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Addiction like Behaviour of Mobile Phone Using Medical Students of Sri Guru Ram Das Institute of Medical Sciences and Research, Sri Amritsar

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Abstract

Introduction: Sri Guru Ram Das Institute of Medical Sciences and Research is a tertiary health care institution. The adoption of mobile phones promotes an addiction-like behaviour and is evolving as a public health problem that renders them at risk of developing addictions.

Aim and Objective: To study and compare the addiction like behaviour of mobile phone using adolescent and young adult medical students of SGRDIMSAR.

Material and Methods: This was a cross sectional type of study conducted amongst adolescent (age < 19years) and young adult (age >19 years) medical students of SGRDIMSAR, Sri Amritsar from October 2018 to January 2019 upon 412 medical students willing to participate in the study. These medical students were divided into two groups i.e. adolescents and young adults. A series of 20 standardised questions having two responses i.e. agree and disagree was used to assess their addiction like behaviour. The effects of mobile phone on it's users were divided into following groups i.e. Anxiety, Lack of control, Lack of priority for urgent matters, Trouble caused to mobile phone user and other addiction like effects of mobile phone use. These were analyzed statistically by applying the χ^2 test and the valid conclusions were drawn.

Results: Total 412 medical students of SGRDIMSAR were studied. Among these students 102 (24.7%) were the adolescents and 310 (75.3%) were young adults. Among the 20 questions related to the addiction like behaviour of the medical students using the mobile phones, for the 19 questions, higher percentage of young adults was found than the adolescents who agreed for the questions asked. For question regarding complaining by friends and family about their excessive mobile phone use higher number and percentage, 163 (55.8%) of adolescents agreed as compared to young adults, 57 (52.5%), that was contrary to the responses given by them to the other questions.

Conclusion: Higher percentage had shown the addiction like behaviour in young adults than adolescents due mobile phone use. This might be due to the reason that they had higher age; thus they might have used the mobile phones for the longer period of time. It is recommended that further studies should be conducted on smartphone users and large sample size of study subjects should be taken. Now among the students using mobile phones/smartphones; as both are in use now, early diagnosis and management of addiction like behavior should be done.

Keywords: Addiction like behavior; Adolescents; Mobile phone; Smartphone; Young adults

Introduction

Sri Guru Ram Das Institute of Medical Sciences and Research (SGRDIMSAR) is a tertiary health care institution situated in complex of Sri Guru Ram Das University of Health Sciences, SriAmritsar, for teaching the undergraduate and postgraduate students in medical sciences and conducting the research. It has a 900-bedded hospital. Mobile phone addiction or internet addiction

is defined as excessive behaviour in using technology tools such as smart phones, android applications or its entertainments [1]. Mobile phone usage characterized by addiction-like behaviour represents a specific form of technological addiction [2]. In a study conducted in 2019, the utilization of mobile phone internet facility for accessing social networking and engaging in group communication was reported by most of students. Mobile phone addiction was observed in nearly 40% of the subjects from the medical undergraduate (MBBS) students from medical college in Delhi [3]. Telephone and internet constitutes major elements of the society in this communication age. The extensive use of cell phones by different individual in societies necessitates close examination of its impacts on people's health. Using cell phones late at night after lights are out is particularly popular among adolescents and young adults for talking and sending text messages [4].

Mobile phone provides a medium of communication that has found enthusiastic and nearly universal adoption globally in both developed and developing nations. India has the second highest mobile connections in the world after China, with more than 90 connections per 100 people [5]. Mobile phones, in the last decade, have evolved from a primary tool of interpersonal communication to that facilitating group communication [6]. This transformation has been enabled by the integration of mobile Internet facilities and exponential increase in the computing power of mobile phones, converting them into smartphones. A multitude of leisure activities drive smartphones usage, which include mobile gaming, streaming music and photo; and video sharing on social networks like Facebook, Twitter, WhatsApp, Instagram, etc. The number of smartphone users in developing countries like India is showing, a rapidly increasing trend especially in young, urban populations, with nearly one in three mobile phone users expected to be smartphone users by 2021 [7]. A Hands holding smartphone with Mobile Phone Addiction displayed on the screen is shown in figure 1.

Figure 1: Hands holding smartphone with Mobile Phone Addiction displayed on the screen [8].

Technological addiction is a form of non-substance addiction that has been previously defined as the compulsion by an individual to engage in some specific activity despite harmful consequences as deemed by the user himself/herself to his/her individual health, mental state, or social life [9]. Nomophobia is a related phenomenon that refers to discomfort, anxiety, nervousness, or anguish caused by being out of contact of mobile phone and associated technology. The characteristics of nomophobia vary and could include regular use of mobile phone, anxiety or nervousness caused in the absence of access to mobile phone or mobile network, repeated checking of the mobile screen for notifications, sleeping with mobile device in bed, and preference for mobile interaction opposed to face-to-face exchanges [1]. Some studies had reported the presence of a high burden of Internet addiction and mobile phone addiction like behavior and nomophobia among Indian youth [10-15]. However, the previously validated instruments used for assessment of mobile phone addiction and nomophobia in Indian populations have certain limitations. The Nomophobia Questionnaire (NMP-Q) developed by Yildirim, et al. measures nomophobia in mobile phone users [16]. However, some items in the NMP-Q, like a person's annoyance on not being able to access, or feeling stranded in absence of the mobile phone, may not necessarily reflect nomophobia in the Indian scenario where mobile Internet is the principal means of Internet access for millions of young people, but safety concerns in public spaces for women can be ameliorated through mobile phone connectivity [17].

The questionnaire to assess mobile phone addiction like behavior by Aggarwal et al belongs to the pre-smartphone era and does not consider the potential for technological addiction arising from the built-in Internet facilities, social networking, and the Internet-based messaging services available in smartphones [18]. It is important to develop and validate a mobile phone addiction scale in a suitable Indian population, which takes into account the combined risk arising from both the conventional mobile phone and the Internet-based applications available in smartphones. Furthermore, the high prevalence of stress and burnout in medical students during their period of education is well established, which renders them at risk of developing addictions [19,20].

Internet addiction disorder has effected from education to entertainment, there is certainly no area in life that has not been changed by the advent of the internet. It has consequently given rise to a new set of mental health disorders, including, but not limited to internet addiction disorder, online gaming addiction, online shopping addiction, and online gambling addiction. The increasing prevalence of digital access has caused another concern, especially among children and adolescents known as internet gaming disorder. The condition is still under research and its real impact is still being studied. Internet addiction and gaming disorder have the risks as follows: (i) Can affect the day-to-day life and thought process of the person. (ii) Can lead to mood swings and mood instabilities.

(iii) Hamper creativity and imagination. (iv) Can lead to social isolation and withdrawal. (v) Put the person's relationship with partner, family, and friends at risk. (vi). The person can start living a fake life. (vii) It can lead to reckless behavior and spending a lot more money than it rightfully should be. (viii) Severe impairment, lack of cognitive functions, and mental distress. (ix) Depression. (x) Academic non-performance. (xi) Worsening of relationship with parents and peers. (xii) Aggressive behavior and violent streaks. (xiii) Living in a fantasy world. (xiv) Suicidal tendencies [21].

Aim and Objective

To study and compare the addiction like behaviour of mobile phone using adolescent and young adult medical students of SGRDIMSAR

Materials and Methods

This was a cross sectional type of study conducted amongst the medical students of SGRDIMSAR, Sri Amritsar. The students of SGRDIMSAR, Sri Amritsar were contacted to conduct the study. They were explained the purpose of the study and were assured to keep the results of their study confidential. Their consent to participate in the study was taken. The study was conducted from October 2018 to January 2019 upon 412 medical students willing to participate in the study. These medical students were divided into two groups depending upon their age; adolescents (age <19 years) and young adults (age >19 years). Adolescents were most of the medical students studying in 1st year MBBS (Bachelor of Medicine and Bachelor of Surgery) course of study and the young adults were the medical students studying in 2nd, 3rd and 4th year of MBBS. A pretested self-administered questionnaire comprising of a series of 20 standardised questions to assess the addiction like behaviour of adolescents and young adults was used for the study.

The questions asked in this study regarding their addiction like behaviour were as following: (i) Worry of their missed calls when they did not possess their mobile phones (ii) Feeling better after using their mobile phone (iii) Finding difficulty in switching off their mobile phones (iv) Feeling nervous on checking their mobile phones infrequently (v) Preference of their mobile phone over urgent matters (vi) Getting angry on turning off their mobile phones (vii) Their feeling of not having enough time for mobile phone use (viii) Facing problems due to preferring their mobile phone than important work (ix) Loosing track of important things while using their mobile phone (x) Their gradually increasing mobile phone usage time over the past 1 year (xi) Failure to reduce the number of hours spent on their mobile phones (xii) Complaining by friends and family about their excessive mobile phone use (xiii) Use of mobile phone so as to remain in touch with their friends and family (xiv) Their feeling of being overly attached to their mobile phones (xv) Being found busy on their mobile phones rather than dealing with their urgent matters (xvi) Missing their appointments because of being busy on their mobile phones (xvii) Getting in trouble while their mobile phone rang in the class (xviii) Being disliked by their friends when their mobile phone is switched off (xix) Feeling lost without their mobile phones (xx) Using their mobile phones as the first thing on waking up in the morning and last thing at night before sleeping [3]. In the questionnaire each question was having two responses i.e. agree and disagree. It was distributed amongst these students and they were told to fill this questionnaire under the supervision of the authors. The medical students who responded 'Agree' to these questions were considered as having addiction like behavior and those who responded 'Disagree' to these questions were considered as not having addiction like behavior.

To find the difference statistically in the addiction like behaviourof adolescents and young adults regarding the variables under study, χ^2 test was applied. SPSS 25.0 version was used to apply the χ^2 test. Difference in the addiction like behaviour of adolescents and young adults regarding the variables under study was considered significant at 95% level and highly significant at 99% level statistically.

Results

Total 412 medical students of SGRDIMSAR were studied. Among these students 102 (24.7%) were the adolescents and 310 (75.3%) were young adults. The results of the study are given in the following tables.

Variables	Number	Percentage
Gender		
Male	136	33
Female	276	67
Residency		
Urban	365	88.6
Rural	47	11.4
Age Group (years)		
<19	98	23.7
20-21	126	30.5
22-23	134	32.5
24-25	52	12.6
>25	2	0.5

Table 1: Age, sex and area wise distribution of medical students.

Table 1 is showing the age, sex and area wise distribution of all the 412 medical students studied.

Question	Medical Students	Agree		Disagree		Total		Statistical value		
		No.	%	No.	%	No.	%	χ^2	d. f.	P
i. Worry of their missed calls	Adolescents	34	33.3	68	66.7	102	100	12.95	1	0
	Young Adults	167	53.9	143	46.1	310	100			
ii. Feeling nervous on not checking phone	Adolescents	37	36.3	65	63.7	102	100	4.78	1	0.03
	Young Adults	151	48.7	159	51.3	310	100			
iii. Getting angry on turning off their mobile phone	Adolescents	18	17.6	84	82.4	102	100	5.95	1	0.01
	Young Adults	93	30	217	70	310	100			
iv. Feeling lost without their mobile phones	Adolescents	59	58	43	42.1	102	100	0.31	1	0.58
	Young Adults	189	61	121	39	310	100			

Table 2: Distribution of medical students according to their addiction like behavior with anxiety.

Table 2 is showing distribution of medical students according to their addiction like behavior with anxiety. For question number i to iii higher number and percentage of young adults agreed for their addiction like behavior than the adolescents. This difference in the addiction like behaviour of adolescents and young adults was highly significant for question number i and iii while significant for question number ii statistically. For question number iv higher number and percentage of young adults agreed for their addiction like behavior than the young adults and the difference in their addiction like behaviour was insignificant statistically.

Question	Medical Students	Agree		Disagree		Total		Statistical value		
		No.	%	No.	%	No.	%	χ^2	d.f.	P
i. Difficulty in switching off their phone	Adolescents	47	46.1	55	53.9	102	100	6.050.	1	0.01
	Young Adults	186	60.0	124	40.0	310	100			

ii.	Gradually increasing mobile phone usage over past 1 year	Adolescents	57	55.9	45	44.1	102	100	1.74	1	0.19
		Young Adults	196	63.2	114	36.7	310	100			
iii.	Failure to use the no. of hours spent on the mobile phone	Adolescents	63	61.7	39	38.2	102	100	1.22	1	0.27
		Young Adults	210	67.7	100	32.2	310	100			
iv.	Feeling of being overly attached to their mobile phones	Adolescents	58	56.8	44	43.1	102	100	1.45	1	0.23
		Young Adults	197	63.5	113	36.4	310	100			

Table 3: Distribution of medical students according to their addiction like behavior with lack of control.

Table 3 is showing distribution of medical students according to their addiction like behavior with lack of control. For all the questions higher number and percentage of young adults agreed for their addiction like behavior than the adolescents. The difference in the addiction like behaviour of young adults and adolescents was found highly significant for question number i while it was insignificant for question number ii to iv statistically.

Questions	Medical Students	Agree		Disagree		Total		Statistical value		
		No.	%	No.	%	No.	%	χ^2	d.f.	p
i. Preference of mobile phone over urgent matters	Adolescents	35	34.3	67	65.7	102	100	7.29	1	0.007
	Young Adults	154	49.7	156	50.3	310	100			
ii. Facing problems due to preferring phone over important work	Adolescents	59	57.8	43	42.1	102	100	1.18	1	0.276
	Young Adults	198	63.9	112	36.1	310	100			
iii. Missing their appointments because of being busy on their phones	Adolescents	19	18.6	83	81.3	102	100	2.16	1	0.141
	Young Adults	80	25.8	230	74.2	310	100			
iv. Found busy on their mobile phones rather dealing with urgent matters	Adolescents	35	34.3	67	65.6	102	100	7.29	1	0.007
	Young Adults	154	49.6	156	50.3	310	100			
v. Loosing track of important things while using their mobile phone	Adolescents	67	65.7	35	34.3	102	100	0.19	1	0.657
	Young Adults	211	68.1	99	32	310	100			
vi. Using their mobile phone as 1st thing after waking up and last thing before sleeping	Adolescents	84	82.3	18	17.6	102	100	0.71	1	0.397
	Young Adults	266	85.9	44	14.2	310	100			

Table 4: Distribution of medical students according to their addiction like behavior with lack of priority for urgent matters.

Like behavior with lack of priority. For all the questions higher number and percentage of young adults agreed for their addiction like behavior than the adolescents. The difference in the addiction like behaviour of young adults and adolescents was found highly significant for question number i and iv while it was insignificant for the remaining questions.

Questions	Medical Students	Agree		Disagree		Total		Statistical value		
		No.	%	No.	%	No.	%	□²	d.f.	P
i. Facing problems due to preferring phone over important work	Adolescents	59	57.8	43	42.1	102	100	1.18	1	0.28
	Young Adults	198	63.9	112	36.1	310	100			
ii. Complaining by friends and family about excessive mobile phone use	Adolescents	57	55.8	45	44.1	102	100	0.33	1	0.56
	Young Adults	163	52.5	147	49.3	310	100			
iii. Getting in trouble while their phone rang in the class	Adolescents	31	30.3	71	69.6	102	100	3.04	2	0.22
	Young Adults	122	39.3	187	60.3	310	100			

Table 5: Distribution of medical students according to their addiction like behavior with trouble caused to mobile phone user.

Table 5 is showing distribution of medical students according to their addiction like behavior with trouble caused to mobile phone user. For all the questions higher number and percentage of young adults agreed for their addiction like behavior than the adolescents. The difference in the addiction like behaviour of young adults and adolescents was found insignificant statistically for all.

Questions	Medical Students	Agree		Disagree		Total ;,,		Statistical value		
		No.	%	No.	%	No.	%	□²	d.f.	p
i. Feeling better after mobile use	Adolescents	75	73.5	27	26.5	102	100	0.002	1	9.19
	Young Adults	268	86.5	42	13.5	310	100			
ii. Not having enough time for mobile phone use	Adolescents	35	34.3	67	66.7	102	100	0.007	1	7.29
	Young Adults	154	49.7	156	46.1	310	100			
iii. Use of mobile phone so as to remain in touch with their friends and family	Adolescents	77	75.4	25	24.5	102	100	0.07	1	0.791
	Young Adults	238	76.7	72	23.2	310	100			

Table 6: Distribution of medical students according to their addiction like behavior with other addiction like effects of mobile phone use.

Table 5 is showing distribution of medical students according to their addiction like behavior with other addiction like effects of mobile phone use. For all the questions higher number and percentage of young adults agreed for their addiction like behavior than the adolescents. The difference in the addiction like behaviour of young adults and adolescents was found insignificant statistically for all questions.

Strength of the Study

The strength of the present study was that it assessed mobile phone addiction like behavior using a self-designed questionnaire. The items in the questionnaire were localized and suited to the Indian context.

Limitations of the Study

The limitation of our study was that it was conducted in a single medical college in Amritsar.

Discussion

Among the 20 questions related to the addiction like behaviour of the medical students using the mobile phones, for the 19 questions, higher percentage of young adults was found than the adolescents who agreed for the questions asked i.e. showed their addiction like behaviour. This might be due to the reason that young adults being higher in age used the mobile phones for the longer period of time than adolescents. It was only

question number 12 shown as part ii of table number 5 regarding complaining by friends and family about their excessive mobile phone use for which higher number and percentage i.e. 163 (55.8%) of adolescents agreed than young adults i.e. 57 (52.5%). This was contrary to the responses given by them to the other questions. However, the difference in the addiction like behaviour for this question was found insignificant statistically. Hence this might be due the natural variation only. The difference in the addiction like behaviour of adolescents and young adults for using their mobile phones was found statistically significant or highly significant in question number 1 to 7 and 15. This resembled with the previous studies [11,22]. However, for question number 8 to 21 (except 15 and 16) our findings showed that there was insignificant difference statistically in mobile phone addiction rates between adolescents and young adults. This was in agreement with a previous study [3]. It is recommended that further studies should be conducted on (i) The smartphones and (ii) large sample size of study subjects.

Conclusion

The use of mobile phones among the medical students had shown the development of addiction like behavior that increased with prolonged use of time. More over now the mobile phones are being replaced by smartphones by the addition of internet in mobile phones that are prone to develop the more severe addiction like behavior due to both of these. Hence among the students using mobile phones/smart phones early diagnosis and management of addiction like behavior should be done.

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