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Original Research

The Impact of Online Game Addiction on Work Productivity Among Individuals Residing in Urban Areas of Indonesia

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ABSTRACT

Background: *Indonesia exhibits high smartphone penetration (210.77 million users, 2021) and substantial online gaming engagement, with 26% of gamers aged 18–24 and 20% aged 25–34. Given alarming gaming disorder prevalence (IGD: 14.6% males, 6.2% females; GD: 7.2% males, 2.8% females) and limited research on productivity impacts in urban Indonesia, this study investigates online game addiction's effect on work productivity among young adults in South Jakarta.*

Methods: *A cross-sectional correlational design recruited 95 participants via purposive sampling (aged 18–26, South Jakarta residents, >3 hours/day non-professional gaming). Data collection utilized the validated Indonesian Online Game Addiction Questionnaire (7-item, Cronbach's α=0.73) and Individual Work Performance Questionnaire (18-item, Cronbach's α=0.814–0.871). Normality was confirmed with Kolmogorov-Smirnov testing; SPSS v.28 facilitated Pearson correlation and linear regression analyses.*

Results: *Participants were predominantly male (64.21%), high school-educated (72.63%), and private sector employees (61.05%). Key findings revealed: a significant weak negative correlation between online game addiction and work productivity ($r = -0.291$, $p = 0.04$); a strong positive correlation between addiction and gaming duration ($r = 0.486$, $p < 0.001$); no correlation between gaming duration and productivity ($p = 0.312$); and regression indicating addiction explains 9.7% of productivity variance (Adjusted $R^2 = 0.088$, $\beta = -0.420$, $p = 0.002$).*

Conclusion: *Online game addiction significantly impairs work productivity among urban Indonesian youth, yet accounts for only 9.7% of variance—underscoring the influence of unaddressed mediators like sleep quality and motivation. Findings necessitate integrating psychiatric nursing interventions within workplace mental health frameworks.*

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INTRODUCTION

The number of smartphone users in Indonesia has had significant annual growth, rising from 193.94 million users in 2020 to 210.77 million users in 2021 (Statista Research Department, 2023). This upward trend is projected to persist in the future. In Indonesia, a significant proportion of online game users fall within the age range of 18 to 24, accounting for 26% of the total user base.

Additionally, individuals aged 25 to 34 constitute 20% of the online game user population in the country (Mobile Marketing Association, 2019). This observation suggests the potential for a rise in the population of individuals in Indonesia who exhibit problematic behaviors related to online gaming, such as addiction. The prevalence of internet addiction in Indonesia stands at 38.5%, positioning it as the second highest in Southeast Asia.

Conversely, Thailand exhibits the highest incidence of game addiction, with a rate of 44.7 (Chia et al., 2020). The reported prevalence of a gaming disorder among the population was 23.83% (Limone et al., 2023). The prevalence rate of Internet Gaming Disorder (IGD) among males was 14.6%, while the prevalence rate of Gaming Disorder) GD was 7.2%. Conversely, the prevalence rate of IGD among females was 6.2%, while the prevalence rate of GD was 2.8% (Chew et al., 2025).

Video games are known to possess a multitude of possible advantages pertaining to cognitive, motivational, social, and emotional aspects of human development (Xu et al., 2023). However, this phenomenon undergoes a transformation when it reaches a point of excessiveness and develops into a state of addiction towards gaming. Internet gaming disorder, commonly known as online game addiction, is a psychiatric disease (American Psychiatry Association, 2022). Individuals who exhibit addiction to online gaming may manifest symptoms including salience, conflict, relapse, tolerance, mood change and withdrawal amongst other issues (Xie & Tang, 2024).

Engaging in an excessive amount of gaming activities also has the potential to result in hand injuries, specifically the development of carpal tunnel syndrome. This condition entails the inflammation of nerves located in the wrist and is commonly observed among individuals who work in office settings (Grinspoon, 2020). Moreover, engaging in an excessive amount of gameplay has been found to be associated with heightened levels of social anxiety and sadness (Aonso-Diego et al., 2024; Gioia et al., 2022). This is due to the brain being consistently in a state of hyperarousal. The manifestation of depressive symptoms may also be attributed to a decline in the quality of sleep (Da Estrela et al., 2021).

Engaging in nocturnal video game activities has the potential to postpone the initiation of sleep, thereby impeding the overall duration and quality of sleep (Zaman et al., 2022). Individuals who are addicted to online gaming tend to allocate a significant portion of their time engaging in game-related activities, hence reducing the amount of time they dedicate to other non-gaming pursuits (Bu & Ding, 2024; Kaya et al., 2023). It has been found that there is a positive correlation between sleep quality and job performance(Liu et al., 2025). Online gaming addiction has been observed to potentially induce lethargy at the workplace, stemming from a diminished level of motivation (Irmayani & Anas, 2020). The experience of lethargy when manifested among employees could potentially influence their level of work efficiency.

Productivity refers to the efficient utilization of innovation and resources in order to enhance the value-added component of goods and services. Labor productivity in Indonesia is at a comparatively lower level when compared to other countries within the

ASEAN region (Mufti, 2020). The influence of certain lifestyles, characterized by heightened reliance on digital technology and suboptimal posture, has been observed to have a discernible effect on motivation levels and correlates with a reduction in job productivity (Goadsby et al., 2021). Low job satisfaction is a consequence of impaired mental well-being(Caponnetto et al., 2022).

The presence of job satisfaction is directly associated with a beneficial impact on work productivity (Utami et al., 2020). The level of job satisfaction experienced by individuals is influenced by the quality of the work milieu, which is shaped by interpersonal interactions inside the workplace. The escalation of job expectations contributes to the deterioration of the work environment (Zhou et al., 2020). A noteworthy correlation exists between work demands, overtime, and worker burnout (Diehl et al., 2021). The extent of employee video game addiction tends to escalate in the presence of work-to-family conflict and family-to-work conflict (Choi et al., 2020).

In a preliminary investigation completed in the South Jakarta region, it was observed that a subset of employees engaged in extensive gaming activities during both their working hours and leisure time. Despite extensive documentation of the adverse effects of online gaming addiction on mental and physical health worldwide, there exists a significant gap in research that incorporates the insights of mental health professionals, particularly psychiatric nursing, to address diminished work productivity in Indonesia's urban environment. The results are anticipated to underpin evidence-based occupational health policies in Indonesia.

MATERIAL AND METHODS

This study employed a correlational quantitative methodology with a cross-sectional approach. This method is used to see the relationship between the incidence of online game addiction and work productivity. A total of 95 research samples were acquired using a purposive sampling technique. The Lemeshow approach was employed for the computation due to the lack of available data regarding the number of online game users in South Jakarta (Levy & Lemeshow, 2011).

The sample was chosen according to established inclusion and exclusion criteria. The inclusion criteria were: (1) individuals aged 18–26 years; (2) engagement in online gaming for more than three hours per day; (3) willingness to participate as research subjects; and (4) residence in South Jakarta. The exclusion criterion specifically removed individuals who were employed as professional online gamers.

The instrument employed in this study was the Indonesia Online Game Addiction Questionnaire (Jap et al., 2013). This questionnaire consists of seven questions. These questions must be answered on a 5-point Likert scale, ranging from "Never" to "Very Often". The item-total correlation of the Indonesian Online Game Addiction Questionnaire demonstrates a favorable range of 0.29 to 0.55, indicating a strong relationship between individual items. Additionally, the questionnaire exhibits adequate reliability with Cronbach’s alpha coefficient of 0.73. The subsequent survey instrument utilized is referred to as the Individual Work Performance Questionnaire (IWPQ) (Widyastuti et al., 2018).

The IWPQ questionnaire has 18 questions and is answered using a 5-point Likert scale, namely never, seldom, sometimes, regularly, often with a range from 0 to 4. Based on the outcomes of the content validity test conducted using Aiken's V, it can be observed that all of the translated items of the IWPQ exhibit a favorable Aiken's V

value, averaging 0.82. The reliability coefficient of the Indonesian version of the IWPQ was computed utilizing Cronbach's Alpha.

The reliability coefficient for the task performance dimension is 0.871, accompanied by a standard error of 0.227. On the dimension of contextual performance, the reliability coefficient is 0.858, indicating a high level of internal consistency. The standard measurement error, which quantifies the degree of random error in the measurement, is 0.195. The dimension of unproductive work behavior, which is the reverse of the other two dimensions, had a reliability value of 0.814 with a standard error of 0.129.

The study was conducted by researchers in the Mampang area of South Jakarta. The research team identified samples that satisfied the inclusion criteria and subsequently communicated to disseminate research information. The researchers allowed respondents the option to participate or decline.

Upon agreement, potential respondents completed the consent form. Subsequently, participants filled out a self-identification form, the Indonesia Online Game Addiction Questionnaire (IQQ), and IWPQ. Upon completion of the question-answering process, the researchers verified the completeness of the data, subsequently coded it, and tabulated it for analysis.

Data normality testing was performed using the Kolmogorov-Smirnov test, and the data was normally distributed. The Pearson correlation test was used in this study to examine the relationship between the two variables because the data were normally distributed. Furthermore, a simple linear regression test was used to determine the effect of the independent variables on the dependent variable. SPSS software was used to perform this test.

This study received ethical approval by the issue of a valid ethical certificate, Certificate No. 328/EC-KEPK FKIK UMY/XII/2021, from the Research Ethics Commission of the Faculty of Medicine and Health Sciences at Universitas Muhammadiyah Yogyakarta. Researchers have guaranteed the confidentiality of participants. They also honor the autonomy of study participants and guarantee that responses do not experience any damage.

RESULTS

Table 1. Distribution of Demographic Characteristics of Respondents Based on Education, Gender, and Type of Work (n = 95)

Variable	n	%
Gender		
Male	61	64.21
Female	34	35.79
Total	**95**	**100**
Type of Work		
Private employees	58	61.05
Self-employed	28	29.47
Civil servants	9	9.48
Total	**95**	**100**

Note: n = numbers of observations; % = percentage

Table 1 describes that the majority of respondents had a high school education (72.63%) and a bachelor's degree (25.27%), while only 1.05% had an elementary school

education and 1.05% had a junior high school education. In terms of gender, the respondents were predominantly male (64.21%) compared to female (35.79%). Based on occupation, the majority of respondents worked as private sector employees (61.05%), followed by entrepreneurs (29.47%), and civil servants (9.48%).

Table 2. Mean and Standard Deviation of Online Game Addiction, Work Productivity, and Length of Time Spent Playing Online Games (n = 95)

Variable	Mean ± SD
Online game addiction	18.00 ± 6.92
Work productivity	55.53 ± 9.31
Length of Time Spent Playing Online Games	1.97 ± 0.77

Note: SD = Standard Deviation

Table 2 shows the mean and standard deviation (SD) of the three research variables. The average score for online game addiction among respondents was 18.00 ± 6.92, while the average work productivity was 55.53 ± 9.31. The average time spent playing online games was 1.97 ± 0.77 hours per day.

Table 3. Correlation between Online Game Addiction, Length of Time Spent Playing, and Work Productivity (n = 95)

Variable Relationship	r	p-value*
Online game addiction-Work productivity	-0.291	0.040
Online game addiction-Length of time spent playing online games	0.486	<0.001
Length of time spent playing online games-Work productivity	0.103	0.312

* The Pearson correlation test

The findings of this study on Table 3 indicate a statistically significant weak negative correlation ($p \leq 0.04$, $r = -0.291$) between online game addiction and work productivity. Additionally, a statistically significant high positive correlation ($p < 0.001$, $r = 0.486$) was observed between online game addiction and the amount of time spent playing online games. However, the analysis reveals that there was no statistically significant correlation between the amount of time individuals spend playing online games and their level of work productivity (p-value= 0.312).

Table 4. Final Model of Work Productivity Associated Factor (n = 95)

Variable	B	SE	Beta	t	p-value*	R	R^2	Adjusted R^2	Std. Error
Online Game Addiction	-0.42	0.13	-0.31	-3.16	0.002	0.31	0.097	0.088	8.898
Length of Time Spent Playing Online Games	0.72	1.35	0.06	0.532	0.596				

Note: SE = standard error; B = unstandardized coefficient; Beta = standardized coefficient

The findings from the linear regression analysis (Table 4.) indicated an R-squared value of 0.097. This value demonstrates that online game addiction affects work productivity by 9.7%, with the remaining 90.3% influenced by other unexamined variables.

DISCUSSION

The duration of engagement with social media platforms for entertainment purposes is positively associated with the likelihood of developing internet addiction (Ismail et al., 2020). The absence of regular physical exercise among individuals who engage in gaming activities is associated with an elevated susceptibility to developing smartphone addiction (Abbasi et al., 2021). The findings of the study indicated that a total of 38 individuals, including 40% of the sample, engaged in online gaming activities for a duration of 1-3 hours within a single day. The typical duration of mobile phone usage for online gaming purposes ranges from 1 to 3 hours, with a significant portion of this time occurring between 7:00 p.m. and 9:00 p.m (Tariq et al., 2024).

The progressive escalation in the duration of online gaming sessions among individuals with online gaming addiction culminates during the weekends (Hamre et al., 2022). Someone who is addicted to the internet frequently struggles with time management (Suryani et al., 2020). The phenomenon of excessive engagement in online gaming has been found to have a significant influence on the tendency to procrastinate on essential tasks (Sandya & Ramadhani, 2021).

Engaging in online gaming has the potential to induce negligence in individuals, leading to an unbridled sense of curiosity and subsequent addiction. Moreover, suboptimal outcomes in the context of engaging in online gaming can serve as a source of motivation for individuals, leading to an escalation in the duration of their online gaming sessions (King et al., 2018). In contrast to women, adult males demonstrate a notably higher prevalence for addictive internet gaming behavior, as indicated by their increased screen time, cravings, and adverse health consequences (Sudarto & Ananda, 2024).

The obtained p-value of 0.04 indicates a statistically significant association between scores measuring online game addiction and work productivity among adult individuals. Engaging in an excessive amount of online gaming may result in the development of a dependency on these games, therefore adversely affecting the productivity levels of adolescents (Rahmi et al., 2021). A positive correlation exists between internet usage and work-related difficulties, as indicated by an effect size of 0.25.

The phenomenon of online gam addiction has been found to be associated with detrimental effects on an individual's ability to concentrate and maintain discipline in their daily life (Dewi & Putra, 2020). The decline in work performance can be attributed to the influence of video games (Hammedi et al., 2021). There is a positive relationship between online social game addiction and self-regulation impairment (Lay et al., 2021; Maria et al., 2023).

The influence of stress stemming from video game addiction on job conflict (Yu-Chen Yeh & Huang, 2022). The rapid progress of science and technology impose demands and pressures on the continuous advancements in several domains that impact an individual's degree of stress. Individuals diagnosed with internet addiction had elevated levels of neuroticism and diminished levels of (Marciano et al., 2022), This phenomenon has the potential to undermine interpersonal interactions with individuals or colleagues. The overutilization of internet services while operating a computer leads to a decline in the capacity to engage in direct or in-person communication with individuals (O'Day & Heimberg, 2021).

An inverse relationship exists between the scale of the online game addiction score and the level of work productivity. Excessive engagement in online gaming can

lead to undesirable effects on an individual. One potential adverse consequence that individuals may experience as a result of engaging in online games is the development of addiction, wherein individuals become excessively reliant on and preoccupied with playing online games. This addiction can lead to a disregard of other important activities and responsibilities, as individuals may prioritize their gaming habits over their obligations.

Moreover, the detrimental effects of excessive online gaming can extend beyond one's external commitments, affecting one's emotional well-being and overall mental health (Dewi & Putra, 2020). The phenomenon of online game addiction is associated with an individual's work performance, manifesting in behaviors such as tardiness, absenteeism, and disengagement from real-life activities due to excessive involvement in online gaming (Cabrillos et al., 2023). Game addiction, classified as a type of digital addiction, exerts a detrimental influence on productivity and performance by impeding interpersonal dynamics with colleagues (Cemiloglu et al., 2022; Lam & Harcourt, 2024).

Community mental health nurses are essential in addressing gadget and online gaming addiction through evidence-based preventive interventions at the population level. These interventions include emotional regulation training and structured education on responsible technology use, with a focus on high-risk urban demographics. Collaboration with occupational health nurses facilitates the implementation of these initiatives in a manner tailored to the workplace. Nonetheless, a significant limitation of this study is its geographically constrained sampling, as data were primarily gathered in major urban centers.

CONCLUSION

This study demonstrates that online game addiction has a significant negative impact on work productivity in young urban Indonesians, accounting for only 9.7% of the variance. This underscores the essential role of psychiatric mental health nurses (PMHNs) in implementing multidimensional interventions. PMHNs should: (1) implement workplace-based screening utilizing brief IGD tools (e.g., IGDT-10) for early detection; (2) develop nurse-led CBT modules that address gaming-induced hyperarousal and sleep disruption; and (3) collaborate with Puskesmas (community health centers) to provide digital literacy programs that focus on emotion regulation. Evidence-based actions establish PMHNs as essential change agents in the translation of research into practice, aimed at reducing the socioeconomic impact of gaming addiction through clinically grounded and culturally adapted nursing interventions.

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