



# The Adverse Effect of Gaming Disorder on the Family System in the Society

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## Abstract

**BACKGROUND:** The Internet has been a part of life and the development of technology. Internet addiction is one of the problems among adolescents, especially in Indonesia. Family dysfunction is thought to be a factor causing Internet addiction in adolescents. Family cannot always supervise adolescents, and adolescents are required to have good self-control to avoid problematic gaming behavior and online game addiction. If not taken seriously, game addiction can interfere with the physical and mental health of adolescents.

**AIM:** This study aimed to identify the relationship between family functioning and Internet gaming disorder among adolescents in Aceh. Currently, Aceh is the only province in Indonesia implementing sharia (the Islamic law).

**METHODS:** This was a quantitative study with a descriptive correlational method. The samples of this study were 157 male senior high school students. This research was conducted from January to April 2021. Data were collected by a self-report questionnaire and analyzed using the logistic analysis to identify the correlation between family functioning and Internet gaming disorder.

**RESULTS:** The results showed that family functions such as communication functions ( $p = 0.034$ ), affective engagement ( $p = 0.006$ ), and behavioral control ( $p = 0.000$ ) were significantly related to Internet gaming disorders in adolescents. This assumption is evidenced by the results of statistical tests that show a value ( $<0.05$ ). While the problem-solving function ( $p = 0.916$ ) and the general function ( $p = 0.606$ ) obtained a significant value ( $>0.05$ ) so it can be concluded both of these family functions were not related to Internet gaming disorder.

**CONCLUSION:** The family functions are significantly related to Internet gaming disorders in adolescents. Maximizing family functions is one solution to prevent Internet gaming disorders in adolescents.

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## Introduction

Internet use is high among adolescents [1], [2]. Among students in Southeast Asia, the prevalence of severe problematic Internet use/Internet addiction ranged from 0% to 47.4%, whereas the prevalence of Internet overuse/possible Internet addiction ranged from 7.4% to 46.4%. The problematic Internet users also reported the presence of disturbance in sleep (26.8%), daytime sleepiness (20%), and eyestrain (19%) [3]. Indonesia is one of the countries with huge Internet addiction.

The number of adolescents in Indonesia is based on citizen population projection in 2015 (age 10–24 years old), reaching more than 66 million, or 25% of Indonesian citizens of 255 million lives [4]. Based on the survey in 2018 conducted by the Indonesian Association of Internet Service providers, Asosiasi Penyelenggara Jasa Internet Indonesia (APJII), the penetration of Internet usage from 2017 is 143 million

lives, and in 2018, it reached 171 million lives. The penetration of Internet users from the age group of 15–19 years old in Indonesia, 91% are Internet users.

The increase of Internet use could lead to Internet addiction [5]. However, many studies found that online game has many negative impacts, especially for adolescents [6]. The World Health Organization (WHO) recently designated “Gaming Disorder” as a new diagnosis in the 11<sup>th</sup> final revision of the International Classification of Diseases (ICD-11) [7]. Gaming disorder was included in the latest revision of the International Classification of Diseases (11<sup>th</sup> ed.) [8]. Online sociality and self-presentation are positively associated with drinking [9].

Family is a significant factor contributing to adolescent behavior including Internet use behavior that leads to Internet addiction. The presence of a dysfunctional and high-conflict family environment may increase the likelihood of developing various forms of adolescent pathological behavior including Internet gaming addiction [10], [11]. Moreover, several studies

also report the importance of family for preventing Internet gaming addiction, the studies found that parent–child connectedness and positive perceptions of the family environment were protective against later problem gaming and that greater warmth in the family environment was associated with decreases in problem gaming [12], [13].

Then, the presence of conflict among family members is also related to adolescent behaviors. Adolescents from conflict families are four times more likely to be involved in risk-taking behavior (RTB) [14]. It means that adolescents need more support from family during this stage of life. Lack of social support at this stage of development can intensify the feelings of loneliness or social isolation that often arise in adolescence [15]. The family could contribute to solving this problem [16], [17]. Therefore, this study aimed to explore the relationship between family functioning and Internet gaming disorder among adolescents in Aceh, Indonesia. The context of Aceh added new insight into the issue as it is the only province in Indonesia implementing Islamic law and the majority of Islamic scholars agree that online game is forbidden for Muslims. The results of this current study are expected to have a significant contribution in developing an appropriate intervention program for preventing RTB related to Internet use, especially among adolescents. For the community, this research can provide information related to Internet gaming disorders in adolescents and efforts to overcome them.

## Methods

### Study design

This is a quantitative study employing a descriptive correlative method. The main objective is to identify the relationship between family functions and Internet gaming disorder among adolescents. The study was conducted in senior high school in Banda Aceh, the school was selected based on the previous study which found that 40.3% of respondents from that school were addicted to online games [18]. The population used in this study was all male students in classes X and XI, the researcher only included more males than females play video games and develop problems with gaming [19]. Based on initial data collection at the administrative section of the school on February 25, 2020, the total number of male students in grades X and XI was 223 students. The sample size was 157 students.

### Measures

Data collection was conducted using a self-report questionnaire. The questionnaire consists of three parts (A, B, and C). Part A includes respondents' demographic data (age, class, father's occupation,

and father's educational background). Part B covers the McMaster Family Assessment Device (FAD) [20]. The FAD questionnaire comprises 53 questions about family functions consisting of seven domains: problem-solving, communication, roles, affective response, affective involvement, behavior control, and general functions. This is a Likert scale questionnaire with four possible answers, ranging from strongly agree (1) to strongly disagree (4). The FAD looks at the mean value for each subdomain as a whole, with a range of 1–2 = functioning well and 3–4 = not functioning properly [19]. Based on the previous study, this instrument is valid ( $r = 0.72\text{--}0.92$ ). Part C is the standard questionnaire comprising nine items Internet Gaming Disorder Scale to determine the level of Internet gaming disorder based on the following criteria: preoccupation aspect (item 1), tolerance aspect (item 2), withdrawal aspect (item 3), the persistence aspect (item 4), escape aspect (item 5), problems aspect (item 6), deception aspect (item 7), displacement aspect (item 8), and conflict aspect (item 9). The nine items are dichotomous items (yes/no). The assessments classify respondents as normal gamers ( $x \leq 2$ ), risky gamers ( $2 \leq x \leq 4$ ), and disordered gamers ( $x \geq 5$ ). Based on the previous study, the 9-item Internet Gaming Disorder Scale showed a valid result ( $r = 0.93$ ). Data collection procedures include, the researcher approached the school administrator by phone to get permission for data collection. The school administrator then provided the list of male student names and sent it to the researcher. Later, the students were selected using simple random sampling, and the researchers contacted the selected ones by phone to explain the research and confirm the respondent's participation in this study. The participation was voluntary, and the consent form was administered through a Google Form.

### Analysis

This study examined the association between two variables, family functioning, and Internet gaming disorder. Descriptive statistics (percentage, mean, and number) were used to report the demographic characteristics, family functioning, and Internet gaming disorder. Data analysis and data testing used logistic analysis to identify the relationship between family functioning and Internet gaming disorders. Data are processed using the SPSS device.

### Ethical consent

The Research Ethics Committee of Faculty of Nursing, Universitas Syiah Kuala, Aceh, Indonesia, approved this study, with approval number: 111033220620. Then, before participating in this study, the students were given detailed information about the research and confidentiality will be guaranteed. Written consent was obtained from participants' parents.

## Result

### Respondents characteristics

Demographic data of respondents in this study include age, grade, father's occupation, and father's educational background. The demographic data of the respondents are provided in Table 1.

**Table 1: Respondent characteristics**

Serial number	Characteristics	Frequency (%)
1	Age	
	Early teens	56 (35.7)
2	Late teens	101 (64.3)
	Grade	
3	Tenth grade	74 (47.1)
	Eleventh grade	83 (52.9)
4	Father occupation	
	Government employee	25 (15.9)
	Nongovernment employee	89 (56.7)
5	Other	43 (27.4)
	Father educational background	
	Elementary school	28 (17.8)
	Junior high school	34 (21.7)
	Senior high school	66 (42.0)
	Diploma-3	1 (0.6)
6	Bachelor degree	18 (11.5)
	Master degree	7 (4.5)
	Doctoral degree	3 (1.9)

Table 1 shows that most of the respondents were late teens (64.3%), and the majority of them were in eleventh grade (52.9%). In terms of father's occupation, nongovernment employee was the most common (56.7%), and the majority of father's educational background was senior high school (42.0%).

### The relationship between family function and internet gaming disorder

The family has a very important function and role in educating and directing family members, and also socializes the values and norms of society. One of the efforts that can be done to revitalize family functions in dealing with children addicted to online games, parents must have knowledge about the psychological condition of their children. Therefore, the table below shows the results of the logistic analysis of the relationship between family functions and Internet game disorders. Logistic analysis was used to identify the correlation between family functioning and Internet gaming disorder. This result is shown in Table 2.

**Table 2: The relationship between family function and Internet gaming disorder**

Predictors	B	OR	p	95% CI	
				Lower	Upper
Problem solving function	0.425	0.654	0.916	0.000	1781.588
Communication function	3.367	0.034	0.034	0.002	0.772
Role function	3.326	7.814	0.012	2.098	8.686
Affective response function	4.614	10.885	0.004	4.213	5.979
Affective engagement function	5.386	18.418	0.006	4.518	8.290
Behavioral control function	6.179	22.306	0.000	28.808	4.916
General function	2.104	0.122	0.606	0.000	65.363
Constant	6.275	0.002	0.000		

OR: Odds ratio, CI: Confidence interval.

Table 2 shows that the communication function ( $p = 0.034$ ), role function ( $p = 0.012$ ), affective response function ( $p = 0.004$ ), affective engagement function ( $p = 0.006$ ), and behavior control function ( $p = 0.000$ ) obtained significant values ( $<0.05$ ), so it

can be concluded that family functions are significantly related to Internet gaming disorder. While the problem-solving function ( $p = 0.916$ ) and the general function ( $p = 0.606$ ) obtained a significant value ( $> 0.05$ ) so it can be concluded both of these family functions were not related to Internet gaming disorder. Because the value of B is positive, family function is positively related to Internet gaming disorders in adolescents. Family function as affective involvement has an 18.4 times chance of preventing Internet gaming disorders in adolescents (OR 18.418 95% CI 4.518–8.290).

## Discussion

The results showed that family functions such as communication functions, affective involvement, and behavioral control were significantly related to Internet gaming disorders in adolescents. This assumption is evidenced by the results of statistical tests that show a value ( $<0.05$ ). Maximizing family functions is one solution to prevent Internet gaming disorders in adolescents. The family has continuous interactions with adolescents, and family functioning has a significant contribution in preventing Internet gaming disorder. The warmth of familiarity in the family protects against RTB. Parents have an important influence in monitoring and advising adolescents on Internet use to decrease adolescents' risk of developing Internet gaming disorder [19]. Internet addiction was significantly associated with higher family income, greater screen time, always online status, and greater duration of Internet use per week [20]. The excessive use has also been associated with a loss of control over Internet use, social dysfunctions caused by a desire to be longer online, academic disturbance or work performance due to neglecting activities, and negative health consequences such as disrupted sleep from spending too much time online [21]. A meta-analysis of 57 studies conducted found that parental monitoring is associated with decreased gaming time and sexual behavior in adolescents [22]. Furthermore, a survey of 1800 adolescents in South Korea revealed that parental monitoring might be effective in reducing problematic mobile game use [23].

There is another finding that states excessive affection in the parent-child relationship leads to a more tolerant attitude toward the child, which leads to a permissive parenting style, so the adolescents in this household have a higher level of online gaming addiction [24].

The previous study also suggested that the communication frequency regarding Internet use and the quantity of time spent together were not associated with adolescent Internet addiction, but that the communication quality was correlated with Internet addiction [25]. This data showed that quality is more

important than the quantity of interaction between family and adolescents. Another study also concluded that good family function improves academic performance and decreases Internet addiction of adolescents, emphasizing that family function plays a crucial role in meeting adolescents' needs, while family conflict and no family cohesion were the negative predictors of RTB [26].

However, it is important to note that the nature of the relationship between family functioning, Internet gaming disorder, and depressive problems can be complex and dynamic. In particular, some research has shown that poor quality family functioning is prospectively associated with a broad range of psychological difficulties, which, in turn, may lead to a higher risk for the onset of Internet addiction [27].

This current study also supports a previous study that suggested adolescent Internet addiction and substance use experience shared similar family factors, indicating that Internet addiction and substance use should be considered in the group of behavioral problem syndromes. Hence, it is necessary to develop a family-based preventive approach for Internet addiction [28]. The family approach is considered an effective strategy for preventing RTB of adolescents, and the prevention programs should acknowledge not only the importance of the quality of parental monitoring in the development of pathological symptoms of and the parent-child relationship but also the importance of setting rules about Internet use and its appropriate consequences [29].

In terms of health, addiction to online games causes the health of teenagers to decline. Adolescents who are addicted to online games have weak immune systems due to the lack of physical activity, lack of sleep, and often late eating [30]. For this reason, it is important for people who are around teenagers (significant others) to understand their potential, talents, and interests in terms of distraction in preventing online game addiction. Efforts are made to prevent playing online games by giving advice, arguments, persuading, and exploring until in the form of coercion [31]. The online games in question are Counter-Strike, Lost Saga, Point Blank, World of Warcraft, Call of Duty, RF Online, AION, and Gunbound. In addition to violence, this online game is also considered to contain elements of pornography and gambling that can affect children's growth. One of the effects of playing online games too often is "addiction," a condition known as gaming disorder. When a person experiences a gaming disorder, there are functional and structural changes in the nervous system, especially in the system that regulates feelings of pleasure, learning, and motivation. This study may have some limitations. One of which is the distribution of the respondents' Internet use, which mostly fell into the normal gamers category. However, we adjusted this data by merging risky and disorder gamers. Another limitation is that family functioning and Internet game use are perceived solely based on

adolescents' self-reported data and no information from the parent's perspective. Hence, further studies should consider including parents' perspectives about family functioning and Internet use.

## Conclusion

The family functions are significantly related to Internet gaming disorders in adolescents. Maximizing family functions is one solution to prevent Internet gaming disorders in adolescents.

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### *Clinical implications*

This study has a significant contribution to developing a prevention program for decreasing the prevalence of Internet game disorder among adolescents. The results of this study indicated the importance of a family-based program to prevent Internet gaming disorder among adolescents so that the program will be more effective and appropriate.

## References

1. Faltýnková A, Blinky L, Ševčíková A, Husarova D. The associations between family-related factors and excessive internet use in adolescents. *Int J Environ Res Public Health*. 2020;17:1754. <https://doi.org/10.3390/ijerph17051754> PMID:32182673
2. Kuss DJ, Griffiths MD, Binder JF. Internet addiction in students: Prevalence and risk factors. *Comput Hum Behav*. 2013;29:959-66. <https://doi.org/10.1016/j.chb.2012.12.024>
3. Balhara YP, Mahapatra A, Sharma P, Bhargava R. Problematic internet use among students in South-East Asia: Current state of evidence. *Indian J Public Health*. 2018;62:197-210. [https://doi.org/10.4103/ijph.IJPH\\_288\\_17](https://doi.org/10.4103/ijph.IJPH_288_17) PMID:30232969
4. Badan Pusat Statistik. *Human Resources and Culture In*. Jakarta: Badan Pusat Statistik; 2013.
5. Sutrisna IP, Ardjana IG, Supriyadi S, Setyawati L. Good family function decrease internet addiction and increase academic performance in senior high school students. *J Clin Cult Psychiatry*. 2020;1:28-31.
6. Eklund L, Roman S. Do adolescent gamers make friends

- offline? Identity and friendship formation in school. *Comput Hum Behav.* 2017;73:284-9.
7. World Health Organization (WHO). ICD-11 for Mortality and Morbidity Statistics.
  8. Stevens MW, Dorstyn D, Delfabbro PH, King DL. Global prevalence of gaming disorder: A systematic review and meta-analysis. *Aust N Z J Psychiatry.* 2021;55:553-68. <https://doi.org/10.1177/0004867420962851>  
PMid:33028074.
  9. Svensson R, Johnson B. Internet use and adolescent drinking: Does it matter what young people do online? *Drug Alcohol Depend.* 2020;213:108138. <https://doi.org/10.1016/j.drugalcdep.2020.108138>  
PMid:32603977.
  10. Swaim RC, Stanley LR. Effects of family conflict and anger on alcohol use among American Indian students: Mediating effects of outcome expectancies. *J Stud Alcohol Drugs.* 2018;79:102-10. PMid:29227238.
  11. Schneider LA, King DL, Delfabbro PH. Family factors in adolescent problematic internet gaming: A systematic review. *J Behav Addict.* 2017;6:321-33. <https://doi.org/10.1556/2006.6.2017.035>  
PMid:28762279
  12. Liao AK, Choo H, Li DD, Gentile DA, Sim T, Khoo A. Pathological video-gaming among youth: A prospective study examining dynamic protective factors. *Addict Res Theory.* 2015;23:301-8. <https://doi.org/10.3109/16066359.2014.987759>
  13. Zhu JJ, Zhang W, Yu CF, Bao ZZ. Early adolescent Internet game addiction in context: How parents, school, and peers impact youth. *Comput Hum Behav.* 2015;50:159-68. <https://doi.org/10.1016/j.chb.2015.03.079>
  14. Hamid SH, Nawi AB. Family characteristics associate with risk taking behaviour among urban and rural adolescents in two districts in Selangor. A comparative study. *Procedia Soc Behav Sci.* 2013;91:581-7.
  15. Laursen B, Hartl AC. Understanding loneliness during adolescence: Developmental changes that increase the risk of perceived social isolation. *J Adolesc.* 2013;36:1261-8. <https://doi.org/10.1016/j.adolescence.2013.06.003>  
PMid:23866959.
  16. Matejevic M, Jovanovic D, Ilic M. Patterns of family functioning and parenting style of adolescents with depressive reactions. *Procedia Soc Behav Sci.* 2015;185:234-9. <https://doi.org/10.1016/j.sbspro.2015.03.460>
  17. Ni X, Yan H, Chen S, Liu Z. Factors influencing internet addiction in a sample of freshmen university students in China. *Cyberpsychol Behav.* 2009;12:327-30. <https://doi.org/10.1089/cpb.2008.0321>  
PMid:19445631
  18. Bahagia, Satria B. Gambaran tingkat Kecanduan game online pada siswa kelas XII di SMA Negeri Banda Aceh. *JIM FKBP.* 2019;4.
  19. Waluyo A, Yona S. Correlation of family acceptance and peer support group toward sexual behavior risk on MSM with HIV/AIDS in Medan, Indonesia. *Enferm Clin.* 2019;29:189-93. <http://doi.org/10.1016/j.enfcli.2019.04.052>
  20. Epstein NB, Baldwin LM, Bishop DS. The McMaster family assessment device. *J Marital Fam Ther.* 1983;9:171-80.
  21. Dong G, Wang L, Du X, Potenza MN. Gender-related differences in neural responses to gaming cues before and after gaming: Implications for gender-specific vulnerabilities to Internet gaming disorder. *Soc Cogn Affect Neurosci.* 2018;13:1203-14. <http://doi.org/10.1093/scan/nsy084>  
PMid:30272247
  22. Neabel B, Fothergill-Bourbonnais F, Dunning J. Family assessment tools: A review of the literature from 1978-1997. *Heart Lung.* 2000;29:196-209.
  23. Gupta A, Khan AM, Rajoura OP, Srivastava S. Internet addiction and its mental health correlates among undergraduate college students of a university in North India. *J Fam Med Prim Care.* 2018;7:721-7. [http://doi.org/10.4103/jfmpc.jfmpc\\_266\\_17](http://doi.org/10.4103/jfmpc.jfmpc_266_17)  
PMid:30234044
  24. King DL, Delfabbro PH, Zwaans T, Kaptsis D. Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Aust N Z J Psychiatry.* 2013;47:1058-67. <http://doi.org/10.1177/0004867413491159>  
PMid:23719181
  25. Bleakley A, Ellithorpe M, Romer D. The role of parents in problematic internet use among US adolescents. *Media Commun.* 2016;4:24-34. <https://doi.org/10.17645/mac.v4i3.523>
  26. Collier KM, Coyne SM, Rasmussen EE, Hawkins AJ, Padilla-Walker LM, Erickson SE, et al. Does parental mediation of media influence child outcomes? A meta-analysis on media time, aggression, substance use, and sexual behavior. *Dev Psychol.* 2016;52:798-812. <https://doi.org/10.1037/dev0000108>  
PMid:26914217
  27. Jang Y, Ryu S. The role of parenting behavior in adolescents' problematic mobile game use. *Soc Behav Pers Int J.* 2016;44:269-82.
  28. Özgür H. Online game addiction among Turkish adolescents: The effect of internet parenting style. *Malaysian Online J Educ Technol.* 2019;7:47-68.
  29. Wu CS, Wong HT, Yu KF, Fok KW, Yeung SM, Lam CH, et al. Parenting approaches, family functionality, and internet addiction among Hong Kong adolescents. *BMC Pediatr.* 2016;16:130. <https://doi.org/10.1186/s12887-016-0666-y>
  30. Marzilli E, Cerniglia L, Ballarotto G, Cimino S. Internet addiction among young adult university students: The complex interplay between family functioning, impulsivity, depression, and anxiety. *Int J Environ Res Public Health.* 2020;17:8231. <https://doi.org/10.3390/ijerph17218231>  
PMid:33171742
  31. Yen JY, Yen CF, Chen CC, Chen SH, Ko CH. Family factors of internet addiction and substance use experience in Taiwanese adolescents. *Cyberpsychol Behav.* 2007;10:323-9. <https://doi.org/10.1089/cpb.2006.9948>  
PMid:17594255