

BASIC PSYCHOLOGICAL NEEDS AND FAMILY HARMONY AS PREDICTORS ON ADOLESCENT'S GAMING ONLINE

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ABSTRACT

This research involved 345 respondents aged 10 to 18 years from private schools in Jakarta and its surrounding areas, with the research aim of investigating the role of basic psychological needs and family harmony on adolescent's gaming online. Employing a quantitative approach, the BPNS-21 General Scale was utilized to measure basic psychological needs, FHS-5 to measure family harmony, and IOGAQ to measure the level of adolescent's gaming online. Direct effect analysis was conducted using SPSS 23 for classical assumption tests, and smartPLS 4 for correlation tests, hypothesis testing, and model evaluation. The results of this study indicate that separately and collectively, the fulfillment of basic psychological needs and family harmony correlate negatively with online gaming in adolescents.

Keywords: *basic psychological needs, family harmony, gaming online*

ABSTRAK

Penelitian ini melibatkan 345 responden berusia 10 hingga 18 tahun dari sekolah-sekolah swasta di Jakarta dan sekitarnya, dengan tujuan penelitian untuk mengetahui peran kebutuhan psikologis dasar dan keharmonisan keluarga terhadap *gaming online* pada remaja. Dengan menggunakan metode kuantitatif, BPNS-21 *General Scale* digunakan untuk mengukur kebutuhan psikologis dasar, FHS-5 untuk mengukur keharmonisan keluarga, dan IOGAQ untuk mengukur tingkat *gaming online*. Analisis efek langsung dilakukan dengan menggunakan SPSS 23 untuk uji asumsi klasik, dan smartPLS 4 untuk uji korelasi, uji hipotesis, dan evaluasi model. Hasil penelitian ini menunjukkan bahwa secara terpisah dan bersama-sama, pemenuhan kebutuhan psikologis dasar dan keharmonisan keluarga memiliki hubungan negatif dengan *gaming online* pada remaja.

Kata Kunci: *kebutuhan psikologis dasar, keharmonisan keluarga, gaming online*

1. INTRODUCTION

In line with technological advancements, numerous studies indicate that gaming online brings positive benefits, such as a supporter for career prospects, an educational tool, and even enhancing family communication patterns (Cendana, 2022; Pecchioni, 2016). Positive reinforcement is also gained through renowned educational institutions like Tarumanagara University, which granted a scholarship to Oliver Budi Wangge, an esports athlete who clinched a gold medal in the 2023 SEA Games in Cambodia in the Valorant Esports category (Admin, 2023). Nevertheless, gaming online also implies negative consequences that need attention, such as insufficient sleep, declining academic performance, exposure to violent or sexual content, reluctance to socialize in the real world, and even provoking conflicts within

families (Nikken & Jansz, 2006; Sugaya, 2019). A teenager with the initials MI went as far as murdering a friend with an iron hammer because MI felt humiliated after losing in an online game (Rachmawati, 2020).

However, it should be noted that a high level of involvement in gaming should not always be misunderstood as addiction in the context of gambling and/or alcohol (López et al., 2020). A total of 25,200 reviews were gathered containing references on how this game caused addiction is driven by different types of motivation (Kim et al., 2016). These reviews include nine keywords directly related to "addiction," and from these reviews, it is concluded that the term "addiction" used by gamers is actually in the sense of being "challenging," "entertaining," "friends and family," "game," "creative," "graphic/animation," "fun," "free of ads," and "time killer" (Balakrishnan & Griffiths, 2019). Gaming online is also closely associated with players' motivations, for example, players motivated by coping to reduce stress and enhance mood tend to choose shooter, action-adventure, and MMORPG genres (Kim et al., 2016; Hilgard et al., 2013). Those with motivations for social interaction to build relationships with friends tend to choose MOBA, MMORPG, role-playing, shooters, and real-time strategy games (Kim et al., 2016). And other types of motivations include recreation, interaction, coping, violent reward, fantasy, cognitive challenge, customization, and competition (López et al., 2020). From these findings, the researcher then concludes that the variables of gaming online are best measured based on gamers' perceptions of addiction, types of motivation, and also taking into account its pathological elements.

The positive and negative impacts in the dynamics of gaming online are clear in various aspects of life, especially among adolescents with socioeconomically affluent backgrounds. The researcher argues that adolescents from affluent family backgrounds can easily acquire many experiences that may not be available to those from lower economic backgrounds (Ganda et al., 2019). Generally, affluent parents are ambivalence toward the use of technology. They express concerns about its negative impacts but simultaneously value the ability to use technology as a useful skill (Molborn et al., 2022). As a result, this population is considered to have greater access to engage in gaming online in terms of devices, time, and funds.

The cognitive level during adolescence is still in the process of maturation, exposing adolescents in a vulnerable and uncertain position when it comes to determining time usage, maintaining focus, and selecting appropriate content (Przybylski et al., 2019; Konrad et al., 2013). Therefore, this research suggests a problem statement to examine deeper into the psychological variables influencing adolescent's cognitive maturity in the context of gaming online, which are: (a) Basic Psychological Needs and (b) Family Harmony. The objective is to quantitatively validate the role of basic psychological needs and family harmony on adolescent's gaming online. This will be further explained in the following paragraphs:

Gaming online is defined as an activity spent playing video games, the level of preoccupation, and the experience of withdrawal symptoms when not playing (Han, 2017). This type of gaming involves more than one player connected through the internet, and with excessive intensity, it can lead to gaming addiction for users (Mirabella & Tiatri, 2023). The level of gaming online addiction can be categorized into four levels [17]: (a) Recreational Level: At this stage, players play with intended purpose, such as entertainment. Players are able to stop playing video games once their goal is achieved; (b) At-risk Level: At this stage, players play for enjoyment, mild consequences have shown such as tired eyes or hands; (c) Problematic Use: At this stage, players will be playing repeatedly even after their goal is achieved. Withdrawal symptoms will appear when they stop to play video games; and (d) Fully Addict:

At this stage, players will constantly think about playing video games and find it difficult to divert their attention to other matters.

The clinical threshold to estimate the prevalence of mild addiction and severe addiction is determined by following factors: Longest time record to play online games (thinking about gaming all day), average days per week in playing online games (increasing gaming time), average hours per days in playing online games (escaping from real life), weekly expenditure for internet cafes, monthly expenditure for online games (relapse to gaming online influenced by environmental factors), time spent to do schoolwork (sacrificing important relationship), sleep deprivation (indicator that often arise due to excessive gaming online) (Jap et al., 2013).

Basic psychological needs is defined as an essential component for enhancing self-organization, adjustment, and development. Deci and Ryan argue that an individual's basic psychological needs consist of the need for autonomy, competence, and relatedness. When these three aspects are fulfilled, it has a positive impact on psychological development, integrity, and well-being (Ryan & Deci., 2000). Fulfilling the needs for competence, autonomy, and relatedness is largely correlate with fulfilling them through gaming online. By gaming online, players seek: (a) The need for autonomy by managing and controlling the game, (b) The need for competence by feeling successful in playing challenging video games, and (c) The need for relatedness by socializing with real or fictional characters. Therefore, it can be concluded that when an individual's basic psychological needs are unmet, they seek fulfilment through gaming online and this can increase the level of gaming online addiction.

H1: Basic psychological needs predict adolescent's gaming online.

Family harmony is defined as the social and psychological resilience of a family (Fauziah et al., 2021), involving relationships among family members, religious, togetherness, effective and constructive communication, respect, understanding, mutual trust, support, closeness, love, positive interactions, prioritizing the interests of the entire family (Sakunthala et al., 2017). Family harmony can enhance learning motivation through the comfort feeling perceived by the child within his/her family (Khadifa & Sugihen, 2018; Rahayu et al., 2013; Partiyem, 2016), increase spirituality (Herawati et al., 2019), and reduce teenage aggression (Saputri et al., 2014) and/or transgression (Respati et al., 2014). Less quality parent-child relationships are associated with increased gaming issues (Schneider et al., 2017).

Unfortunately, In Indonesia, the number of divorces is experiencing a significant increase, reaching one-fourth of the total number of marriages each year (BKKBN, 2015). This can jeopardize the development of adolescents who are in a vulnerable period for mental health issues, including stress, anxiety, and depression (Windarwati et al., 2020).

Literatures has reviewed the definition of family harmony and its impact on adolescent's mental well-being (Windarwati et al., 2020; Rozgonjuk et al., 2022; Wulaningsih & Krisnatuti, 2019), as well as how family harmony influences aggressive behavior on adolescents (Arifin et al., 2021; Rahayu, 2020), and how adolescent's mental development are to determine their behavior in gaming online. However, researcher has not found any existing theories or prior studies that directly correlate the variable of family harmony in the context of gaming online. To fill this gap, this study will explore the direct relationship between family harmony and gaming online on adolescents.

H2: Family harmony predicts adolescent's gaming online.

2. RESEARCH METHOD

The research design employs a quantitative method, cross-sectional with purposive sampling technique. The two independent variables in this study are basic psychological needs and family harmony, while one dependent variable is gaming online. Considering the fluency of the language used daily by the population of respondents focused on the research, all research instruments used the original scales in English and were not translated into the native language in Indonesia.

Participants

The number of respondents in this study is $N = 345$ (161 males and 184 females), with age range of 10-18 years (20%, $n = 84$ aged 10-12, 20%, $n = 159$ aged 13-15, and 60%, $n = 86$ aged 16-18). Respondents also completed a demographic questionnaire, evaluating their activities within the last six months where they all played at least one type of online game, most games played are Mobile Legends, PUBG, Valorant, Roblox, Minecraft, Fortnite, Brawl Star, Genshin Impact, FIFA, Animal Crossing New Horizons, Project Sekai, and Pokemon Go.

Furthermore, the demographic questionnaire representing the Basic psychological needs (BPN) variable 92.2%, $n = 318$ stated that they have acquired new skills, and 98%, $n = 338$ stated that they frequently communicate with friends. To represent the Family Harmony (FH) variable 84.1%, $n = 290$ stated that they often engage in discussions with their family, and 75.4%, $n = 260$ view their family as role models. To represent the gaming online variable respondents indicated playing online games for <1 hour per day (24.6%, $n = 85$), for 2-3 hours per day (30.4%, $n = 105$), for 3-4 hours per day (24.3%, $n = 84$), for 4-5 hours per day (5.5%, $n = 19$), for 5-6 hours per day (5.8%, $n = 20$), for 6-7 hours per day (2.0%, $n = 7$), and for >7 hours per day (6.4%, $n = 22$).

Measures

Basic Psychological Needs (BPN)

BPN - 21 general items from Deci and Ryan (2000) used to measure basic psychological needs. This scale assesses three aspects of needs: autonomy, competence, and relatedness. The cronbach's alpha (α) are 0,76 for autonomy, 0,67 for competence and 0,82 for relatedness. Respondents' answers range from 1 (not at all true) to 7 (very true). Examples of questions for the autonomy aspect include: "I generally feel free to express my ideas and opinions"; for the competence aspect: e.g. "People I know tell me I am good at what I do"; and for the relatedness aspect: e.g. "I get along with people I come into contact with."

Family Harmony

FHS - 5 items from Kavikondala et al. (2016) used to measure family harmony. This scale reflects the extent of family function, peace in interactions, and harmony within the family. Respondents' answers range from 1 (strongly disagree) to 5 (strongly agree), where higher scores indicate more functional family harmony. The internal consistency of the scale for the effective sample in this study is cronbach's alpha (α) = 0.90. The FHS-5 measurement is taken only from the adolescents' perceptions and does not include their parents' perceptions. The scale is represented by five measurement aspects: (a) Communication: e.g. "My family functions well for all members"; (b) Conflict resolution: e.g. "My family's day-to-day

interactions are peaceful"; (c) Patience: e.g. "Family members accommodate each other"; (d) Family identity: e.g. "I am proud of my family"; and (e) Quality time: e.g. "My family is harmonious."

Gaming Online

The Indonesian Online Game Addiction Questionnaire (IOGAQ – 7 items) by Beng et al. (2013) is used to measure gaming online. The questionnaire is already constructed on the criteria for pathological gambling from DSM-IV-TR (American Psychiatric Association, 2000) and the addiction criteria proposed by Griffiths. Respondents' answers indicate the frequency, ranging from 1 (never) to 5 (very often). The cronbach's alpha for this scale is $\alpha = 0.73$. Examples of questions in this scale include: "I think about online games all day long"; "Online games made my relationships with others (family, friends, etc.) problematic"; "Time spent playing online games made me lose sleep."

Procedure and Ethics

The ethical approval for this research was obtained on December 7, 2023, through the Ethics Review Board of Tarumanagara University (TUHREC) led by Dr. Riana Sahrani, Psi. These steps ensure that the research has undergone a thorough review and ethical evaluation. Data collection was carried out through a structured process following specific steps. Before distributing the survey, the researcher met with representatives from the survey locations to reach a mutual agreement. The main discussions focused on maintaining the confidentiality of the institution and student privacy, as well as the procedures for distributing the questionnaires. In every meeting, the researcher provided the survey permit from the Vice Rector I and the Research Ethics Clearance Certificate officially issued by Tarumanagara University.

The researcher prepared two Google Form links; the first link contained parental consent, and the second link contained the questionnaire to be filled by teenagers as the main respondents. The distribution of the questionnaire started on December 8, 2023, primarily involving middle and high school students from two private schools, and the other respondents were obtained through snowball sampling which includes several areas in West Jakarta, South Jakarta, Bumi Serpong Damai, and Alam Sutera. The distribution of questionnaires in the two private schools was carried out according to mutual agreement, where the schools allowed the questionnaires to be distributed either through parent representatives in each class or coordinated by the school. Each respondent had only one opportunity to fill out the questionnaire, and all participants, including schools, parents, and teenagers, were informed that the confidentiality of the survey was guaranteed, and participation was voluntary. They were also informed that they could withdraw from participation at any time without providing a reason, and there would be no consequences for that. The data was successfully collected on December 13, 2023, obtaining a total of 349 survey responses. Next, the researcher sorted the data that could be used, resulting in a total of 345 survey responses. After collecting the data, the responses on the Google Form were downloaded in Microsoft Excel format for further analysis. The data analysis method utilized SPSS 23 for variable description, classical assumption tests, and smartPLS 4 for correlation tests, hypothesis test, and model evaluation.

Data Analysis

The analysis was conducted using SPSS version 23, smartPLS version 4, and G* Power 3.1.9.7 software. Before starting the analysis, the classic assumption tests for parametric test requirements were tested, including normality tests, skewness, kurtosis, Shapiro-Wilk,

homoscedasticity, and multicollinearity. The skewness and kurtosis scores were beyond the threshold of +2 and -2, except for the kurtosis score of online gaming. The criteria of data from a normal population, namely Shapiro-Wilk for the basic psychological needs variable, were above the threshold of Sig. 0.05, while for the other two variables, they met the requirement of Sig. < 0.05. Furthermore, there were no violations of assumptions in the research data, where the variance of the independent variable was relatively constant with Sig. > 0.05, indicating that the homoscedasticity assumption was met. The correlation among research variables also has a low result, with VIF < 10, indicating no multicollinearity.

With assumption tests that do not meet the requirements, the study will proceed to search for correlation scores using the smartPLS program, which can handle complex relationships between variables without assuming a specific distribution pattern in the data. With the same concept, before analyzing correlation scores, the research will test whether the data has good validity, reliability, and discriminant validity. The validity test was conducted by examining the loading factor of each item and eliminating items with loading factor are below the score of 0.60 (Chin 2018). The reliability test was performed to measure the consistency of the data within its constructs, with CR scores > 0.70 and AVE scores > 0.50, indicating that the reliability requirements were met, except for the gaming online variable where the AVE score was slightly lower. Discriminant validity test was resulted in meeting the requirement, and this was accomplished through three tests: Fornell-Larcker criteria, cross-loading, both with the requirement that scores explaining the same variable are higher than it is to other variables, and the HTMT criteria which also met the requirement with the score < 0.90.

The data analysis continued to examine the correlation between variables using the bootstrapping method with 5000 iterations. The results revealed a correlation between each predictor variable and gaming online. The correlation is negative, and contribution is significant. Furthermore, the model was evaluated, and the regression score is $R^2 = 8.7\%$. The effect sizes for the basic psychological needs on online gaming fell into the moderate category ($F^2 < 0.15$), while the effect sizes for family harmony on online gaming were in the small category ($F^2 < 0.02$). Confidence intervals at a 95% level were reported for testing path coefficients between variables, and the results were found to be significant, indicating the interval does not contain zero.

3. RESULTS AND DISCUSSION

The results indicate that there are negative correlations and significant contribution between the main variables (basic psychological needs and family harmony separately, towards online gaming). With scores of -0.203 and -0.145 meaning that when the predictor variables increase, the dependent variable tends to decrease as much as the original sample's score (O). Results of this correlation and significance are shown in **Table 1**.

Table 1

Correlation and Significance Among Main Variables in The Total Sample (N = 345)

		O	M	STDEV	O/STDEVI	P
BPN	<-> Gaming	-0.203	-0.213	0.059	3.446	0.001
	Online					
FH	<-> Gaming	-0.145	-0.156	0.060	2.416	0.016
	Online					

Note. O = original sample, M = mean, STDEV = Standard deviation, T = T statistics /O/STDEV/, P = P values.

The R^2 score is 0.085 or 8.5%, indicating that basic psychological needs and family harmony collectively have a significant impact on gaming online, explaining 8.5% of the changes in the gaming online variable. This falls into the low impact level since the score is below 0,19. Results of the R^2 score with bias corrected (R-square adjusted) is presented in **Table 2**.

Table 2

Regression Model Evaluation R^2

	R-square	R-square adjusted
<i>Gaming Online</i>	0,087	0.085

F^2 shows how much variation in the dependent variable (gaming online) can be qualitatively explained by the independent variables (basic psychological needs and family harmony). **Table 3** presents the contribution of basic psychological needs and family harmony on adolescent's gaming online is significant, and the impact of basic psychological needs is considered moderate (below 0,15), and for family harmony it is considered small (below 0,15).

Table 3

Effect Size Model Evaluation F^2

	BPN	FH	Gaming Online
BPN			0.037
FH			0.019
<i>Gaming Online</i>			

The influence of basic psychological needs on online gaming ranges from the lowest score is -0.304 and the highest score is -0.069. This means that at a 95% confidence level, when the fulfillment of basic psychological needs increases, online gaming decreases within the range of -0.304 to -0.069. And at a 95% confidence level, when family harmony increases, online gaming decreases within the range of -0.246 to -0.013. **Table 4** describes the influence (path coefficient) between variables within a 95% confidence interval.

Table 4

Confidence Level 95%

	O	M	Bias	2,5%	97.5%
BPN <-> Gaming Online	-0.203	-0.213	-0.009	-0.304	-0.069
FH <-> Gaming Online	-0.145	-0.156	-0.011	-0.246	-0.013

Note. O = original sample, M = mean, lower limit = 2,5%, upper limit = 97,5%

Explanation of the correlation between variables indicates that basic psychological needs have a relatively stronger influence, although with the same direction of the relationship. This means that, although the role of basic psychological needs is stronger and the role of family harmony is weaker, both have the same direction in predicting online gaming in adolescents. An increase in the fulfillment of basic psychological needs and family harmony is predicted to decrease the level of online gaming in adolescents.

In the validity test, 18 out of 21 items on basic psychological needs were eliminated because the factor loading below 0.60 is considered invalid. The remaining three items (BPN8, BPN17, and BPN20) are all from the autonomy aspect, while items from the competence and relatedness aspects did not meet the validity criteria. This indicates the need for several considerations: (a) Concept evaluation, whether the measured concept is more related to autonomy than to competence or relatedness; (b) Instrument evaluation, whether items from the competence and relatedness aspects already measure what should be measured; (c) Cultural consideration, whether in this population, autonomy seen to be a very important aspect. Interestingly, in the demographic data reflecting the autonomy aspect, 92,2% respondents reported that they had learned new skills in the last six months. This indicates that within the characteristics of the studied population, the fulfillment of autonomy is highly valued.

Many researchers interpret the R^2 statistic as the most important measure of a model's predictive power. However, Hair (2019) argues that this interpretation is not entirely accurate. Instead, R^2 only indicates the extent to which the model can explain the variation in the sample data used for its construct (in-sample explanatory power). This statistic does not provide information about how accurate the model can predict data outside of that sample (out-of-sample predictive power). To address this concern, Samueli et al. (2016) proposed a series of procedures to predict out-of-sample data involving estimating a model not included in the sample analysis, known as a holdout sample. However, in this study, the proposed testing procedures will not yet be discussed.

The F^2 score in the context of Partial Least Squares Structural Equation Modeling (PLS-SEM) has become common and is recommended to be reported on scholarly journals. F^2 is often reported together with the R^2 to enhance a more comprehensive understanding of the predictive power of the model. F^2 provides additional information related to direct effect and moderation effect in the context of PLS-SEM. It is important to note that in versions 3 and 4 of smartPLS, the F^2 score is only available for direct effect and moderation effect and does not cover mediating effect correlation. Nevertheless, this research measures a direct effect correlation, so there are no issues with the program used. This is just an additional note for future research.

Reporting a 95% confidence level has become a norm and is also recommended on scholarly journals. The 95% confidence level provides an indication of our confidence in the parameter estimates in this study although it doesn't guarantee absolute certainty. However, it allows transparency and makes it easier for readers and other researchers to evaluate and interpret the results. For future research, confidence level reports enable comparisons between different study findings. Moreover, when two studies report confidence intervals for the same parameter, readers can assess the accuracy or stability of the results.

The findings of this study align with previous research where the fulfillment of basic psychological needs is a predictor of adolescents' gaming online. Additionally, this study

discovered that the family harmony variable is also a predictor of adolescents' gaming online. However, the family harmony variable has lower scores than the basic psychological needs variable, possibly because adolescents perceive self-identity and friendships as more essential than family. This aligns with Maslow's hierarchy of needs theory, which suggest that when individuals become teenagers, they prioritize love, loyalty, and self-esteem, which are factors related to basic psychological needs, over needs derived from family harmony. However, the role of the family has also proven to be significant. Therefore, future research is recommended to include other variables within the family variables, such as family function, family environment, perceived parenting styles, and/or parent adolescent communication.

Research on the adolescent population is crucial, but it also complex and challenging. One major obstacle faced by researcher is the difficulty in survey completion by adolescents and at the same time obtaining parental consent. This process not only takes longer but also requires coordination and communication that is hard to align between parents and their adolescent children. To align the adolescent-filled questionnaires with parent-filled consent, researchers requested parents and adolescents to write the respondent's name (i.e., the adolescent) on the questionnaire, resulting some participants of both sides withdraw to participate in the survey. These problems can limit the researcher's ability to conduct a study efficiently and comprehensively. Therefore, it is recommended that future research considers more effective data collection strategies and allocates more time to address these problems. It is important to remember that adolescence is a critical period in psychological transition, making further research in this population highly encouraged.

The researcher hopes that future studies will not only focus on quantitatively proving the role of the family in the context of gaming online. Instead, the research focus can be more practical, such as actions and knowledge needed by parents and adolescents in the context of gaming online. For example, how each family member divides their time between work, gaming and family, effective communication style between parents and their adolescent children, and understanding the values related to gaming online from both parental and adolescent perspectives.

The role of the family on adolescent's gaming online has been widely discussed in the media. However, researchers have not found a substantial number of studies that can specifically prove the correlation. To address the limitation of the currently available research, beside to continue researching family dynamics in the context of adolescent's gaming online, it is also recommended to make maximum efforts from all parties involved in distributing the research findings for publication. This will ensure the availability of information and making it accessible for the public and other researchers to seek for reference.

4. CONCLUSION AND RECOMMENDATION

The study's findings indicated that basic psychological needs have a negative correlation and a significant role on adolescents' gaming online. It means that adolescents whose basic psychological needs are fulfilled will have a lower risk of exposure to the negative impacts of gaming online addiction. Similarly, with family harmony, adolescents who perceive their families as harmonious will have a lower risk of exposure to the negative impacts of online gaming addiction. When basic psychological needs and family harmony are simultaneously fulfilled, it has a negative correlation and a significant role in reducing the level of gaming online addiction on adolescents.

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