show less competence because of their mental illness. This study aims to find the level of internet addiction among adolescents who have a parent with psychiatric illness and its relationship to the type and duration of their parent's illness.

Method: This study was conducted among 283 adolescents whose parents suffered from mental illness. They were selected from the inpatient and outpatient services of a neuropsychiatric hospital in India. Informed written consent was obtained from the parent not suffering from psychiatric illness, and a semistructured interview accommodating various factors and statements from the internet addiction test was used to find the level of internet addiction.

Result: A total of 79.5% of adolescents showed scores indicative of internet addiction, with 14.5% of the participants having mild levels of addiction, 60.8% having moderate levels of addiction, and 4.2% having severe levels of addiction. There is a significant relationship between internet addiction scores and the type and duration of psychiatric illness in a parent.

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.

Keywords: Internet addiction; adolescents; parents with mental illness

Key Messages

- There is a significant relationship between the internet addiction scores of adolescent children and the nature and duration of their parent's mental illness.
- There is a significant relationship between internet addiction and the use of the internet for online video games and social media use.

The internet is utilized by millions of people worldwide, and with its numerous benefits, it has become an integral part of our life. In DSM-5,[1] internet gaming disorder is identified in section III as "a condition warranting more clinical research and experience," and it has paved the way for the acceptance of behavioral addiction as a diagnosable problem. Internet addiction (IA) is considered to be an emerging behavioral problem, particularly among adolescents.[2,3]

The American Society of Addiction Medicine defines addiction as characterized by an inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response.[4] Beard[5] recommends the following five diagnostic criteria for IA: (a) is preoccupied with the internet; (b) needs to use the internet with increased amounts of time in order to achieve satisfaction; (c) has made unsuccessful efforts to control, cut back, or stop internet use; (d) is restless, moody, depressed, or irritable when attempting to cut down or stop internet use; and (e) has stayed online longer than originally intended. IA depends on three factors: personal, social, and internet-related. Personal factors such as low self-efficacy,[6] introspective characteristics,

[1]Dept. of Psychiatry, Ahana Hospitals, Madurai, Tamil Nadu, India. [2]Director of Research, M.S. Chellamuthu Trust and Research Foundation, K.K. Nagar, Madurai, Tamil Nadu, India.

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cognitive factors,[7] impulsive behaviors,[7] personality characteristics,[8] and lack of communication skills can make a person more prone to IA. Secondly, social factors such as feeling lonely and isolated[6,9,10] may create an atmosphere conducive to IA. Also, psychosocial factors derived from interrelationships between the individual and the family[2] can lead to IA. Thirdly, internet-related factors such as longer internet usage time, internet access at home, and superior internet skills[11] can lead to addiction.

Mental illness of a parent affects the life of the children in several ways. Patients with schizophrenia have difficulties in family communication, role functioning, sexual relationships, and are more likely to face legal issues.[12] Children of a parent with bipolar disorder suffer from emotional and behavioral disturbances[13] because of their parent's illness. Depression in a parent might also influence IA among children,[14] as depression might influence parenting attitudes. Parents experience practical demands on time because of their own need for engagement with services for their health and personal difficulties related to their own mental health needs.

Children need guidance and support from their parents during adolescent years, and having a mental illness may restrict the parents from fulfilling their parental roles. Although there are studies analyzing the prevalence of IA in children and adolescents and about parent's mental health and its influence on the mental health of children,[14] limited literature is available globally on the level of IA in relation to parental mental illness.

Early detection and intervention are possible only if studies focus on identifying precipitating and perpetuating factors contributing to the addiction levels, with a clear understanding of the current pattern of internet usage among adolescents. There are no regional studies that analyze the relationship between the types of mental illness in a parent and IA in adolescents.

The objective of this study was to measure the levels of IA among adolescents having a parent with mental illness. It seeks to measure the pattern and amount of internet usage among adolescents whose parents have mental illness. It also seeks to find the relationship between the scores of IA in adolescent children and the type of their parent's mental illness.

Methodology

Study Design

This cross-sectional, observational study was conducted, from June 1, 2019 to January 1, 2020, among school- or college-going adolescents who had one parent suffering from mental illness and who were taking treatment in a psychiatric hospital. The institutional ethics committee approved this study. The basic sociodemographic and family details of the participants and details of the parent's illness were documented. The level of IA among the adolescents was measured using Young's internet addiction scale. The levels of IA were analyzed for their relationship to their parent's illness. The parents of the adolescents who had scores indicative of addiction were duly informed about it, with suggestions for further evaluation and treatment if necessary.

Purposive sampling was done, and samples were selected from adolescents of parents diagnosed, according to the International Classification of Diseases, 10th edition (ICD-10), with major psychiatric disorders, namely schizophrenia, bipolar disorder, substance addiction, anxiety disorders, major depressive disorder, or obsessive–compulsive disorder and who had sought treatment from the inpatient or outpatient services of a neuropsychiatric hospital. The sample consisted of adolescents, both males and females, aged 12 to 18 years. Participants were selected only if they had access to the internet at home. Parents who were willing to let their children participate in the study signed informed consent, and assent was obtained from the adolescents.

Assessments

A semistructured interview schedule was developed for the present study. This contains two parts:

(a) Sociodemographic Data: Family details, including details of the parent's diagnosis and duration of illness.
(b) Statements regarding the use of popular internet portals such as gaming, social media, video games, etc.

The subjects' socioeconomic status (SES) was assessed using the modified Kuppuswamy SES scale,[15] the widely used scale in India that includes index parameters such as the head of family's educational status, occupational status, and overall aggregate income of the whole family to classify families into socioeconomic groups.

The internet addiction test (IAT), also known as Young's internet addiction scale, designed by Young,[16] 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.[17]

Procedure

The sample consisted of 327 participants. The screening for the fulfillment of the inclusion and exclusion criteria was done by a team consisting of psychiatrists and psychologists. Psychologists administered the study questionnaire, which included the statements from IAT. Of the 327 responses, 44 had to be discarded because the forms were incomplete, and a total of 283 responses were taken for analysis.

Statistical Analysis

Data were statistically analyzed using the statistical package for social services software (IBM Corp. Released 2016. IBM SPSS statistics for windows, version 24.0. Armonk, NY: IBM Corp). Descriptive statistics were performed, and analysis of variance was done to evaluate the relationship between the various variables and IA among adolescents at a 95% confidence level, and $P < 0.05$ was considered statistically significant.

Results

The sociodemographic details of the participants and details about parent's illness, the use of the internet, and the various platforms accessed by the adolescents were found to be normally distributed (**Tables 1 and 2**). 68.6% ($N = 194$) of the participants were females. Most of the participants (54.8%) belonged to the middle economic class, while 25.1% of the participants were from low-income families, and 20.1% belonged to high economic status. All the participants were pursuing school or college. 19.1% of the participants were of the ages 17 ($n = 33$)

TABLE 1.

Distribution of Sociodemographic Details

Factors		n (%)
Sex	Male	89 (31.4%)
	Female	194 (68.6%)
Age (in years)	12	29 (10.2%)
	13	54 (19.1%)
	14	44 (15.6%)
	15	51 (18%)
	16	51 (18%)
	17	33 (11.7%)
	18	21 (7.4%)
Socioeconomic status	Low	71 (25.1%)
	Middle	155 (54.8%)
	Upper	57 (20.1%)
Religion	Hindu	129 (45.6%)
	Christian	68 (24%)
	Muslim	86 (30.4%)
Sex of parent	Female	192 (67.8%)
	Male	91 (32.2%)
Illness in parent	Schizophrenia	94 (33.2%)
	Bipolar affective disorder	94 (33.2%)
	Depression	45 (15.9%)
	Addiction	24 (8.5%)
	Anxiety	16 (5.7%)
	OCD	10 (3.5%)
Duration of illness	Below 1 year	38 (13.4%)
	1–2 years	170 (60.1%)
	2–4 years	57 (20.1%)
	Above 4 years	18 (6.4%)

TABLE 2.

Distribution Across Various Internet Platforms

Factors		n (%)
Academics	Below 3 h	34 (12%)
	3–8 h	216 (76.3%)
	8–12 h	26 (9.2%)
	Above 12 h	7 (2.5%)
Video games	Below 3 h	48 (17%)
	3–8 h	169 (59.7%)
	8–12 h	51 (18.0%)
	Above 12 h	15 (5.3%)
Movies	Below 3 h	55 (19.4%)
	3–8 h	189 (66.8%)
	8–12 h	36 (12.7%)
	Above 12 h	3 (1.1%)
Social media	Below 3 h	73 (25.8%)
	3–8 h	167 (59%)
	8–12 h	34 (12%)
	Above 12 h	9 (3.2%)
TikTok	Below 3 h	82 (29%)
	3–8 h	161 (56.9%)
	8–12 h	29 (10.2%)
	Above 12 h	11 (3.9%)

TABLE 3.

Distribution of Internet Addiction Scores

Internet Addiction Level	N	%
Normal	58	20.5
Mild	41	14.5
Moderate	172	60.8
Severe	12	4.2
Total	283	100.0

and 18 (n = 21) years, while most of the participants (80.9%) were between the ages of 13 and 16 years. Most of the parents had been suffering from mental illness for one to two years (60.1%), while a small percentage (6.4%) had been suffering for >4 years.

4.2% (n = 12) of the participants had scores indicative of severe IA, while 60.8% (N = 172) had a moderate level (**Table 3**). 3.6% (n = 7) of the male participants had scores indicative of severe addiction, in contrast to 5.6% (n = 5) of female participants. A higher percentage of male participants (77.8%) had scores indicative of a moderate level of addiction (**Figure 1**).

An analysis of the relationship of the IA scores to the various sociodemographic details showed no significant association between IA scores and the age, sex, religion, or socioeconomic status of the adolescent or the sex of the parent who has mental illness. The scores in the IAT show that adolescents in the age group of 12 to 15 years had mean scores ranging 49.19 (SD = 16.68) to 53.14 (SD = 12.69), while those in the ages of 16 to 18 years had mean scores ranging 47.06 (SD = 19.06) to 58.19 (SD = 12.77). There was no significant difference in mean addiction scores for male (mean = 52.20, SD = 17.06) and female (mean = 51.65, SD = 15.86) participants.

An analysis of the influence of the various platforms used and time spent by the participants shows that time spent in academic activities over the internet does not influence addiction (F=1.06, P = 0.366), but other internet platforms and the time spent on them did have a significant influence at P < 0.001. The amount of time spent on the internet that exceeds 8 hours per day means that these adolescents spend one-third of their day online, with 23.3% of the participants spending it on video games, 15.2% on social media, and 14.1% on TikTok. On comparing IA scores across male and female participants who spent more than 8 hours per day on the internet, it was found that a higher number of female participants were found to spend more time on social media and TikTok while a higher number of male participants reported as spending more time on video games, movies, and TikTok (**Figure 2**).

Analyzing the influence of parent's illness, the duration of illness, and the time spent on various platforms (**Table 4**) revealed that parent's illness and the amount of time spent on various internet platforms have a significant relationship to the IA scores in the participants (significance at P < 0.001). IA scores of adolescents were found to be significantly associated (significance at P < 0.001) with the presence of schizophrenia and bipolar affective disorder [mean=58.58 (SD = 15.88), 52.11 (SD = 14.40), respectively] in a parent. The duration of illness in a parent was significantly associated with IA scores (F = 22, P < 0.001), with higher IA scores in adolescents (M = 63.77, SD = 12.82) whose parents had the illness for a longer time. Having a parent with an addiction disorder has a significant association with their adolescent children's IA, with all the participants having moderate levels of addiction when a parent has an addiction disorder.

Discussion

The results indicate that while 20.5% of the participants do not have addiction,

FIGURE 1.

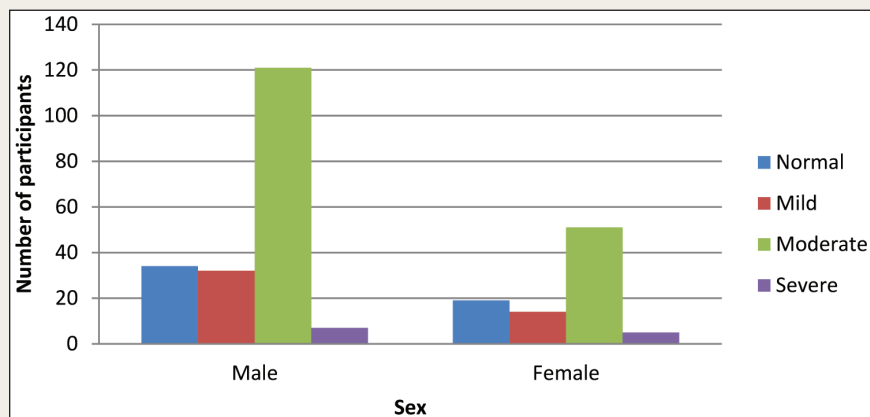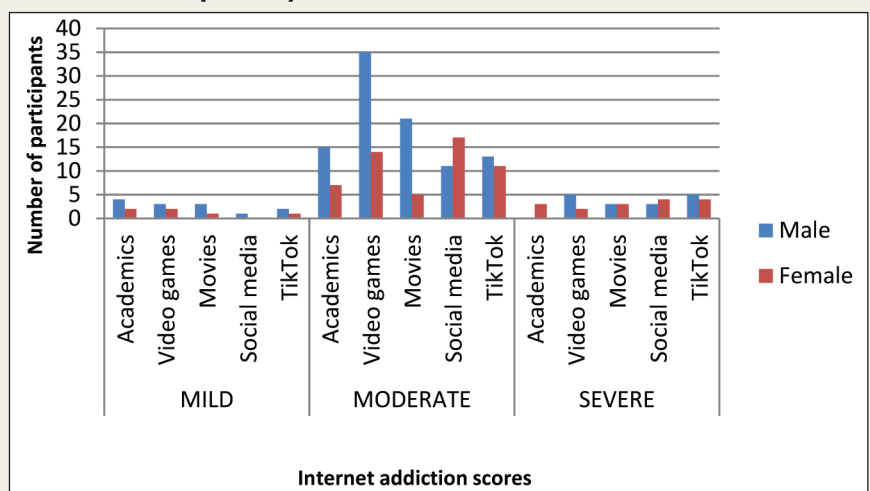**Sexwise Distribution of Internet Addiction Scores**

FIGURE 2.

Internet Addiction Scores Across Internet Platforms for Use of More Than 8 h per Day

no sex difference in the prevalence of IA. This shows that there could be other factors mediating gender influences in IA, and generalization regarding gender influence cannot be made at this juncture. The participants' usage of internet platforms like academics, video games, social media, TikTok, and movies has a significant influence on the level of IA. Girls were found to spend a lot of time on social media and TikTok, while boys tend to spend a lot of time on video games, social media, and TikTok, as shown in the previous studies.[21] This study indicates that IA is strongly associated with the use of online video games and social media platforms. It is interesting to note that using the internet for academic purposes does not influence the scores on the internet addiction scale.

The IA scores were significantly influenced by the type of their parent's illness and the duration of their illness. This study indicates that the parental role has a significant influence on IA in adolescents, as reported by similar[25] studies. Having a parent with mental illness has a negative impact on their adolescent children, especially when a parent has schizophrenia or bipolar affective disorder, as indicated by the moderate level of addiction scores of their adolescent children. The high mean score of children of parents with schizophrenia shows that those children are more impacted, as suggested by similar studies involving the psychological impact the presence of mental illness in a parent has on their adolescent children.[26] All the participants who had a parent with substance addiction have moderate levels of IA, indicating their vulnerability to developing a serious addiction. The findings in this study are similar to other studies that showed that the lack of proper parental involvement can significantly affect the life of their children.[27]

Conclusion

78.9% of adolescent children of parents with major psychiatric illness have some level of IA, with 4.2% of them having severe levels. Parents with psychiatric illness would not have been able to concentrate on the familial issues, which may push the children to get comfort from other sources, as shown by the influence of the type and duration of

14.5%, 60.8%, and 4.2%, respectively, have mild, moderate, and severe levels of addiction. As discussed earlier, there are no studies that analyze the pattern of internet usage or prevalence of IA in adolescents who have a parent with mental illness. Hence, the present findings were compared with global studies on IA among normal adolescents. The prevalence of IA is high compared to a previous study involving adolescents in the normal population conducted in the Netherlands in 2013, which found 3.7% of them as having serious addiction levels.[18] It is seen that IA levels have risen by six times when our result is compared with a previous Indian study conducted in 2013 among preuniversity students of 16 to 18 years of age,[19] where only 0.7% had severe addiction. An earlier study conducted in 2003 among adolescents

of 16 to 18 years of age, using the Davis Online Cognition Scale to measure the dependency on the internet, showed that 18% had dependence.[20]

The adolescents in our study spend approximately 5 to 8 hours per day on their academic activities in school or colleges. So, spending more than 8 hours per day on the internet would make it difficult for them to fulfill their academic, personal, and social responsibilities, as clearly indicated by the strong relationship between the time spent on the internet and the IA scores. The IA scores indicated that there is no significant sex difference. This is in contrast to previous studies in Korea,[21] Hong Kong,[22] and Pakistan,[23] which indicated that boys are at a higher risk of developing IA, but is similar to a study among adolescents in Quebec,[24] which indicated

TABLE 4.

Distribution of Internet Addiction Scores Among the Variables

Factors		N	Mean	SD	Stat Test	Stat Result
Illness in parent	Schizophrenia	94	58.58	15.88	F-Ratio = 10.25	P < 0.001 Significance
	Bipolar affective disorder	94	52.11	14.40		
	Depression	45	49.07	14.86		
	Addiction	24	45.01	13.82		
	Anxiety	16	40.52	16.99		
	OCD	10	32.37	12.73		
	Total	283	51.82	16.22		
Duration of illness	Below 1 year	38	37.95	13.20	F-Ratio = 22	P < 0.001 Significance
	1–2 years	170	50.80	15.05		
	2–4 years	57	60.35	14.94		
	Above 4 years	18	63.77	12.82		
	Total	283	51.82	16.22		
Academics	Below 3 h	34	48.88	17.03	F-Ratio = 1.06	P = 0.366 N.S
	3–8 h	216	51.68	15.96		
	8–12 h	26	55.29	18.52		
	Above 12 h	7	57.49	8.54		
	Total	283	51.82	16.22		
Video games	Below 3 h	48	45.53	14.92	F-Ratio = 16.31	P < 0.001 Significance
	3–8 h	169	49.58	15.59		
	8–12 h	51	59.70	13.44		
	Above 12 h	15	70.39	14.18		
	Total	283	51.82	16.22		
Movies	Below 3 h	55	44.55	14.72	F-Ratio = 10.73	P < 0.001 significance
	3–8 h	189	51.68	15.57		
	8–12 h	36	63.23	15.78		
	Above 12 h	3	57.00	16.17		
	Total	283	51.82	16.22		
Social media	below 3 h	73	47.75	15.31	F-Ratio = 7.18	P < 0.001 Significance
	3–8 h	167	51.19	15.01		
	8–12 h	34	59.94	18.54		
	Above 12 h	9	65.96	20.30		
	Total	283	51.82	16.22		
TikTok	Below 3 h	82	47.69	15.36	F-Ratio = 11.45	P < 0.001 Significance
	3–8 h	161	50.78	14.99		
	8–12 h	29	63.25	17.45		
	Above 12 h	11	67.71	15.75		
	Total	283	51.82	16.22		

parent's mental illness on the levels of the adolescent IA scores.

Limitations

This study did not have a control group of adolescents from the normal population. The present findings are exploratory and could form the basis for research. There could be other factors influencing IA, such as the role of the nonaffected parent, the influence of extended family members, and the personality traits of the participants, which were not included in this study, and could form the basis of future studies. Parental report on the use of the internet was not obtained, and the current functioning of the parent with mental illness was not screened. Also, no formal screening for psychiatric morbidity was done in the adolescents. The impact of **IA** on the adolescents' various domains of functioning was not measured.

Recommendation

This study indicates that having a parent with psychiatric illness makes the children vulnerable to develop IA. Awareness regarding this could lead to early detection and intervention, which would benefit the children and adolescents. Mental health professionals could help in addressing these issues by offering treatment and counseling in clinics and hospitals.

Further studies could cover other key factors, i.e., the adolescents' personality characteristics, type of accessibility to the internet such as smartphones, and compare IA levels in adolescents between parents with and without mental illness, for better insights into the causation of IA. Large-scale studies covering more diverse demographic areas could help identify vulnerable populations so that more focused intervention could be made available. The prevalence of IA, especially in adolescents, is bound to increase with the increase in technological advances that have made the internet easily accessible. Parents and other stakeholders could formulate strategies to prevent adolescents from landing them in serious addiction issues by providing awareness of this condition through programs at schools and colleges, and teaching adolescents safe and sensible internet usage.

ORCID iDs

P Bijulakshmi (iD) https://orcid.org/0000-0001-7709-7072

Sahana Priya (iD) https://orcid.org/0000-0003-4914-741X

Gopi Rajendhiran (iD) https://orcid.org/0000-0003-1396-8849

Mathumathi Shanmugasundaram (iD) https://orcid.org/0000-0001-7988-2525

Vikhram Ramasubramanian (iD) https://orcid.org/0000-0003-0180-7749

Mahalingam Kannan (iD) https://orcid.org/0000-0001-9190-1899

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