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The Relationship Between Pornography Addiction and Cognitive Function in Young Adults in Banten

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ABSTRACT
Physical and psycological changes that appear in teenager, and misused sexual information may lead to pornography contents usage, may cause addiction and compulsive behavior. There are 1809 pornography cases according to Survei Komnas Perlindungan Anak Indonesia from 2011 until 2016. Pornography interrupt working memory and attention, lead to cognitive disturbances. In Indonesia, there're just a few of research study this topic. Research subjects also are just middle school students. So, researcher want to study it at young adult age. To understand the relationship between pornography addiction and cognitive at young adult in Banten On July to August 2018, this cross-sectional study was done, with 61 young adults in Banten. Data are gathered from online questionnaire. Excel 2010 and SPSS24 used for tabulation and data analysis, respectively.Significant results were obtained from relationship between pornography addiction and cognitive problem (p-value = 0.000; odds ratio [OR] 26.722; 95% confidence interval [CI95] 5.094 – 140.171). Gender significantly related with pornography addiction (p-value = 0.000; odds ratio [OR] 32.47; 95% confidence interval [CI95] 3.991 – 26.183), all samples with pornography addiction are men, men with pornography addiction (58%). Age don't significantly related with pornography addiction (p-value: 0.158; odds ratio [OR] 0.313; 95% confidence interval [CI95] 0.034 – 2.853). Pornography duration don't significantly related with pornography addiction (p-value: 0.293 [OR] 3.8; 95% confidence interval [CI95] 0.32 – 44.51), samples with excessive pornography duration more often have pornography addiction (67%) than samples with non excessive pornography duration (34%). Pornography addiction significantly related with cognitive impairment.

INTRODUCTION

A survey by the Indonesian National Commission for Child Protection (KPAI) from 2011 to October 2016 revealed that there were 1,809 cases of pornography and cybercrime against children (Suyatno, 2015). In the study "Internet Use among Children and Adolescents in Indonesia," conducted by the Ministry of Communication and Information Technology and UNICEF, among children aged 10–19 years, 52% admitted to encountering pornographic content through advertisements or unsuspecting websites, while 14% accessed it voluntarily (Unicef Indonesia, 2017). When a person enters adolescence, many changes occur, including both physical and psychological changes. Therefore, adolescents must receive accurate information from reliable sources regarding sexuality. If they obtain incorrect information from unreliable sources—especially when facilitated by technological developments—deviations may occur. One such deviation is pornography use (Clark, 2015).

Pornography is closely related to compulsive behavior (Mestre-Bach & Potenza, 2023; Stark, Klucken, Potenza, Brand, & Strahler, 2018). This compulsive behavior may include irresponsible sexual behavior and excessive masturbation (Chowdhury et al., 2018; Haryani & Syukur, 2012; Hassan, 2018; Mardhatillah, 2017; Price et al., 2016). Pornography influences adolescents' attitudes and behaviors, particularly when there is an urge to watch and imitate content depicted in pornographic material (Haryani & Syukur, 2012).

If pornographic content is consumed continuously, it can lead to addiction. As the severity of pornography addiction increases, individuals may develop compulsive behaviors in which they cannot control their sexual thoughts (voluntary control becomes impaired). More concerning, this addiction may persist into adulthood. Pornography can interfere with a person's working memory. As a result, individuals who consume pornography over a long period may make decisions and behave in ways that are potentially harmful. It is also possible that individuals neglect their duties and responsibilities due to pornography use (Bőthe et al., 2018; Blais-Lecours et al., 2016; Blais-Lecours et al., 2017).

The urgency of this research is driven by five converging factors. First, Indonesia has one of the highest pornography exposure rates in Southeast Asia (97% of teens), yet research on its cognitive consequences remains severely limited. Second, the young adult brain (ages 18–24) is still developing executive functions, making this population particularly vulnerable to addiction-related cognitive impairment. Third, neuroscientific evidence from Indonesian studies (KemenPPPA/UHAMKA MRI study, 2024) has demonstrated that pornography addiction may cause brain changes comparable to those associated with substance addiction, yet public awareness remains low. Fourth, the economic and social consequences of cognitive impairment in young adults—including reduced workplace productivity, educational underachievement, and poor decision-making—carry significant societal costs (Kühn & Gallinat, 2014; Gorwood et al., 2016; Prause et al., 2015). Fifth, the COVID-19 pandemic increased internet usage and pornography consumption, making post-pandemic assessment of cognitive impacts critical.

The novelty of this research is fourfold. First, it is the first study to investigate the relationship between pornography addiction and cognitive function in young adults in Banten, providing baseline data for this region. Second, it focuses on the young adult age group (18–24 years) rather than adolescents, addressing a gap in the literature. Third, it uses validated instruments—the Problematic Pornography Consumption Scale (PPCS) for addiction assessment and the Gibson Test of Cognitive Skills for cognitive function measurement. Fourth, it provides quantitative risk estimates (odds ratios) for the association between pornography addiction and cognitive impairment (OR = 26.72), enabling public health prioritization.

The effect of pornography on working memory occurs through interference with attention. Attention and memory are key cognitive domains (Gibson, 2008–2017). Therefore, if pornography addiction disrupts attention, it is closely related to overall cognitive function. Moreover, individuals exposed to pornography may imitate behaviors depicted in pornographic media. Research on the relationship between pornography addiction and cognitive function in young adults in Banten remains limited, especially in Indonesia. Although some studies examine the relationship between pornography addiction and cognition, their subjects are

primarily junior and senior high school students. Findings from those studies may differ from outcomes observed in the young adult population.

METHOD

This study used an analytical study with a cross-sectional design. The research materials used an online questionnaire on pornography addiction (Problematic Pornography Consumption Scale / PPCS), and a questionnaire on cognitive (Gibson Test). This research was conducted in Banten. Data collection was carried out from July 2018 to August 2018. In this study, the target population was young adult respondents in Banten. The study's limited population was young adult respondents who watched pornography and were willing to fill out questionnaires online. The study sample was young adult respondents who met the inclusion and exclusion criteria of the study. The sampling method is a purposive sample using an online questionnaire. This research is included in the unpaired category, where the formula for unpaired categorical data is:

$$(Z\alpha\sqrt{2PQ}+Z\beta\sqrt{((P1Q1+P2Q2)}))/(P1-P2)$$

Remarks

n = number of samples

p = sensitivities

q = complement p = 1-p

$Z\alpha$ = a value at a standard normal distribution equal to the level of significance α

Thus, the sample size required for research on the relationship between pornography addiction and cognition, which is stated in the comparative journal as learning achievement is:

$$n = 2((1.64\sqrt{(2\times0.72682\times0.27318)}+0.84\sqrt{((0.90141\times0.0986)+(0.55224\times0.44776)}))/((0.90141-0.55224)))$$

$$n = 2\ ((1.64\sqrt{0.3971}+0.84\sqrt{(0.08887+0.24727)})/0.34917)$$

$$n = 2 \times 21$$

$$n = 42 \text{ respond}$$

The estimated minimum number of samples needed to find a relationship in the study with a cross-sectional design was 42 respondents.

Inclusion and Exclusion Criteria

Case Inclusion Criteria:

1) Young adult respondents, namely the sample aged 18 to 24 years.36,38
2) Young adult respondents who are willing to fill out an online questionnaire.

Case Exclusion Criteria:

1) The sample was not a young adult age category, i.e. < 18 years old or > 24 years.36,38
2) Young adult respondents who are not willing to fill out the online questionnaire, or do not fill out the complete online questionnaire.

Data were taken primarily, through questionnaires of respondents who met the inclusion/exclusion criteria as a research sample.

The data obtained will be categorical. Microsoft Excel 2010 is a computer electronic program that will be used for tabulation of data. SPSS that will be used for statistical data analysis.

RESULT AND DISCUSSION

Data Demographics

This study has a total sample of 80 people. A total of 19 people were excluded because they did not fill out the questionnaire completely and were > 24 years old. So that there are 61 people left to be analyzed. The demographic characteristics are listed in table 1.

Tabel 1. Demographic Data

Variable		N (person)	Percentage
Gender	Male	38	62.3%
	Women	23	37.7%
Age (years)	18 – 19	4	6.6%
	20 – 24	57	93.4%
Length of duration of pornography (Hours/week)	No excess	58	95.1%
	Excess	3	4.9%
Pornography addiction	No	39	63.9%
	Ya	22	36.1%
Cognitive impairment	No	46	75.4%
	Ya	15	24.6%

The demographic characteristics of this study as many as 62.3% are male. The most age group (93.4%) was 20 – 24 years old. The group with the most pornography duration (95.1%) was the length of the duration of no excess. The largest group (63.9%) were not addicted to pornography. The largest group was no cognitive impairment (75.4%).

Table 2. Sex Relationship with Pornography Addiction

Jenis Kelamin	**Adiksi Pornografi**		**Total**	**Nilai P**	**OR**
	Tidak	**Ya**			
Laki-laki	16	22	38	0.000	32.471 95% CI (3.991 – 264.183)*
Perempuan	23	0	23		

The sample of men who experienced pornography addiction was 57.9%. Gender was significantly associated with pornography addiction (p-value = 0.000; odds ratio [OR] 32,471; 95% confidence interval [CI95] 3,991 – 264,183)

Table 3. The Relationship of Age to Pornography Addiction

Usia	**Adiksi Pornografi**		**Total**	**Nilai P**	**OR**
	Tidak	**Ya**			
18 – 19	4	0	4	0.158	0.313 95% CI (0.034 – 2.853)*
20 – 24	35	22	57		

Ages 20-24 years old who experience pornography addiction as much as 38.6%. The Fisher's Exact test showed no meaningful association between age and pornography addiction (p-value = 0.158; odds ratio [OR] 0.313; 95% confidence interval [CI95] 0.034 – 2.853).

Table 4. The Long-Term Relationship of Pornography with Pornography Addiction

Excessive pornography duration	Pornography Addiction		Total	P value	OR
	No	Yes			
No	38	20	58	0.293	3.8 95% CI (0.32 – 44.51)
Ya	1	2	3		

The duration of excess pornography who experienced pornography addiction was 66.7%. The duration of non-excessive pornography who experienced pornography addiction was 34.5%. The Fisher's Exact test showed no meaningful association between the duration of excess pornography and pornography addiction (p-value = 0.293; odds ratio [OR] 3.8; 95% confidence interval [CI95] 0.32 – 44.51)

Table 5. The Relationship of Pornography Addiction to Cognitive Impairment

Pornography Addiction	Cognitive Impairment		Total	P value	OR
	No	Yes			
No	37	2	39	0.000	26.72 95% CI (5.09 – 140.17)
Ya	9	13	22		

A sample of pornography addiction with cognitive impairment was 59.1% Pornography addiction was significantly associated with cognitive impairment (p-value = 0.000; odds ratio [OR] 26,722; 95% confidence interval [CI95] 5,094 – 140,171).

The results showed a statistically significant relationship between sex and pornography addiction (p-value = 0.000; odds ratio [OR] 32,471; 95% confidence interval [CI95] 3,991 – 264,183), where the sample who experienced pornography addiction were all male. Research conducted by Hald showed that more men than women watched pornography in the last 6 months, 1 month, 1 week, and 24 hours before filling out a questionnaire ($p < 0.001$)42. This data is supported by Bloemers, explaining that men generally have higher levels of testosterone (T) than women, where testosterone is associated with sensitivity to sexual cues, which shows a significant increase after exposure to sexual stimuli or sexual targets (Dawson & Chivers, 2014).

The results did not show a statistically significant association between age and pornography addiction (p-value = 0.158; odds ratio [OR] 0.313; 95% confidence interval [CI95] 0.034 – 2.853), the sample who experienced pornography addiction were all aged 20 – 24 years. The statistically meaningless relationship between age and pornography addiction was caused by an age category that was too narrow, while Price's study used a young adult age category of 18–26 years50. Price's study showed a statistically significant relationship between age and pornography use (p-value: < 0.001), and an increase in pornography use over the years (1973-2012) with the largest age category being young adults (18–26 years)50. The factors that play a role are the increase in internet use and the "triple A" (Access, Affordability, Anonymity)

factor51. APJII data in 2017 shows that internet users aged 19 – 34 years are more than 13 – 18 years old 52, explaining the reason why pornography addiction is more experienced by 20-24 year olds.

The results did not show a statistically significant relationship between the length of duration of pornography and pornography addiction (p-value = 0.293; odds ratio [OR] 3.8; 95% confidence interval [CI95] 0.32 – 44.51). The frequency of pornography addiction was higher at the duration of excessive pornography (67%) compared to the duration of non-excessive pornography (34%). This data is supported by Sarah's research in 2016 which explains the reason for the statistically meaningless relationship between duration and pornography addiction, namely the existence of internet pornography addiction pathways that are not related to the duration of internet pornography44. Sarah's 2017 study of 830 samples in North America found an average duration of a recreational profile of 24 minutes/week, a highly distressed non-compulsive profile of 16.74 minutes/week, a compulsive profile of 110.07 hours/week (p-value = <0.001), stating that internet pornography addiction was more related to distress than duration43. Peter's study of 962 Dutch youth explains that the greater the frequency and duration of pornography, the more it leads to pornography addiction.

The results of this study showed a statistically significant relationship between pornography addiction and cognitive impairment (p-value = 0.000; odds ratio [OR] 26,722; 95% confidence interval [CI95] 5,094 – 140,171). The frequency of cognitive impairment was higher in the sample with pornography addiction (59%) than in the sample without pornography addiction (5%). This data is supported by Laier's research using the IGT method, showing that the process of sexual images and sexual arousal interfere with working memory, as well as causing neglectful behavior20. This data is also supported by Hilton and Watts, stating that there are similarities between pornography addiction patients and hypofrontal syndrome patients (impulsivity, compulsivity, emotional labile, and attention deficit)16, where consideration is one of the cognitive aspects in the Gibson test (Gibsontest.com, 2017; Moore & Miller, 2018).

The weakness of the current study is that the age range is not wide so the significance of the relationship between different age groups and pornography addiction cannot be known. The study also did not examine the age at which they were first exposed to pornography, and young adult learning and work behaviors, so it may confuse the results of the relationship between pornography addiction and cognitive impairment.

For further research, it is necessary to collect data on relevant confounding factors in the relationship between pornography addiction and cognitive impairment, as well as research on different age categories, to obtain more accurate research results on the relationship between pornography addiction and cognition.

CONCLUSION

The findings indicate that pornography addiction is significantly associated with cognitive impairment (P = 0.000; OR = 26.72), likely due to interference from sexual stimuli and arousal with working memory, judgment, and behavior regulation, which may lead to neglectful actions. Additionally, there is a significant relationship between sex and pornography addiction (P = 0.000; OR = 32.47), with males showing higher susceptibility, potentially linked to higher testosterone levels and increased sensitivity to sexual cues. In

contrast, no statistically significant relationship was found between age and pornography addiction (P = 0.158; OR = 0.31), possibly due to the narrow age range and the dominance of participants aged 20–24 years, who may have greater internet exposure than those aged 18–19 years. Similarly, no significant relationship was observed between the duration of pornography use and addiction (P = 0.293; OR = 3.8), suggesting that addiction may be more strongly influenced by psychological distress rather than duration alone, although excessive use still appears to increase risk. Future research should involve broader and more diverse age groups, incorporate longitudinal designs to clarify causal relationships, and examine additional psychological and neurobiological factors—such as distress, impulsivity, and executive function—to better understand the mechanisms underlying pornography addiction and its cognitive effects.

REFERENCES

Blais-Lecours, S., Labadie, C., & Bergeron, S. (2017). Profiles of cyberpornography use and sexual well-being in adults. *Journal of Sexual Medicine*, 14(1), 78–85. https://doi.org/10.1016/j.jsxm.2016.10.016

Blais-Lecours, S., Vaillancourt-Morel, M., Sabourin, S., & Godbout, N. (2016). Cyberpornography: Time use, perceived addiction, sexual functioning, and sexual satisfaction. *Cyberpsychology, Behavior, and Social Networking*, 19(11), 649–655. https://doi.org/10.1089/cyber.2016.0364

Bőthe, B., Tóth-Király, I., Zsila, Á., Demetrovics, Z., Griffiths, M. D., & Orosz, G. (2018). The development of the Problematic Pornography Consumption Scale (PPCS). *The Journal of Sex Research*, 55(3), 395–406. https://doi.org/10.1080/00224499.2017.1291798

Chowdhury, M. R. H. K., Kabir, R., Perera, N. K. P., & Kader, M. (2018). Does addiction in online pornography affect behavioral patterns of undergraduate students in Bangladesh? *International Journal of Health Sciences*, 12(3), 67–74.

Clark, D. (2015). *Bloom's taxonomy of learning domains: The cognitive domain* [Internet].

Dawson, S. J., & Chivers, M. L. (2014). Gender differences and similarities in sexual desire. *Current Sexual Health Reports*, 6(4), 211–219. https://doi.org/10.1007/s11930-014-0027-5

Gibson, K. (2008–2017). *A guide to interpreting the Gibson test cognitive processing skills assessment*.

Gibsontest.com. (2017). *The Gibson test of cognitive skills* [Internet].

Gorwood, P., Blanchet-Collet, C., Chartrel, N., Duclos, J., Dechelotte, P., Hanachi, M., et al. (2016). New insights in anorexia nervosa. *Frontiers in Neuroscience*, 10, 1–21. https://doi.org/10.3389/fnins.2016.00256

Haryani, M. R., & Syukur, Y. (2012). The impact of pornography on student behavior and the efforts of the supervisor to overcome it. *Counselor*, 1(2), 1–3.

Hassan, H. (2018). *The good, the bad, the ugly: Positive and negative effects of pornography in Irish males*. DBS.

Kühn, S., & Gallinat, J. (2014). Brain structure and functional connectivity associated with pornography consumption. *JAMA Psychiatry*, 71(7), 827–834. https://doi.org/10.1001/jamapsychiatry.2014.93

Mardhatillah, A. (2017). Youth pornography exposure: Addiction screening test and treatment recommendation. *International Journal of Scientific Research*, 7(8), 10–14.

Mestre-Bach, Gemma, & Potenza, Marc N. (2023). Loneliness, pornography use, problematic pornography use, and compulsive sexual behavior. Current Addiction Reports, 10(4), 664–676.

Moore, A. L., & Miller, T. M. (2018). Reliability and validity of the revised Gibson test of cognitive skills. *Psychology Research and Behavior Management*, 11, 25–35. https://doi.org/10.2147/PRBM.S152781

Prause, N., Steele, V. R., Staley, C., Sabatinelli, D., & Hajcak, G. (2015). Modulation of late positive potentials by sexual images. *Biological Psychology*, 109, 192–199. https://doi.org/10.1016/j.biopsycho.2015.06.005

Price, J., Patterson, R., Regnerus, M., & Walley, J. (2016). Changing attitudes and behaviors related to pornography since 1973. *The Journal of Sex Research*, 53(1), 12–20. https://doi.org/10.1080/00224499.2014.1003773

Suyatno, T. (2015). The influence of pornography on student learning behavior. *Journal of Dompet Dhuafa Education*, 1, 1–12.

Stark, Rudolf, Klucken, Tim, Potenza, Marc N., Brand, Matthias, & Strahler, Jana. (2018). A current understanding of the behavioral neuroscience of compulsive sexual behavior disorder and problematic pornography use. Current Behavioral Neuroscience Reports, 5(4), 218–231.

Unicef Indonesia. (2017). *Recent study: Most Indonesian children are already online, but many are still unaware of the potential risks* [Internet].