



RESEARCH ARTICLE

# Beyond Screen Time: Parenting Styles, Psychological Well-Being, and Online Game Addiction among Indonesian Adolescents and Young Adults

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## Abstract

Online game addiction has become an important issue among young people in Indonesia, particularly within a cultural context where parenting remains highly influential in shaping psychological development. This study examined the relationship between parenting styles, psychological well-being, and online game addiction among individuals aged 15–30 years. It was hypothesized that parenting styles would be associated with online game addiction both directly and indirectly through psychological well-being. A quantitative cross-sectional design was used, involving 601 participants recruited through digital outreach on Instagram, Twitter, and Facebook with 519 final respondents. Data were collected using the Indonesian Online Game Addiction Questionnaire, the Parental Authority Questionnaire (PAQ), and Triwahyuni and Prasetio's 42-item Psychological Well-Being Scale. The findings showed that paternal and maternal parenting styles were negatively associated with psychological well-being. Psychological well-being also mediated the relationship between parenting styles and online game addiction, indicating that parenting may influence gaming behavior through its impact on psychological functioning. These results highlight the importance of considering both family dynamics and psychological well-being in understanding online game addiction among Indonesian young people.

**Keywords:** Indonesia; online game addiction; parenting styles; psychological well-being; young adults

## INTRODUCTION

Digitalization has made online gaming a common part of everyday life in Indonesia. Recent digital reports show that Indonesia has a rapidly expanding internet population, with more than 230 million internet users and an internet penetration rate of 80.5% by the end of 2025 (Kemp, 2025). In this context, online games are not merely entertainment media, but also social spaces where individuals seek enjoyment, achievement, competition, and connection (Ballou et al., 2024; Ballou & Deterding, 2024; Granic et al., 2014). However, when gaming becomes difficult to control, increasingly prioritized over other activities, and continued despite negative consequences, it may develop into problematic gaming behavior. The World Health Organization recognizes gaming disorder in the International Classification of Diseases 11th Revision as a pattern of gaming behavior characterized by impaired control, increasing priority given to gaming, and continued

gaming despite harmful consequences (World Health Organization, 2020). Therefore, online game addiction should be understood not only as excessive screen time, but also as a psychological and behavioral issue involving emotional regulation, self-control, family context, and well-being (Brand et al., 2019; Kuss et al., 2017; Pontes & Griffiths, 2015).

Recent scientific developments show that problematic gaming remains relevant among both adolescents and young adults. A systematic review and meta-analysis found that gaming disorder among adolescents has a pooled prevalence of 8.6%, indicating that gaming-related problems are a growing public health concern (Satapathy et al., 2025). Another meta-analysis among young adults found a pooled prevalence of Internet Gaming Disorder of 6.1%, suggesting that vulnerability does not end after adolescence and may continue into emerging adulthood (Gisbert-Pérez et al., 2026). Similar evidence also shows that gaming disorder remains a relevant concern among young populations and is associated with psychological distress, impulsivity, lower life satisfaction, maladaptive coping, and broader psychosocial vulnerability (Kim & Hormes, 2017; Kim et al., 2022; Kircaburun et al., 2019; Mihara & Higuchi, 2017; Paulus et al., 2018; Ropovik et al., 2023). This is important for the present study because individuals aged 15–30 are in a developmental period

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marked by identity exploration, emotional instability, academic or occupational pressure, and increasing independence from parents. These conditions may intensify the role of psychological well-being in shaping how individuals engage with online games (Goh et al., 2019; Hwang & Toma, 2021).

From a theoretical perspective, online game addiction can be explained through the Interaction of Person-Affect-Cognition-Execution model (I-PACE). This model explains that addictive behaviors develop from the interaction between personal characteristics, emotional responses, cognitive processes, and executive control (Brand et al., 2019). Within this framework, parenting style may function as an important contextual factor that shapes psychological vulnerability or resilience, especially in psychological conditions under which problematic gaming behavior may develop. In this study, parenting style is considered contextual because it represents the family background and relational climate in which individuals develop emotional regulation, coping patterns, and self-control. Parenting style refers to the emotional climate and behavioral pattern through which parents express warmth, control, autonomy support, responsiveness, and discipline. Family context has been shown to play an important role in the development of emotion regulation, particularly through parental emotional climate, parenting practices, and parent-child interaction patterns (Morris et al., 2007).. Positive parenting has also been linked to better health and well-being outcomes in young adulthood, suggesting that parenting experiences may have long-term implications beyond childhood and adolescence (Chen et al., 2019). Classical parenting theory distinguishes authoritative, authoritarian, and permissive styles, each of which may influence psychological development differently (Buri, 1991; Francis et al., 2021; Huang et al., 2024). Recent meta-analytic evidence also shows that parenting styles are associated with problematic internet use, supporting the relevance of parenting as a family-based contextual factor in digital problematic behavior (Niu et al., 2023). In the Indonesian context, supportive parenting has been shown to enhance adolescents' emotional well-being through the satisfaction of basic psychological needs, while thwarting parenting is associated with ill-being through psychological need frustration (Abidin et al., 2022). This explanation is also consistent with self-determination theory, which emphasizes the importance of autonomy, competence, and relatedness in psychological functioning (Deci & Ryan, 2000). Thus, parenting may influence online game addiction indirectly by shaping the individual's psychological well-being. Therefore, psychological well-being is positioned as a psychological mechanism that links family context with vulnerability to online gaming addiction.

Psychological well-being is central in this relationship because it reflects the individual's capacity to maintain positive self-evaluation, autonomy, environmental mastery, personal growth, purpose in life, and positive relations with others (Ryff, 1989; Triwahyuni & Prasetyo, 2021). Psychological well-being was selected as the mediator because it represents a broad psychological condition that includes autonomy, environmental mastery, self-acceptance, purpose in life, personal growth, and positive relations with others, making it more suitable for explaining general psychological functioning than narrower constructs such as loneliness, self-control, gaming motivation, or parental monitoring (Ryff, 1989; Ryff, 2013). Individuals with stronger psychological well-being are more likely to manage stress, regulate emotions,

exercise self-control, and cope adaptively with daily problems, whereas lower psychological well-being may reduce psychological resources needed to regulate negative affect and control gaming impulses (Brand et al., 2019; Morris et al., 2007). Conversely, individuals with lower psychological well-being may be more vulnerable to using online games as a form of escape, emotional compensation, or temporary reward (Goh et al., 2019; Kaya et al., 2024; Rho et al., 2018). This is consistent with the view that problematic gaming may develop when gaming is used as a maladaptive coping strategy to manage negative emotions or unmet psychological needs, rather than merely as entertainment (Brand et al., 2019; Kardefelt-Winther, 2014). In this sense, online gaming addiction is not understood merely as high gaming frequency, but as a problematic behavior involving impaired control, maladaptive emotional regulation, and continued gaming despite negative consequences. Recent studies support the importance of psychological and interpersonal mechanisms in digital addiction. Parenting style has been associated with Internet Gaming Disorder through psychological status such as attention problems (Chung et al., 2023), while positive and negative parenting styles have also been linked to internet addiction through interpersonal relationship problems (Guo et al., 2024). A recent systematic review further confirms that family variables, including positive parenting, poor parenting, parental monitoring, and family disharmony, are significantly connected to gaming addiction among children and adolescents (Petrescu et al., 2025). These findings indicate that problematic gaming should be understood through an integrated model involving family environment and individual psychological functioning.

Despite these developments, several research gaps remain. First, many studies focus mainly on adolescents, while fewer studies examine individuals across late adolescence and young adulthood, even though young adults remain vulnerable to problematic gaming (Gisbert-Pérez et al., 2026; Przybylski et al., 2017). Second, previous research often examines parenting style as a general construct, without clearly distinguishing the roles of maternal and paternal parenting. This distinction is important because mothers and fathers may contribute differently to emotional security, discipline, autonomy, and psychological adjustment (Dou et al., 2020; Teng et al., 2020). Third, Indonesian studies on online game addiction have not fully explained whether psychological well-being acts as a mediating mechanism between perceived parenting styles and online game addiction. Recent Indonesian evidence shows that authoritarian parenting directly predicts online game addiction, while psychological well-being does not significantly mediate this relationship, indicating that broader parenting dimensions and separate maternal-paternal pathways still need further investigation (Elvananta et al., 2024). Taken together, the novelty of this study lies in integrating these three aspects: examining online game addiction in the Indonesian context, distinguishing paternal and maternal parenting pathways, and testing psychological well-being as a mediating mechanism. This more specific analysis is needed to clarify how paternal and maternal parenting styles are linked to online game addiction through psychological well-being.

Building on these gaps, this study examines how perceived maternal and paternal parenting styles are associated with online game addiction through psychological well-being among Indonesian individuals aged 15–30 years. Theoretically, this study contributes to the literature by integrating family context and individual

psychological functioning in explaining problematic gaming behavior. Practically, the findings may support parents, educators, and mental health practitioners in developing preventive efforts that strengthen psychological resources and promote healthier digital gaming habits. Based on the theoretical review, three hypotheses are proposed: first, maternal parenting style is significantly associated with psychological well-being and online game addiction; second, paternal parenting style is significantly associated with psychological well-being and online game addiction; and third, psychological well-being mediates the relationships between maternal and paternal parenting styles and online game addiction.

## MATERIALS AND METHODS

### Participant Characteristics and Research Design

This study used a quantitative cross-sectional research design to examine the relationship between parenting styles, psychological well-being, and online game addiction. The cross-sectional approach was selected because the study aimed to identify the direct and indirect relationships among variables at one point in time. This design is commonly used in mediation studies when the objective is to examine statistical pathways among psychological variables, although causal interpretation remains limited (Hayes, 2022).

The participants were initially 601 active gamers with aged from 15–30 years who were recruited through online data collection from gaming community in discord and social media (facebook & instagram) between July 2023 till January 2024. This age range was selected because it represents late adolescence to early adulthood, a developmental period in which individuals commonly engage with digital technology, online games, and changing family-related psychological dynamics. Previous studies have shown that problematic gaming remains relevant among adolescents and young adults, making this age group appropriate for examining online game addiction and its psychological correlates (Gisbert-Pérez et al., 2026; Mihara & Higuchi, 2017; Satapathy et al., 2025). The main variables examined in this study were perceived maternal parenting style, perceived paternal parenting style, psychological well-being, and online game addiction.

### Sampling procedures

Participants were eligible to take part in the study if they were between 15 and 30 years old, had experience playing online games, and were willing to complete the questionnaire voluntarily. Participants who did not meet the age criteria or submitted incomplete responses were excluded from the analysis.

Participants were recruited using a non-probability sampling technique through digital outreach. The questionnaire was distributed online through social media platforms, including Instagram, Twitter, and Facebook. These platforms were selected because they are widely used by adolescents and young adults and allow researchers to reach individuals who are familiar with online gaming activities. Participation in the study was voluntary and based on self-selection. Before completing the questionnaire, participants received information about the purpose of the study, the estimated time required to complete the survey, and the confidentiality of their responses. Participants were asked to provide informed

consent before continuing to the questionnaire. No identifying personal information was collected in the final dataset used for analysis

### Sample Size, Power, and Precision

The intended sample size was set to obtain sufficient statistical power for regression-based mediation analysis. Initially, data were collected from 601 participants. Before analysis, the dataset was screened through a data-cleaning process, including checks for eligibility criteria, completeness of responses, duplicate entries, and unusual response patterns or extreme values. After applying these screening procedures, 519 participants were retained as the final analytic sample.

The final sample size of 519 participants was considered adequate for mediation analysis because it exceeded the minimum sample commonly recommended for detecting indirect effects using bootstrapping procedures. Bootstrapping is recommended in mediation analysis because it estimates the indirect effect without relying on the assumption of normal sampling distribution (Hayes, 2022). No interim analysis or stopping rule was applied because this study used a one-time cross-sectional survey design. The use of 519 participants provided sufficient precision for estimating the associations among parenting styles, psychological well-being, and online game addiction.

### Measures and Covariates

Data were collected using self-report questionnaires. The instruments used in this study were selected from previous studies and had been adapted or used in the Indonesian context. Online game addiction was measured using the Indonesian Online Game Addiction Questionnaire developed by Jap et al. (2013). This instrument was developed to assess online game addiction in the Indonesian context. Higher scores on this scale indicate higher levels of online game addiction. In the present study, the internal consistency of this scale was acceptable, with a Cronbach's alpha coefficient of .730.

Parenting style was measured using the Parental Authority Questionnaire (PAQ), originally developed by Buri (1991) and adapted into the Indonesian context by Preston and Salim (2019). The Indonesian version of the PAQ consists of 41 items and assesses participants' perceptions of parenting style from both maternal and paternal figures. Although the PAQ theoretically distinguishes authoritative, authoritarian, and permissive parenting styles, the present study used overall perceived maternal and paternal parenting scores to maintain a parsimonious mediation model. These scores were computed by combining the PAQ items for each parental figure. Therefore, the maternal and paternal scores in this study should be interpreted as overall perceived parenting scores rather than as separate authoritative, authoritarian, or permissive parenting dimensions. Higher scores indicate stronger overall endorsement of the parenting characteristics measured by the PAQ for each parental figure. Responses were recorded using a 5-point Likert scale. In this study, the reliability coefficient was .863 for the maternal parenting section and .679 for the paternal parenting section (Preston & Salim, 2019).

Psychological well-being was measured using the Psychological Well-Being Scale developed based on Ryff's psychological well-being framework, which includes autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-

acceptance (Ryff, 1989). This study used the 42-item Indonesian psychological well-being scale developed by Triwahyuni and Prasetyo (2021). Responses were given on a 6-point Likert scale. The scale showed excellent internal consistency in this study, with a Cronbach's alpha coefficient of .933. The primary variables in this study were parenting styles as independent variables, psychological well-being as the mediating variable, and online game addiction as the dependent variable. Demographic information, including age and other participant characteristics, was collected to describe the sample. No demographic covariates were included in the main mediation model.

### Data Analysis

Data were analyzed using regression-based mediation analysis. The mediation model was tested using PROCESS macro version 5 developed by Hayes (2022), specifically Model 4 with IBM SPSS Statistic version 31 as statistical software. This analysis was used to examine whether psychological well-being mediated the relationship between parenting styles and online game addiction. Separate mediation analyses were conducted for paternal and maternal parenting styles. In each model, parenting style was entered as the independent variable, psychological well-being as the mediator, and online game addiction as the outcome variable. The indirect effect was tested using a bootstrapping procedure with 5,000 resamples and a 95% confidence interval. The mediation effect was considered significant when the bootstrap confidence interval of the indirect effect did not include zero.

Before conducting the mediation analysis, internal consistency was examined using Cronbach's alpha. The perceived paternal parenting score,  $\alpha = .916$ , perceived maternal parenting score,  $\alpha = .915$ , and psychological well-being scale,  $\alpha = .910$ , showed strong internal consistency, while the online game addiction scale showed acceptable internal consistency,  $\alpha = .757$ . Descriptive statistics were then calculated to summarize participant characteristics and the main study variables. Assumption testing was also conducted to evaluate the suitability of the data for regression-based mediation analysis. The scatterplots, histograms, and Normal P-P Plots indicated acceptable linearity, homoscedasticity, and residual normality. Durbin-Watson values ranged from 1.705 to 1.756, indicating acceptable independence of residuals, while VIF values ranged from 1.000 to 1.226, indicating no multicollinearity problem. Cook's Distance values were below 1.00, suggesting that no influential cases substantially affected the regression estimates. Therefore, the data were considered suitable for regression-based mediation analysis.

**Table 1.** Instrument reliability results

Variable	Number of items	Reliability
Paternal parenting style	14	0.916
Maternal parenting style	14	0.915
Psychological well-being	31	0.910
Online gaming addiction	7	0.757

## RESULTS OF STUDY

Descriptive statistics were calculated to describe the main study variables. First, the general demographic characteristics of the participants are presented in Table 2, followed by their gaming profiles in Table 3.

**Table 2.** Demographic Data: Profile of participants (N=519)

Demographic characteristics	Category	Frequency	Percentage
Age	15 - 20	271	52.2
	21 - 25	169	32.5
	26 - 30	79	15.3
Occupational status	School students	66	12.7
	College students	289	55.7
	Employed	113	21.8
	Unemployed	51	9.8
Educational	Junior high school	35	6.7
	Senior high school	329	63.4
	Associate degree	14	2.7
	Bachelor's degree	135	26.0
	Others	6	1.2

**Table 3.** Demographic Data: Gaming profile of participants (N=519)

Demographic characteristics	Category	Frequency	Percentage
Gaming duration per day	< 3 hour/day	279	53.8
	3 - 5 hour/day	160	30.8
	5 - 7 hour/day	54	10.4
	> 7 hour/day	26	5.0
Gaming duration per week	1 day/week	34	6.6
	2 - 3 day/week	127	24.5
	4 - 5 day/week	112	21.6
	6 - 7 day/week	246	47.4
Gaming expenditures	0	102	19.7
	< Rp100.000	192	37.0
	Rp100.000- Rp250.000	124	23.9
	Rp251.000- Rp500.000	58	11.2
	Rp501.000- Rp750.000	16	3.1
	Rp751.000- Rp1.000.000	27	5.2

As shown in Table 4, the mean score for perceived paternal parenting was 59.95 (SD = 13.19), while the mean score for perceived maternal parenting was 63.66 (SD = 11.42). The mean score of psychological well-being was 128.36 (SD = 21.93), and the mean score of online game addiction was 22.91 (SD = 6.23). Before conducting the mediation analysis, Pearson correlation analysis was conducted to examine the basic relationships among the main variables. The correlation matrix is presented in Table 5. Perceived paternal parenting was positively correlated with psychological well-being and negatively correlated with online game addiction. Perceived maternal parenting

was positively correlated with psychological well-being, but its correlation with online game addiction was not significant. Psychological well-being was negatively correlated with online game addiction. These results provide an initial pattern suggesting that higher perceived parenting quality is associated with better psychological well-being, and better psychological well-being is associated with lower online game addiction.

Hypothesis testing was conducted using regression-based mediation analysis with PROCESS Model 4.

Psychological well-being was tested as a mediator in the relationship between parenting style and online game addiction. Two separate mediation models were examined: one for paternal parenting style and one for maternal parenting style. The indirect effects were tested using a bootstrapping procedure with 5,000 resamples and a 95% confidence interval. The mediation effect was considered significant when the bootstrap confidence interval did not include zero (table 6).

**Table 4.** Descriptive Statistics of Study Variables

Variable	Minimum	Maximum	M	SD
Paternal parenting style	14	84	59.95	13.19
Maternal parenting style	24	84	63.66	11.42
Psychological well-being	61	185	128.36	21.93
Online game addiction	7	41	22.91	6.23
Age	15	30	21.45	3.54

Note. M = mean; SD = standard deviation.

**Table 5.** Correlation Matrix Among Main Variables

Variable	1	2	3	4
1. Online game addiction	–			
2. Psychological well-being	-.219***	–		
3. Perceived paternal parenting	-.097*	.429***	–	
4. Perceived maternal parenting	-.030	.347***	.466***	–

Note.  $p < .05$ ,  $**p < .001$ .

**Table 6.** Regression-Based Mediation Analysis of Perceived Parenting, Psychological Well-Being, and Online Game Addiction

Model	Path	b	SE	t	p	95% CI	Effect Size
Paternal	PS_F → PWB	.7137	.0823	8.6743	<.001	[.5520, .8753]	$\beta = .429$
	PWB → OGA	-.0618	.0134	-4.6019	<.001	[.0882, -.0354]	$\beta = -.218$
	PS_F → OGA, direct	-.0019	.0240	-.0784	.9375	[-.0491, .0453]	$\beta = -.004$
	Total effect	-.0460	.0232	-1.9812	.0481	[-.0916, -.0004]	$\beta = -.097$
	Indirect effect	-.0441	.0110	–	–	[-.0671, -.0236]	$\beta = -.093$
Maternal	PS_M → PWB	.6667	.0934	7.1397	<.001	[.4832, .8501]	$\beta = .347$
	PWB → OGA	-.0675	.0129	-5.2327	<.001	[-.0928, -.0421]	$\beta = -.237$
	PS_M → OGA, direct	.0286	.0273	1.0443	.2968	[-.0252, .0823]	$\beta = .052$
	Total effect	-.0164	.0273	-6.009	.5482	[-.0701, .0372]	$\beta = -.030$
	Indirect effect	-.0450	.0111	–	–	[-.0690, -.0253]	$\beta = -.082$

Note. PS\_F = paternal parenting style; PS\_M = maternal parenting style; PWB = psychological well-being; OGA = online game addiction; CI = confidence interval;  $\beta$  = standardized indirect effect. Indirect effects were tested using 5,000 bootstrap samples. For the paternal model,  $R^2 = .184$  for the mediator model and  $R^2 = .048$  for the outcome model. For the maternal model,  $R^2 = .120$  for the mediator model and  $R^2 = .050$  for the outcome model.

In the paternal parenting model, paternal parenting style significantly predicted psychological well-being,  $b = .7137$ ,  $SE = .0823$ ,  $t = 8.6743$ ,  $p < .001$ , 95% CI [.5520, .8753]. Psychological well-being also significantly predicted online game addiction,  $b = -.0618$ ,  $SE = .0134$ ,  $t = -4.6019$ ,  $p < .001$ , 95% CI [-.0882, -.0354]. However, the direct effect of perceived paternal parenting on online game addiction was not significant after psychological well-being was included,  $b = -.0019$ ,  $SE = .0240$ ,  $t = -.0784$ ,  $p = .9375$ , 95% CI [-.0491, .0453]. The total effect was significant,  $b = -.0460$ ,  $SE = .0232$ ,  $t = -1.9812$ ,  $p = .0481$ , 95% CI [-.0916, -.0004]. The indirect effect through psychological well-being was significant,  $b = -.0441$ ,  $BootSE = .0110$ ,  $BootLLCI = -.0671$ ,  $BootULCI = -.0236$ . The completely standardized indirect effect was  $-.0934$ , indicating a small indirect association. These findings suggest that perceived paternal parenting

was associated with lower online game addiction mainly through higher psychological well-being.

In the maternal parenting model, perceived maternal parenting significantly predicted psychological well-being,  $b = .6667$ ,  $SE = .0934$ ,  $t = 7.1397$ ,  $p < .001$ , 95% CI [.4832, .8501]. Psychological well-being significantly predicted online game addiction,  $b = -.0675$ ,  $SE = .0129$ ,  $t = -5.2327$ ,  $p < .001$ , 95% CI [-.0928, -.0421]. The direct effect of perceived maternal parenting on online game addiction was not significant,  $b = .0286$ ,  $SE = .0273$ ,  $t = 1.0443$ ,  $p = .2968$ , 95% CI [-.0252, .0823]. The total effect was also not significant,  $b = -.0164$ ,  $SE = .0273$ ,  $t = -6.009$ ,  $p = .5482$ , 95% CI [-.0701, .0372]. However, the indirect effect through psychological well-being was significant,  $b = -.0450$ ,  $BootSE = .0111$ ,  $BootLLCI = -.0690$ ,  $BootULCI = -.0253$ . The standardized indirect effect was approximately  $-.0824$ ,

indicating a small indirect association. These results suggest that perceived maternal parenting was indirectly associated with online game addiction through psychological well-being, even though the total and direct effects were not significant.

## DISCUSSION

This study aimed to examine whether psychological well-being functions as an indirect pathway linking perceived paternal and maternal parenting with online game addiction. The results showed significant indirect associations in both models: higher perceived paternal and maternal parenting were associated with higher psychological well-being, which in turn was associated with lower online game addiction. However, the direct effects of perceived paternal and maternal parenting on online game addiction were not significant after psychological well-being was included in the models. Therefore, the findings should be interpreted as statistical indirect associations rather than evidence of causal mediation. This pattern is consistent with the view that parenting functions as a family-contextual factor that contributes to psychological adjustment, emotional development, and self-regulatory resources, which may later influence vulnerability to problematic gaming behavior (Morris et al., 2007; Brand et al., 2019; Azman et al., 2021; Ropovik et al., 2023; Kassis et al., 2025).

In the paternal model, paternal parenting style significantly predicted psychological well-being, and psychological well-being significantly predicted online game addiction. The total effect of perceived paternal parenting on online game addiction was significant, but the direct effect became non-significant after psychological well-being was included. This suggests that the association between paternal parenting and online game addiction is mainly explained through psychological well-being. Paternal parenting may contribute to psychological well-being through structure, autonomy support, behavioral boundaries, discipline, and parental knowledge, which are relevant to adolescents' behavioral regulation and psychological adjustment. This interpretation is consistent with previous studies showing that parenting style contributes to adolescents' psychological well-being and behavioral outcomes (Francis et al., 2021; Gaspar et al., 2022; Huang et al., 2024). More specifically, studies on paternal and maternal parenting suggest that both parents contribute to youth adjustment, although their functions may operate through different patterns of autonomy support, monitoring, discipline, emotional support, and behavioral regulation (Lansford et al., 2013; Manuele et al., 2023). However, the non-significant direct effect indicates that paternal parenting should not be interpreted as directly reducing online game addiction in this study. Rather, its role appears to operate mainly through the psychological resources reflected in well-being.

In the maternal model, perceived maternal parenting significantly predicted psychological well-being, and psychological well-being significantly predicted online game addiction. However, the direct effect and total effect of perceived maternal parenting style on online game addiction was not significant. This indicates an indirect-only mediation pattern, suggesting that maternal parenting style is associated with online game addiction mainly through psychological well-being. In other words, maternal parenting may shape the individual's psychological resources, which then influence the tendency to engage in

problematic gaming. This result supports previous findings that family-related factors are important in understanding gaming problems, especially when they affect emotional and psychological functioning (Chung et al., 2023; Guo et al., 2024; She et al., 2022).

The negative relationship between psychological well-being and online game addiction also strengthens the argument that problematic gaming is not merely caused by gaming exposure or playing duration. Psychological well-being reflects positive psychological functioning, including autonomy, environmental mastery, purpose in life, self-acceptance, personal growth, and positive relations with others (Ryff, 1989; Ryff, 2013; Triwahyuni & Prasetyo, 2021). These dimensions are theoretically relevant to emotional regulation and coping because they reflect the individual's capacity to manage life demands, maintain meaningful goals, evaluate the self positively, and build supportive social relationships. Emotion regulation refers to how individuals influence the emotions they experience and express, while adaptive coping helps individuals manage stressful situations without relying on maladaptive escape strategies (Gross, 1998; Morris et al., 2007). Therefore, individuals with stronger psychological well-being may have greater psychological resources to regulate negative emotions, cope with stress, and maintain self-control in gaming behavior. Conversely, individuals with lower psychological well-being may be more vulnerable to using online games as emotional escape, compensation, temporary achievement, or social connection. This interpretation is consistent with the compensatory internet use perspective, which argues that problematic internet use may occur when online activities are used to cope with psychosocial problems, and with the I-PACE model, which explains addictive behaviors through the interaction between personal characteristics, affective and cognitive responses, and executive control processes (Kardefelt-Winther, 2014; Brand et al., 2019). It is also in line with previous research showing that psychological difficulties, lower life satisfaction, and lower well-being are related to problematic gaming behavior (Bargeron & Hormes, 2017; Goh et al., 2019; Hwang & Toma, 2021; Kaya et al., 2024). Therefore, online game addiction should be understood as part of a broader psychological and family context.

Practically, the findings suggest that prevention and intervention programs for online game addiction should not only focus on reducing gaming time, particularly because problematic internet and gaming behaviors may increase when individuals experience psychological stress, reduced structure, or limited adaptive coping resources (Király et al., 2020). Parents, educators, and mental health practitioners should also consider strengthening psychological well-being, emotional regulation, adaptive coping, and self-control. Psychoeducation for parents may focus on how warmth, consistent discipline, autonomy support, communication, and appropriate monitoring can support adolescents' psychological adjustment. Digital parenting guidance may also help parents set healthy gaming boundaries without relying only on punishment or excessive control. For adolescents and young adults, interventions may include emotional regulation training, stress management, reflection on gaming motives, and development of alternative coping strategies. This is important because gaming itself may provide benefits when used adaptively, but may become problematic when it replaces healthier coping, emotional regulation, and social functioning (Granic et al., 2014; Kuss et al., 2017; World Health Organization, 2020).

This study has several limitations. First, the cross-sectional design prevents causal interpretation, so the indirect effects should be understood as statistical indirect associations rather than evidence of causal mediation. Second, the use of self-report questionnaires may increase the risk of response bias. Third, the online sampling strategy may limit the generalizability of the findings. Fourth, although this study used overall perceived paternal and maternal parenting scores to maintain model parsimony, the PAQ theoretically distinguishes authoritative, authoritarian, and permissive parenting styles. Therefore, future studies should examine these parenting dimensions separately to clarify whether different parenting styles show different associations with psychological well-being and online game addiction. Fifth, psychological well-being was treated as a unidimensional construct in the mediation analysis. Although this approach provides a concise understanding of overall psychological well-being, it may overlook the specific contribution of each dimension, such as autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance.

Future research should use longitudinal designs, include broader demographic groups, and examine additional variables such as gaming motivation, self-control, loneliness, peer influence, and parental monitoring, as these factors have been identified as relevant in previous studies on problematic gaming and internet use (Mihara & Higuchi, 2017; Rho et al., 2018; Teng et al., 2020). Future studies may also analyze psychological well-being multidimensionally to identify which dimensions most strongly explain the relationship between parenting styles and online game addiction.

In conclusion, the findings indicate that perceived paternal and maternal parenting are indirectly associated with online game addiction through psychological well-being. Higher perceived parenting scores were associated with better psychological well-being, and better psychological well-being was associated with lower online game addiction. However, the small effect sizes indicate that these findings should be interpreted cautiously. Strengthening psychological well-being, emotional regulation, and adaptive digital parenting practices may be important strategies for reducing vulnerability to problematic online gaming among Indonesian adolescents and young adults.

## CONCLUSION

This study concludes that psychological well-being represents a significant indirect pathway linking perceived paternal and maternal parenting with online game addiction among Indonesian individuals aged 15–30 years. The findings showed that higher perceived paternal and maternal parenting were associated with higher psychological well-being, and higher psychological well-being was associated with lower online game addiction. However, because the study used a cross-sectional design, these findings should be interpreted as associative rather than causal. Thus, psychological well-being should be understood as a statistical indirect pathway, not as evidence of causal mediation.

The main contribution of this study lies in its integrated examination of paternal and maternal parenting pathways within the Indonesian context. By distinguishing perceived paternal and maternal parenting, this study provides a more specific understanding of how family

context may be associated with problematic gaming through individual psychological functioning. The findings strengthen the view that online game addiction is not merely a digital behavior issue, but is also related to psychological well-being, emotional regulation, and family-based contextual factors.

Practically, the findings suggest that efforts to prevent problematic gaming should not only focus on limiting gaming time, but also on strengthening psychological well-being. Parents, educators, and mental health practitioners may support healthier gaming behavior through emotional support, open communication, consistent guidance, autonomy support, and digital parenting strategies that help young people regulate gaming behavior more adaptively. Future studies should use longitudinal designs to clarify the direction of these associations.

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## DECLARATION

### Ethics approval and consent to participate

This research involved an anonymous, minimal-risk online survey that collected no personally identifying or sensitive information. Under commonly applied institutional and national guidelines for low-risk behavioral research, formal ethical approval was not required. The study adhered to standard principles of research integrity, including voluntary participation, confidentiality, and the right to withdraw at any time. Before beginning the survey, all participants were provided with an information statement describing the study's purpose, procedures, and their rights as respondents. Informed consent was obtained electronically through a mandatory checkbox indicating participants' voluntary agreement to take part in the study.

### Consent for publication

Not applicable. The manuscript does not contain any individual person's data in any form.

### Availability of data and materials

The data from this study are not publicly available but can be requested from the corresponding author upon reasonable request.

### Conflicts of interest Statement

The authors declare that they have no competing interests.

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### Artificial Intelligence-Assisted Technology

Artificial intelligence-assisted technologies were used exclusively for improving grammar and language clarity. The authors are fully responsible for the content of the article.

**Authors' contributions.**

**Rendy Alfiannoor Achmad:** Conceptualization; Methodology; Formal Analysis; Investigation; Writing - Original Draft; Writing - Review & Editing; Supervision.

**Katamasi Tri Pratiwi Julia Elvananta:** Investigation; Data Curation; Writing - Review & Editing.

**Taruli Artha Butar Butar:** Investigation; Data Curation; Writing - Review & Editing.

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