



Psychological Impact of Pornography Exposure Among University Students in Kuantan

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Abstract:

Pornography is a medium for sexual pleasure obtained from sources like pictures, videos, audios and written materials. Pornography can cause addiction to the users by stimulating the reward system that will cause significant brain changes similarly seen in drug addiction. Pornographic addiction has become a serious concern in the community worldwide which involves multiple age groups from children, teenagers until adults. This concern is becoming serious as the sources of the pornographic materials are easily available via the internet. Pornography addiction is also shown to give psychological impact to its users. This study was conducted to investigate the psychological impact of pornography usage among university students in Kuantan, Pahang and the comparisons between gender. A descriptive quantitative study was conducted involving 114 college students in Kuantan. An online questionnaire was administered to assess the psychological impact of pornography exposure on anxiety and depression among the respondents. The study showed that more men are significantly involved with pornography compared to women. The common age of first exposure to pornography was between 13 to 17 years old in both genders. Anxiety was higher among those involved with pornography with no differences between gender. Depression was higher among those who consume pornography with a slightly higher percentage of women having moderate to severe depression. This study provides evidence that college students particularly in Kuantan are exposed to pornographic materials. The findings of higher anxiety and depression amongst those who were exposed to pornography suggest that this behavior could negatively affect the wellbeing of students and potentially influence their academic performance.



Introduction:

Pornography addiction is the type of addiction which can be triggered by watching any sexual materials, such as sexually explicit pictures, videos, audios, and written materials (Chowdhury, Chowdhury, Kabir, Perera, & Kader, 2018). It is due to the stimulation and alteration of the brain reward system that are similarly seen in drug addiction (Chowdhury et al., 2018). Brand et al., (2016) demonstrated that the ventral striatum in the brain of a subject lights up when looking at erotic visuals (Figure 1). A functional magnetic resonance imaging (fMRI) study also showed that the activity of ventral striatum among pornographic viewers was elevated when the participants were exposed to something erotic. This suggests that the brain reward system was releasing dopamine (Brand et al., 2016). The release of dopamine will elicit the feeling of pleasure to the users when they watch pornography. As the reward system gets activated when watching pornography, the brain activities will be disturbed and over time, pornography becomes a reliable way to seek pleasure among the users (Brand et al., 2016). Watching pornography excessively could affect the brain and eventually disturb the user's normal brain activity (Chowdhury et al., 2018). The negative outcomes of watching pornography are depression, social isolation, broken relationships, decreased productivity, anxiety, loneliness, self-blame and increased need for mental health support (Fraumeni-McBride, 2019).

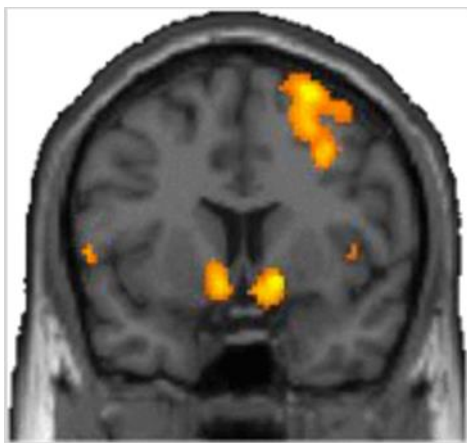


Figure 1. Positive correlation between self-reported pornography addiction and activation of the ventral striatum when watching pornographic materials (Brand et al., 2016).

Currently, pornography addiction is a major concern worldwide, especially in Malaysia since the source of pornographic materials can be easily obtained from the internet. In 2017, Malaysia was

ranked at 19th for pornographic searching in PornMD website with approximately 22,000 searches daily (Hawafi et al., 2017). On top of that, about 28,671 teenagers in Malaysia were reported to be addicted to pornography (Hawafi et al., 2017). In 2020, Malaysia ranked fourth globally, for visiting Pornhub website during the 'Movement Control Order' that was enforced by the government on 18th of March 2020 (Fang, 2020).

Pornography addiction is a very serious condition as it can affect mental, behavior, life, marriage and core values of an individual (Chowdhury et al., 2018). Several studies suggested that pornography affected the mental health status of the users (Grubbs, Stauner, Exline, Pargament, & Lindberg, 2015). Pornography addiction was associated with negative thoughts which were characterized by several psychological distress indicators, such as depression, anxiety and perceived stress (Grubbs et al., 2015). A study which included 853 respondents from India showed that 67.3% of the respondents reported to have increased level of anxiety and 58% of them stated that they often felt depressed (Fonceca, Raj & Anandan, 2019). This statement showed that the impact of pornography addiction toward the psychological wellbeing of the users is becoming a serious concern. In this study, the psychological effects of pornography usage among university students and the differences between genders were studied.

Materials and Methods:

This was a descriptive quantitative study. The respondents recruited in this study were university students in Kuantan aged between 18 to 27 years. An online questionnaire using the Google Form was distributed via social networking sites mainly through the WhatsApp application. The questionnaires were distributed for 44 days starting from 10th November 2019 until 23rd December 2019. The questionnaires were designed in both English and Malay language.

The first part of the questionnaire comprised of demographic questions which included gender, age, relationship status and sexual orientation. The second part consisted of questions that assessed cyber pornography usage while the final part comprised of questions that assessed the psychological effect of pornography, particularly anxiety and depression. Depression was assessed using an established diagnostic screening

instrument, the Patient Health Questionnaire-2 (PHQ2). The severity of depression was categorized based on the total score of the related questions in each item. A score of 1, 2, 3, 4, 5 and >6 represented not depressed at all, not depressed, slightly not depressed, mild depression, moderate depression, and severe depression, respectively. Respondents with a total score of more than three for each item were considered to have depression. Anxiety was assessed by including questions extracted from the Generalized Anxiety Disorder-7 scale. These questions measured the rating by respondents towards the following statements, "how often have you been bothered by ; "feeling nervous, anxious or on edge," and "worrying too much about different things,". The scale provided was between 1 (not at all) to 5 (extremely) (Grubss et. al., 2015). The questions ended by prompting the respondents to relate the signs and symptoms with their pornography activity "do you think all the symptoms is caused by your activity of watching pornography ?".

Descriptive statistics were presented as percentages and where appropriate Chi-square (χ^2) test was used to examine the association between the outcomes and the genders. Data analysis was done using Statistical Package for the Social Sciences (SPSS) and Microsoft Excel. The ethics approval for the study was granted by the Kulliyah of Pharmacy Postgraduate and Research Committee (Expedite Review No. 10/2019 KEC) dated 12 November 2019.

Results:

A total of 114 students participated in this study in which 33.3% (n=38) were male and 66.7% (n=76) were female. The majority of the respondents were aged between 22-25 years old (71.9%) while the rest were 18-24 years old (27.2%) and more than 25 years old (0.9%).

There were a few studies reported on the prevalence rates of pornography usage between genders. It was reported that 97.8% out of 316 Danish adult men and 79.5% out of 372 Danish adult women had been involved with pornography (Hald, 2006). The pattern of pornography usage among the respondents were analyzed and presented in Table 1 (Appendix). Most of the variables related to the usage of pornography were found to show a significant difference between genders. Higher percentage of men was found to have ever watched pornography with 92.11% (n=35) compared to women 50.00% (n=38) from the total of 114 respondents. Among the 35 men who have watched

pornography, 42.86% (n=15) of them recorded their last activity within the last one week. On the other hand, from 38 women who have watched pornography, 28.95% (n=11) of them were found to be watching pornography within the last 6 months of completing the questionnaire. Compared to women, it was found that men used pornography more often than women based on the frequency of watching pornography in which 37.14% (n=13) of men reported to watched pornography three times or more in a week as compared to women at only 18.42% (n=7) (Table 1-Appendix). This observation was similar with few other findings that also presented with a higher percentage of usage among male compared to female respondents (Chowdhury et al., 2018; Hald, 2006). Apart from the usage of pornography, the interpersonal context of use was also identified in this study. The preference to watch pornography alone showed the highest percentage in both genders (Table 1-Appendix). The observation on the preference of men to watch pornography alone was similar with the result presented by Hald (2006). However, in women, this observation contradicts with another study that found the percentage of women who chose to watch pornography with their romantic partner was higher than the percentage of women who prefer to watch pornography alone (Hald, 2006).

The medium and age of the participants being exposed to pornography was also identified and studied. Based on a study done in Malaysia, it was reported that social networking such as Facebook, Twitter, LinkedIn, MySpace and Instagram were some of the mediums in which the youth started to get involved in sexual activities (Senadjki, Rahim & Lee, 2019). In this study, both genders were first exposed to pornography during the secondary school age (13-17 years old). The majority of women received the exposure on pornography through mass media while men experienced pornography through friends (Table 2-Appendix). The finding on the range of age at first exposure to pornography is in accordance with the previous study from Hald (2006) which also found that the common age of exposure was >13 years old. Many of these youths started to seek for any form of sexual information, engagement online at the age of 14 years old or older because this is the age of curiosity on their sexual development from various aspects, physical, emotional and social (Ybarra & Mitchell, 2005).

A study conducted among 688 Danish adults reported that younger age of first exposure to

pornography can be one of the strong predictors of pornography consumptions (Hald, 2006). In this present study, a small percentage of women at 5.26% (n=2) were exposed to pornography at an earlier age than men which was less than 5 years old. This finding was not in correspondence with Hald (2006) which found that men were exposed to pornography at an earlier age than women. It was interesting to note that one of the respondents from this study who were exposed to pornography at the age of less than 5 years old was highly associated with pornography addiction. This is based on her frequency of watching pornography, which was three times per week or more. This respondent was found to have severe depression and extreme symptoms of anxiety. The respondent also stated that she experienced the symptoms of anxiety and depression due to the struggling to control her own desire toward pornography. On a contrary, another respondent who has been exposed to pornography at an early age was not highly addicted to pornography based on her frequency of watching pornography of less than once per month. This respondent did not report experiencing any extreme symptoms of anxiety but has been classified to have mild depression. The respondent also reported that other factor that might contribute to the depression is her studies. Hence, based on only these two respondents, a conclusive correlation between the age at first exposure to pornography and pornography addiction effects cannot be made.

Apart from the usage and exposure of pornography among the respondents, the most important aspect of concern is the psychological effects of watching pornography. The psychological effects addressed in this study were the effects of anxiety and depression caused by watching pornography. These two aspects were studied because watching pornography may induce anxiety and depression to the users due to the relation of the amygdala function and human addictive behaviors (Gola, Miyakoshi & Sescousse, 2015). Pornography can affect the mesolimbic dopamine pathway that connects with the reward system in the brain (Love et al., 2015). The dopamine flood caused by the pornography leads to an activation of the extended amygdala that is responsible for pain processing and fear conditioning (Love et al., 2015). The resulting negative emotional state stimulated by the amygdala leads to the activation of brain stress systems and dysregulation of anti-stress systems (Love et al., 2015). Hence, pornography addictive behavior can lead to psychological stress among the users.

For anxiety, the percentage of respondents who experienced the symptoms of anxiety such as feeling of nervousness or shakiness, feeling tense, terror or panic and feeling of restlessness among those who watched pornography were identified. The finding showed that those who watched pornography showed a higher percentage of experiencing all these symptoms compared to those who do not watch pornography in both genders (Table 3-Appendix). However, among those who watched pornography, the percentage of men and women who experienced the symptoms of anxiety was similar and did not show any significant differences (Table 3-Appendix).

Despite the result showing higher percentage of anxiety among those watching pornography, it cannot be deduced that pornography is the sole factor that contributes to the anxiety as some of the respondents claimed that there were other factors contributing to their anxiety and depressive symptoms. Some of the factors mentioned were studies, low grade results, family issues and friends. On the other hand, for all the anxiety symptoms, those who did not watch pornography in both genders had no extreme symptoms of anxiety (Table 3-Appendix). Hence, this result reflects that the symptoms of anxiety were low among those who are not involved with pornography.

Apart from anxiety, the connection of pornography to the depressive symptoms was also investigated in this study. The effect of pornography to depression was studied because the use of sexually explicit material appears to be linked to higher rates of depression (Willoughby, Busby & Young-Petersen, 2018). A study suggested that youths and individuals often have negative perception about pornography (Willoughby et al., 2018). Hence, those who are involved in pornography will experience the feeling of guilt when they are unable to stop watching pornography which may lead to depression (Willoughby et al., 2018). Another study suggested that psychological change happened when someone discovered their addiction toward pornography, and they tried to stop the action abruptly because of feeling ashamed and this will consequently lead to the depression (Schneider, 2000).

The symptoms of depression such as the thoughts of ending life, feeling lonely and feeling worthlessness were asked in this study to identify the depressive symptoms among the respondents related to the usage of pornography. The finding showed that the

percentage of respondents in both genders who have the thoughts of ending their lives are comparably higher among those watching pornography than those who have not (Table 4-Appendix). According to Lin et al. (2014), adults with internet addiction were more likely to be associated with suicidal thoughts and attempts. The internet addictions included in the study were pornography, gaming, gambling and etcetera (Lin et al., 2014). This suggests that pornography addiction may lead to a negative impact to the mental health among those watching pornographic materials.

Similarly, the other two symptoms of depression which are feeling lonely and feeling worthlessness also showed a higher percentage among those watching pornography (Table 4-Appendix). The severity of depression was measured using the Patient Health Questionnaire-2 (PHQ2) which involves two questions about the feeling of down, depressed, or hopeless and having little interest or pleasure in doing things. Based on the result, among those who were involved with pornography, the percentage of women having moderate to severe depression was higher than men at 31.58% (n=12) and 20% (n=7) respectively. Apart from that, the percentages of respondents having depression were higher among those watching pornography compared to those who have not watched pornography (Table 4-Appendix). Despite the result showing higher percentage of depression among those watching pornography, it cannot be concluded that pornography was the only contributor to depression as some of them claimed that there were other factors contributing to their depressive symptoms such as studies, low grade results, low self-esteem, family issues and friends.

Our finding that demonstrated pornography was associated with depressive symptoms was similar to a study by Willoughby et al. (2018). The authors found individuals that were involved in watching pornography regularly had a significantly higher level of depressive symptoms compared to those who did not watch pornography, and the latter group was linked to a more positive mental health outcome (Willoughby et al., 2018). The symptoms of both depression and anxiety were highly associated with addictive behavior of human in which they will usually present with withdrawal symptoms once pornographic materials are halted for a certain period of time (Garcia & Thibaut, 2010). The

withdrawal symptoms that might be experienced by the pornographic addicted users include anxiety, depression, rumination and guilt related to a reduction of sexual activities, as well as difficulties to stop or reduce the frequency of sexual activities (Garcia & Thibaut, 2010).

The current study also examined the sexual orientation of the respondents. We have found that although the majority of the respondents were heterosexual (90.4%, n=103), there were also respondents with other sexual orientation which were bisexual (7.9%, n=9) and homosexual (1.8%, n=2). Among the bisexual and homosexual respondents, 90.9% of them admitted having watched pornography. Schrimshaw et al. (2016) studied 265 men who reported to have sexual intercourse with another man in the past 12 months and found a correlation between exposure to sexually explicit media and sexual orientation. These men aged more than 17 years old also admitted that they practiced Male-sex-Male (MSM) activity and have watched MSM pornographic materials in the past 3 months (Schrimshaw et al., 2016). The authors also reported 81.5% of them who self-identified themselves as gay or homosexual admitted that they were influenced by the pornography content which led them to fantasize and apply the same behaviors that indirectly contributed to the change of their sexual orientation (Schrimshaw et al., 2016). The authors demonstrated that 93% of the participants agreed that they always think about doing similar acts as what they have seen in the pornographic materials and 70% of them reported that they actually did the things that they viewed in the sexually explicit materials with other men (Schrimshaw et al., 2016).

Nevertheless, in our study, the correlation between pornographic usage and the contribution to sexual orientation cannot be made. There was no question asked whether pornography affect their sexual orientation and only 11 respondents out of the total respondents reported having abnormal sexual orientation. Further study is required to identify if there is a strong correlation between sexual orientation and pornographic materials usage in our population and how this information can be used to strengthen the public sexual education, parenting and awareness on the danger of pornography. Apart from that, our limitation of this study included the use of a small, cross-sectional sample. Therefore, it does not portray the real situation of pornography addiction among the university students in Kuantan.

Conclusion:

Our study provides an overview on the online pornography usage among university students in Kuantan. A significant proportion of male respondents were reported to be involved in pornography compared to females. The common age at first exposure to pornography in both genders was 13-17 years old. The symptoms of anxiety among those watching pornography were similar in both genders but a higher percentage was noted in those who were involved with pornography. The percentage of women with moderate and severe depression was slightly higher than men among those watching pornography and the percentages in both genders was higher compared to those who were not involved with pornography. This study provides evidence that university students particularly in Kuantan are exposed to pornographic materials. The findings of higher anxiety and depression amongst those who were exposed to pornography suggests that this behavior could negatively affect the wellbeing of students and potentially influence their academic performance. Despite the result showing high percentage of anxiety and depression among those watching pornography, it cannot be concluded that pornography was the sole contributor to these psychological changes as some of the respondents claimed that there were other factors contributing to the anxiety and depressive symptoms such as studies, low grade results, low self-esteem, family issues and friends. Further research is needed to fully explore the relationship of pornography addiction and its psychological effects in both genders. Future studies should consider a larger nationally representative sample.

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Table 1-Appendix

Table 1 Cyber Pornography Usage (in %)			
Variables	Men	Women	Pearson's χ^2 Test
1. Have you ever watch pornography?			
Yes	92.11 (35)	50.00 (38)	$\chi^2= 20.654^*$, df=2
No	2.63 (1)	40.79 (31)	
I do not know	5.26 (2)	9.21 (7)	
2. If Yes: You have watched pornography within the last			
6 months	14.29 (5)	28.95 (11)	$\chi^2= 4.186$, df=4
1 month	8.57 (3)	15.79 (6)	
Week	42.86 (15)	26.32 (10)	
24 hours	28.57 (10)	23.68 (9)	
3.Frequency of pornographic use			
Less than once a month	11.43 (4)	31.58 (12)	$\chi^2= 7.389$, df=4
1-2 times per month	25.71 (9)	28.95 (11)	
1-2 times per week	17.14 (6)	7.89 (3)	
3 times per week or more	37.14 (13)	18.42 (7)	
4. I used to watch pornography			
Alone	97.14 (34)	94.74 (36)	$\chi^2= 19.029$, df=4
With romantic partner	0.00 (0)	5.26 (2)	
With friends	0.00 (0)	0.00 (0)	
With stranger/online friends	0.00 (0)	0.00 (0)	

* $p < 0.001$, numbers in parentheses represent n/cell.