Does the addiction in online pornography affect the behavioral pattern of undergrad private university students in Bangladesh?

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ABSTRACT

Objectives: Anecdotal reports from Bangladesh indicated that some young adults were becoming addicted to online pornography similar to how others become addicted to gambling, drugs, and alcohol. Such behaviors can have social, academic, and behavioral implications in this population. This study investigated the association between consumption of online pornography and sociobehavioral patterns among students from a private university in Bangladesh.

Methods: In total, 299 undergraduate students (70.6% male) at the First Capital University of Bangladesh were interviewed using a structured questionnaire. The questions included sociodemographic characteristics, online-based pornography consumption habits and sociobehavioral characteristics. Chi-square test and binary logistic regression analysis were performed to examine correlations between online pornography addiction and sociobehavioral factors such as socializing habits, nature of interactions, university attendance and study focus, sleeping habits, and consumption of main meals.

Results: The use of pornography was significantly higher among students who gathered late nights with their friends (58.4%, $P < 0.001$). Furthermore, those who frequently argue/fight with their friends (51.0%, $P = 0.001$) frequently fooled around with their friends (48.4%, $P < 0.001$) and those who did not go to bed on time (57.7%, $P < 0.001$) reported greater consumption of pornography. Students who fooled around with their friends and those did not go to bed on time were more than twice as likely to watch pornography than students who did not fool around, and those went to bed on time.

Conclusion: The study provides the first overview of online pornography consumption. A significant proportion of male students consumed erotic materials online than females. Students who did not go to bed emerged to consume online pornography. Such behaviors can have negative impacts on studies education outcomes as well as wider social and moral impacts for students and the society as a whole. In this digital era, technology has invaded every aspect of our lives, with increasing access to the internet. Therefore, it is imperative to provide specifically designed pornography addiction education programs to educate students about the adverse effects of pornography. Furthermore, targeted treatment programs for sexual addiction, sexual abuse, and pornography abuse are needed to support the individuals who are addicted to pornography.

Keywords: Bangladesh, behavior, online addiction, porn, university students

Introduction

From humble beginnings in 1960's to the present day, the internet consolidates itself as a potent platform and an integral part of the modern society. By increasing access to information and communication technologies (ICTs), the internet has become the universal source of information for millions of people - in their homes, at work, at school or universities, creating the world without borders. Mobile technologies such as smartphones have increased the reach of the internet, thereby increasing the number of internet users. The advancements in technology and the expansion of internet have both positively and negatively contributed to the society. For example, health information can be easily accessed from the remote corners

of the world. Similarly, access to harmful materials such as pornography has become equally easy.[1]

At present, addiction to online pornography is an alarming phenomenon. Pornography is a type of sexual amusement based on sexual pictures, videos, audios, and written materials and can be sourced through electronic media (television, radio, and DVDs), print media (newspaper and magazine), and the internet.[2,3] The anonymity, accessibility, and affordability of the internet pornography are likely to contribute to the increased amount of the consumption of pornographic material.[3,4] For example, internet pornography is readily available at a mouse click, which takes away the need to go to an adult store to access pornographic material.

The word "porn" was the most searched keyword for the past few years.[5] In the United States (US), 79% of males and 76% of females who were aged between 18 and 30 years admitted that they watched online pornography least once a month during the year 2014.[5] In addition, 58% of the college students consume online pornography at least once a week.[5] This increased consumption of pornography might be a result of greater access to such material, and thus, it has become normalized in the modern society. With frequent and increased consumption, addiction to pornography develops over time. It is a chronic and relapsing condition that can have an adverse impact on family life, marriage, sexual risk-taking behaviors, and values of an individual.[3,6] Consequently, pornography addiction can isolate a person from their family, coworkers, and the broader community. This is because those who are addicted to pornography might spend a considerable amount of their time viewing the erotic material. Therefore, watching "porn" becoming a priority compared to everything else in their lives.[3]

In Bangladesh, over 1,800 institutions provide education to approximately of 800,000 undergraduate and postgraduate students. Privately owned institutions have a fundamental role in providing tertiary education in Bangladesh, and 38% of all university students are enrolled at a privately owned university.[7] Tertiary educational institutions are pioneers of adopting latest ICT regardless of their geographic location. Private and public universities in Bangladesh are at the forefront in the country providing free internet access to its students.[8] Furthermore, development of infrastructures due to economic growth has increased the number of internet users across Bangladesh. For example, the internet subscriptions grew from 31,140,804 in 2012 to 62 million in 2016, and it is estimated that majority of these internet subscribers are students.[9] As a result of their education, university students are more technologically inclined, particularly in developing countries. Similar to other nations, the increased access to the internet also has increased the access to online pornography in Bangladesh. For example, Google search statistics indicate that search terms "porn" was used 800,000 times in Bangladesh in 2016.[10] Similarly, the search-terms "sex" and "sex video" were used 2.2 million times during 2016.[10]

Much of the available peer-reviewed literature focused on the relationship between pornography and demography,[11] sexual behaviors,[6] violence and victimization,[12] adult social bond,[13] and sex-related crime and attitudes toward women,[3] and the research is from the Organization for Economic Co-operation and Development (OECD) countries. However, no significant studies have investigated the relationship between online pornography addiction and normal behavioral pattern among university students, and currently, no studies are available from developing countries such as Bangladesh. Due to disparities such as infrastructure, culture, religion, and income, the generalizability of findings of aforementioned studies is restricted and context specific. With increased access to the internet, rising consumption of online pornography, and growing number of university students, it is imperative to investigate the relationship between online pornography consumption and behavioral patterns among undergraduate students in Bangladesh. Therefore, the aim of this study is to describe the frequency of online pornography consumption from demographic, sociobehavioral perspectives, and identify associations between addiction to online pornography and behavioral patterns.

Methods

Data source

The First Capital University of Bangladesh (FCUB) (www.fcub.edu.bd) inaugurated in 2012. It was the first privately owned university in Khulna administration division, which includes most districts in the southwest of the country. More specifically, the FCUB is situated at Chuadanga, 200 Km southwest of Dhaka, the capital of Bangladesh. Approximately 1,500 undergraduate students (eight departments) attended the FCUB in 2016. The FCUB was chosen due to the convenience. A stratified sampling strategy with simple random sampling technique was used, and each department was considered as primary sampling unit (PSU). The study participants were recruited between 03 April and 10 May 2016, inclusive, and a total of 304 undergraduate students participated in this study.

Sample size determination

Students were selected from each PSU (i.e., department) using random sampling technique. The following formula was used for calculating sample size from each PSU:

$$n = \frac{N}{1 + Nd^2}$$

Where n = required sample size, N = population size (students from each department), d = marginal error (we considered, d = 0.033), and 95% confidence level has been considered. The formula provided that the significant sample size was 299 for this study. Therefore, 38 students were randomly selected from each PSU.

Covariates

All the face–to–face interviews were conducted by one of the authors using a structured questionnaire. Data pertaining to consumption of internet pornography for at least an hour/once a month were collected using pre-coded open-ended questions. This study included information relating to several sociobehavioral characteristics of the participants. The sociobehavioral characteristics included socializing with friends, late night socializing with friends, arguing/fighting with friends, fighting with friends due to affair/relationship, and fooling around with friends (e.g. face to face with someome or using social medias). Some more factors included regular university attendance, punctuality to class, focus on studying, going to bed on time, consuming three meals a day, and participating in social program. Responses to above questions were binary (yes/no). Demographic characteristics such as the age, sex, religion, parent's level of education, place of residence, and monthly household income were also collected. The Statistical Package for the Social Science (SPSS), Version 22.0 (Armonk, Somer, NY, IBM Corp.) was used to check the consistency of the continuous variable (monthly household income and age) because outliers/abnormalities are likely to affect the interpretation of results. Identified errors were corrected (if/when possible) or removed to maintain the integrity and the robustness of the dataset. Therefore, the final data analysis included data from 299 participants.

Statistical analysis

Descriptive statistics were presented as percentages and where appropriate and Chi-square (χ^2) test was used to examine the association between outcome (regular consumption of online pornography) and independent variables (covariates). A binary logistic regression model was used to investigate the relationships between sociobehavioral factors and the outcome variable. SPSS 20.0 was used for all statistical analysis, and they were statistically significant if they reached 5%.

Ethical approval

The ethics approval for the study was granted by the Research Approval Committee of FCUB (REAC-FCUB-08). Participation in this study was voluntary, and a written consent was obtained from all of the study participants before the initiation of the face-to-face survey.

Results

The majority (71.9%) of the study participants was 21–25 years old, and 70.6% were male, and 29.4% were females. More (54.0%) male students consumed online pornography compared to their female counterparts. Around 7.4% watched pornography for at least 1 h per day, 26.1% watched at least 1 h per week, and 41.8% watched at least 1 h per month. Participants' characteristics are displayed in Table 1.

Table 1: Associations between addiction in online pornography and sociodemographic factors

Variables	n (%)	Watching pornography[a]		P values (χ^2 test)
		No	Yes	
Age (in years)				
≤20	70 (23.4)	40 (57.1)	30 (42.9)	0.588
21–25	215 (71.9)	124 (57.7)	91 (42.3)	
>25	14 (4.7)	10 (71.4)	4 (28.6)	
Sex				
Male	211 (70.6)	97 (46.0)	114 (54.0)	<0.001
Female	88 (29.4)	77 (87.5)	11 (12.5)	
Religion				
Muslim	282 (94.3)	166 (58.9)	116 (41.1)	0.338
Others	17 (5.7)	8 (47.1)	9 (52.9)	
Father's education				
No education	38 (12.7)	19 (50.0)	19 (50.0)	0.702
Primary (1–5)	76 (25.4)	42 (55.3)	34 (44.7)	
Secondary (6–10)	81 (27.1)	51 (63.0)	30 (37.0)	
Higher secondary (11–12)	43 (14.4)	26 (60.5)	17 (39.5%)	
Higher (13 or more)	61 (20.4)	36 (59.0)	25 (41.0)	
Mother's education (years)				
No education	47 (15.7)	25 (53.2)	22 (46.8)	0.575
Primary (1–5)	125 (41.8)	72 (57.6)	53 (42.4)	
Secondary (6–10)	90 (30.1)	51 (56.7)	39 (43.3)	

(Contd...)

Table 1: (*Continued*)

Variables	n (%)	Watching pornography[a]		P values (χ² test)
		No	**Yes**	
Higher secondary (11–12)	25 (8.4)	18 (72.0)	7 (28.0)	
Higher (13 or more)	12 (4.0)	8 (66.7)	4 (33.3)	
Type of family				
Nuclear	229 (76.6)	137 (59.8)	92 (40.2)	0.301
Joint	70 (23.4)	37 (52.9)	33 (47.1)	
Place of residence				
Urban	54 (18.1)	27 (50.0)	27 (50.0)	0.177
Rural	245 (81.9)	147 (60.0)	98 (40.0)	
Family head				
Father	261 (87.3)	154 (59.0)	107 (41.0)	0.802
Mother	19 (6.4)	9 (47.4)	10 (52.6)	
Elder brother	14 (4.7)	8 (57.1)	6 (42.9)	
Others	5 (1.7)	3 (60.0)	2 (40.0)	
Monthly household income (BDT)				
≤10000	75 (25.1)	36 (48.0)	39 (52.0)	0.123
10001–20000	100 (33.4)	61 (61.0)	39 (39.0)	
20001–30000	72 (24.1)	48 (66.7)	24 (33.3)	
>30000	52 (17.4)	29 (55.8)	23 (44.2)	
Do you read the newspaper?				
No	28 (9.2)	16 (57.1)	12 (42.9)	0.783
Everyday	145 (47.5)	81 (55.9)	64 (44.1)	
1 day in a week	116 (38.0)	72 (62.1)	44 (37.9)	
1 day in a month	16 (5.2)	9 (56.2)	7 (43.8)	
Do you watch television?				
No	30 (10.0)	20 (66.7)	10 (33.3)	0.680
Everyday	180 (60.2)	105 (58.3)	75 (41.7)	
1 day in a week	76 (25.4)	41 (53.9)	35 (46.1)	
1 day in a month	13 (4.3)	8 (61.5)	5 (38.5)	
Total	299 (100.0)	174 (58.2)	125 (41.8)	

[a]Based on consumption of online pornography more than 1 h for at least once a month

The profile of the sociobehavioral factors was illustrated in Table 2. The majority (80.6%) of study participants' students often organized gathering with their friends. Late night gathering with friends was reported by 29.8% of students. Of all the study participants, 49.2% frequently argued/fought with their friends. Internet pornography consumption was greater among those who organized gatherings with their friends (46.1%, *P* = 0.002) and those students who reported had late night gathering with their friends (58.4%, *P* < 0.001). In addition, students who frequently argued/fought with their friends (51.0%, *P* = 0.001) and those who reported being unable to concentrate on their studies (54.2%, *P* = 0.031) also reported the significantly high proportion of internet pornographic consumption. Students who fooled around with their friends (48.4%, *P* < 0.001) and those did not go to bed on time (57.7%, *P* < 0.001) were also significantly associated with online consumption of pornography.

The sociobehavioral factors were included in the binary logistic regression analysis [Table 3]. In the unadjusted model, all the selected variables had a significant association with watching pornography except regular university attendance, punctual attendance to classes, eating three main meals daily, and participation in a social program. The models were adjusted for selected factors such as sociobehavioral factors (Model 2) and sociodemographic and sociobehavioral factors (Model 3). In adjusted models, students who fooled around with friends were more than twice as likely to watch pornography compared to students who did not fool around. Similarly, the students who did go to bed on time were more than 2 times more likely to watch internet pornography than those who slept timely.

Discussion

This is the first study to describe the internet pornography consumption and associated sociobehavioral factors of students

Table 2: Bivariate associations between sociobehavioral factors and online pornography addiction

Variables	n (%)	Watching pornographya		P values (χ² test)
		No	Yes	
Socializing with friends				
No	58 (19.4)	44 (75.9)	14 (24.1)	0.002
Yes	241 (80.6)	130 (53.9)	111 (46.1)	
Late night socializing with friends				
No	210 (70.2)	137 (65.2)	73 (34.8)	<0.001
Yes	89 (29.8)	37 (41.6)	52 (58.4)	
Argue/fight with friends				
No	152 (50.8)	102 (67.1)	50 (32.9)	0.001
Yes	147 (49.2)	72 (49.0)	75 (51.0)	
Regular university attendance				
No	87 (29.1)	44 (50.6)	43 (49.4)	0.087
Yes	212 (70.9)	130 (61.3)	82 (38.7)	
Punctual to class				
No	60 (20.1)	31 (51.7)	29 (48.3)	0.252
Yes	239 (79.9)	143 (59.8)	96 (40.2)	
Focused on studies				
No	59 (19.7)	27 (45.8)	32 (54.2)	0.031
Yes	240 (80.3)	147 (61.2)	93 (38.8)	
Fight with friends due to affair/relationship				
No	249 (83.3)	151 (60.6)	98 (39.4)	0.049
Yes	50 (16.7)	23 (46.0)	27 (54.0)	
Fool around with friends				
No	78 (26.1)	60 (76.9)	18 (23.1)	<0.001
Yes	221 (73.9)	114 (51.6)	107 (48.4)	
Go to bed on time				
No	111 (37.1)	47 (42.3)	64 (57.7)	<0.001
Yes	188 (62.9)	127 (67.6)	61 (32.4)	
Consume three meals a day				
No	88 (29.4)	45 (51.1)	43 (48.9)	0.110
Yes	211 (70.6)	129 (61.1)	82 (38.9)	
Participate in social program				
No	34 (11.4)	20 (58.8)	14 (41.2)	0.937
Yes	265 (88.6)	154 (58.1)	111 (41.9)	
Total	299 (100.0)	174 (58.1)	125 (41.9)	

aBased on consumption of online pornography more than 1 hr for at least once a month

attending a private university in Bangladesh. Marjory of the study participants was aged between 21 and 25 years and were males. The findings indicated that more male students consumed internet pornography than their female counterparts. Due to the lack of published data from Bangladesh, data within the Indian subcontinent or from other developing countries were expanded to include studies from OECD countries for comparison. A previous study among the US college students reported that 75% of male and 19% of female used some pornography in the past 12 months.[14] Previous international studies reported pornographic consumption rates between 50% and 99% among men and 30–86% among women.[15]

Similarly, high consumption of pornographic materials by males was reported in Scandinavia.[16] Bangladeshi male students consume more pornographic materials than female. It is possible that this appears to be a common behavioral trend across the globe. Studies suggest that there are sex differences in sexual brain activation in males and females ventromedial prefrontal cortex (vmPFC). Sexual neuroimaging studies found that females have weaker responses to the visually erotic stimuli than males.[17] Furthermore, strong influences of society and traditional setting, best expressed by a sexual double standard, are also likely overlooks male sexual expressions and defeats female sexuality.[17]

Table 3: Binary logistic regression for adjusted and unadjusted odds ratio (OR) of online pornography

Variables	Unadjusted OR Model 1	*P* values	Adjusted OR Model 2	*P* values	Adjusted OR Model 3	*P* values
Socializing with friends						
No	1.00	0.003	1.00	0.347	1.00	0.295
Yes	2.68 (1.39–5.15)		1.42 (0.68–2.92)		1.54 (0.68–3.51)	
Late night socializing with friends						
No	1.00	<0.001	1.00	0.222	1.00	0.297
Yes	2.63 (1.58–4.38)		1.43 (0.80–2.57)		1.41 (0.73–2.73)	
Argue/fight with friends						
No	1.00	0.002	1.00	0.217	1.00	0.619
Yes	2.12 (1.33–3.39)		1.41 (0.82–2.41)		1.17 (0.63–2.17)	
Regular university attendance						
No	1.46 (0.93–2.56)	0.088	1.46 (0.64–3.34)	0.364	1.57 (0.58–4.23)	0.366
Yes	1.00		1.00		1.00	
Punctual to class						
No	1.39 (0.78–2.46)	0.253	0.81 (0.31–2.08)	0.666	0.64 (0.21–1.91)	0.426
Yes	1.00		1.00		1.00	
Focused on studies						
No	1.97 (1.05–3.32)	0.032	1.33 (0.67–2.64)	0.407	0.88 (0.41–1.89)	0.755
Yes	1.00		1.00		1.00	
Fight with friends due to affair/relationship						
No	1.00	0.049	1.00	0.253	1.00	0.153
Yes	1.80 (0.98–3.33)		1.48 (0.75–2.94)		1.79 (0.80–4.01)	
Fool around with friends						
No	1.00	<0.001	1.00	0.001	1.00	0.028
Yes	3.19 (1.76–5.69)		2.66 (1.53–4.65)		2.41 (1.14–5.40)	
Go to bed on time						
No	2.85 (1.76–4.63)	<0.001	2.56 (1.43–4.55)	0.001	2.11 (1.04–4.14)	0.029
Yes	1.00		1.00		1.00	
Consume three meals a day						
No	1.50 (0.91–2.48)	0.111	1.05 (0.57–1.91)	0.869	1.69 (0.83–3.45)	0.147
Yes	1.00		1.00		1.00	
Participate in social program						
No	0.97 (0.47–2.01)	0.937	1.35 (0.58–3.13)	0.472	1.21 (0.46-3.21)	0.690
Yes	1.00		1.00		1.00	

Model 2: Adjusted for sociodemographic factors. Model 3: Adjusted for sociodemographic and sociobehavioral factors

The relationship between behavioral patterns and consumption of online pornography among adults was not well investigated. However, a small, but growing, body of research indicates that adolescents and adults are increasingly struggling with compulsive internet use for erotic materials, which impact their behavior patterns. For example, delinquent behaviors (e.g., police contact, physically assaulting another person, purposefully damaging property, and stealing property), problematic behaviors (e.g., obsession, compulsion, and consequences), and sexual behaviors related to internet pornography and cybersex were reported in association with compulsive internet use.[3,4,18] The findings from the current study indicated that those students who frequently argue/fight with their friends are more likely to consume pornography online. It is possible that the partners might feel betrayed if their loved ones need to consume erotic material online to be sexually satisfied. Frequent fighting with friends is likely to be related to obsession or compulsion of pornographic addiction. Due to the structural nature of the interviews, the reasons/triggers for the fights/arguments were not examined. Moreover, this is a limitation of this study. Therefore, future studies with a qualitative focus are needed to investigate the complex nature of the online pornographic consumption.

This study found that those students who organized gathering with friends or had late night gathering with friends are more

likely to watch online pornography. The findings can be explained using up time for sharing and watching pornography. Owing to structural of the survey interviews, the reasons for these were not examined. Further qualitative studies are needed to fully explore the nature of these gatherings. Typically, university students are highly sociable where the significant aspect of academic experience involved participating in social activities. For this reason, it is a possibility that the model overestimates the association of participating in social activities and consumption of online pornography.

Difficulty concentration on studies and inability to go to bed on time might also be related to the addictive nature of the pornographic materials. Pornography is an expression of fantasies that can rewire pleasure centers of the brain and alter structures and function.[5,19] It has been hypothesized that pornography can stimulate the brain's reward system intensively, which can bring about significant changes in the brain similar to what can be seen in drug addictions.[19]

The regression analysis showed that addiction in online pornography had a significantly adverse effect on sociabehaviors such as fooling around with friends and sleep in time. Studies that have revealed associations between behavioral patterns and addiction in online pornography among university students based on regression analysis are not well documented. Thus, our findings cannot be compared. Digital technologies have invaded every aspect of our lives. Increased availability and easy access may increase the consumption of pornography among young adults, especially in school, college, and universities adversely affect their daily activities.[3] Therefore, specifically designed pornography addiction education programs are needed to educate the youth. In addition, targeted treatment programs for sexual addiction, sexual abuse, and pornography abuse are needed to support the individuals who are addicted to pornography.

Although numerous anti-pornography laws such as Pornography Control Act, 2012, Bangladesh Code of Criminal Procedure, 1898, Bangladesh Evidence Act, 1872, and Bangladesh ICT Act, 2006 have been issued in Bangladesh, addiction to online pornography is a major concern. Revision and efficient implementation of these legislations are recommended. It is recommended that the students' need to be educated and counselled about the negative efforts of online pornography. We also recommend that concerted efforts are essential in making strong collaborations with government, non-government, social, cultural, and religious institutions to minimize the harms associated with young people's exposure to sexually explicit content through mass media and internet access.[20]

Our study has several strengths and limitations. The strength of the present study is that it renders detailed information about the behavioral patterns of undergraduate students which were influenced due to consumption of online pornography, an area where there presently is limited knowledge in less-resourced countries such as Bangladesh. The sample size allowed us to consider a variety of demographic and sociobehavioral factors for the use of multiple logistic regression models. That is, it has major advantages over bivariate analyses, which enables investigating complex relationships with multiple interacting factors. It is noteworthy that many other factors (e.g., late-night socializing and argue/fight with friends) were not significantly associated with addiction in online pornography when controlling for the other independent variables, despite the highly significant bivariate association (χ^2 test) demonstrated. This finding illustrates a major pitfall in relying on bivariate analyses. No prior study in Bangladesh used multiple logistic regression analyses to investigate such associations.

Moreover, this study is not free from limitation. It is based on a cross-sectional data that does not allow for interpretation about the cause-and-effect relationships. The study sample in the present study derived from only one private university and not a representative cross-section of all university students in Bangladesh. Thus, it is not clear whether the results of the present study can be generalized beyond this sample. There may have been unobserved confounding factors that could not be accounted for in the analyses. Another limitation could be information bias, which may result from collecting information on self-reporting age, occupation, household information as well as sociobehavioral indicators.

Conclusion

The study provides the first overview of online pornography consumption. A significant proportion of male students consumed erotic materials online than females. Students who did not go to bed emerged to consume online pornography. Such behaviors can have negative impacts on studies education outcomes as well as wider social and moral impacts for students and the society as a whole. In this digital era, technology has invaded every aspect of our lives, with increasing access to the internet. Therefore, it is imperative to provide specifically designed and culturally appropriate pornography addiction education programs to educate students about the adverse effects of pornography. Furthermore, targeted treatment programs for sexual addiction, sexual abuse, and pornography abuse are needed to support the individuals who are addicted to pornography. Further research is needed to fully explore the complex nature of online pornographic consumption and associated factors. Future studies should consider larger nationally representative sample.

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