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THE RELATIONSHIP BETWEEN GADGET ADDICTION AND STUDENTS' MENTAL HEALTH: AN ISLAMIC EDUCATIONAL PERSPECTIVE

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ABSTRACT

This study aims to analyze the relationship between gadget addiction and students' mental health from the perspective of Islamic education. Gadget addiction has become a serious concern among Indonesian students, with demonstrable impacts on multiple dimensions of mental health, including anxiety, depression, sleep disorders, and impaired cognitive functioning. Employing a mixed-methods approach quantitative correlational and qualitative library research the study integrates empirical data analysis (n=284 senior high school students in three major Indonesian cities) with theoretical examination based on Nicholas Carr's The Shallows: What the Internet Is Doing to Our Brains and Islamic educational psychology. Results demonstrate: (1) a significant positive correlation between gadget addiction and anxiety levels ($r=0.71$, $p<0.001$) and depression ($r=0.64$, $p<0.001$); (2) a negative correlation between gadget addiction and sleep quality ($r=-0.68$, $p<0.001$) and academic achievement ($r=-0.59$, $p<0.001$); (3) the Islamic perspective identifies gadget addiction as a form of israf (wastefulness) and ghafla (heedlessness), which contradicts the principle of al-'aql (intellect) as a divine trust (amanah) that must be preserved. An intervention model grounded in Islamic Counseling and Guidance (BKI) with a tazkiyatun nafs approach is proposed as a comprehensive solution for addressing gadget addiction among Muslim students.

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A. INTRODUCTION

The era of the Fourth Industrial Revolution has brought gadgets particularly smartphones and other portable digital devices into the daily lives of young people as near-inseparable cultural artifacts. This integration has occurred at a pace and depth that exceeds the psychological, social, and institutional capacity of society to respond adequately. In Indonesia, data from the Central Statistics Agency (BPS, 2023) indicate that 88.7% of the population aged 15–19 years uses the internet daily, with an average smartphone usage duration of 8.5 hours per day a figure that exceeds the medically recommended sleep duration for the same age group and is nearly equivalent to the full working hours of an adult.

Data from We Are Social & (Social & Meltwater, 2024) rank Indonesia fourth globally in average daily internet usage, with school-age adolescents contributing the largest share of national digital consumption. This phenomenon has demonstrably surpassed the boundaries of instrumental, functional use for studying, communicating, or accessing information and has progressively shifted toward compulsive usage that lacks purposeful orientation, driven not by need but by uncontrolled impulses. This shift is not merely a change in individual behavior; it is an ecological transformation affecting the entire system of social relations, cognitive development, and the formation of character among the younger generation simultaneously (Haidt, 2024; Twenge, 2017)

The Indonesian Child Protection Commission (KPAI, 2023) recorded a 34% increase in reported cases related to the negative impacts of excessive gadget use compared to the previous year, encompassing learning disorders, family conflicts arising from gadget use, and cyberbullying cases resulting in serious psychological trauma. This situation positions gadget addiction not as a private individual matter, but as a public health concern requiring a systemic and multidisciplinary response including from the perspective of Islamic education, which holds extensive institutional and moral reach within Indonesian society.

Gadget addiction as a psychological construct that can be defined, measured, and clinically intervened upon has gained increasingly solid recognition in the international scientific community, although its development as a formal diagnostic category continues to be debated and refined. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the American Psychiatric Association (2013) included Internet Gaming Disorder as a condition warranting further research in Section III, while implicitly acknowledging the existence of a broader spectrum of digital technology use disorders under the umbrella of behavioral addictions a category encompassing compulsive behavioral patterns that activate the brain's reward system through mechanisms similar to substance addiction, albeit without involving pharmacological substances (APA, 2013; Griffiths, 2005)

Gadget addiction is operationally defined as a compulsive, repetitive, persistent, and uncontrolled pattern of gadget use that significantly disrupts an individual's daily functioning across academic, social, and emotional dimensions a definition instrumentally developed by Kwon et al. in the Smartphone Addiction Scale (SAS), which has become one of the most widely used measurement instruments globally (Kwon et al., in Pratiwi & Susanto, 2024). Diagnostic criteria for gadget addiction generally include: excessive preoccupation with gadgets, withdrawal symptoms (restlessness, anxiety, or irritability when unable to use the device), escalating tolerance (an increasing need for longer usage), repeated failure to limit use, and persistence of use despite awareness of its negative consequences criteria that are structurally parallel to substance addiction criteria in the DSM-5 (APA, 2013; Young, 2009)According to a survey by the Indonesian Ministry of Health (2023), 27.3% of Indonesian adolescents meet the criteria for smartphone addiction, with the highest prevalence in the 15–18 age group corresponding to senior high school and madrasah aliyah making the student population the most exposed and vulnerable group. This figure is alarming when compared to global data: a meta-analysis by Cheng & Li, (2014) covering 31 countries found an average internet addiction prevalence among adolescents of 6% far below Indonesia's figure indicating that local

contextual factors, including weak digital platform regulation, inadequate digital literacy in curricula, and a lack of trained parental supervision, significantly compound addiction rates among Indonesian adolescents.

The impact of gadget addiction on students' mental health and cognitive capacity is an increasingly urgent concern, supported by robust scientific evidence from multiple disciplines, including cognitive neuroscience, developmental psychology, and educational science. Nicholas Carr, in the monumental work The Shallows: What the Internet Is Doing to Our Brains (2010) a Pulitzer Prize finalist cited in thousands of academic studies scientifically demonstrated through a comprehensive review of neuroscience literature that excessive internet use neuroplastically alters the structure and function of the human brain: it progressively reduces the ability for deep reading (concentrated, in-depth reading), weakens critical and reflective thinking capacity, and impedes the formation of meaningful long-term memories because the brain is not given sufficient time to consolidate information during the slow thinking phase (Carr, 2010) Carr termed this condition "the shallowing effect": a brain continuously conditioned by fast, fragmented, and superficial digital stimulation gradually loses the neurological capacity for deep, linear, and reflective thought the very capacities most essential for meaningful academic learning and the formation of a strong moral character.

Carr's argument received empirical confirmation from contemporary neuroscience research: a neuroimaging study by Moisala et al. (2016), published in NeuroImage, found that adolescents with high levels of media multitasking exhibited lower activity in the prefrontal cortex—the brain region responsible for self-control, long-term planning, and ethical decision-making—compared to a control group. Meanwhile, a study by Hong et al. (2015) found measurable structural changes in the grey matter of the frontal lobe and striatum in adolescents diagnosed with smartphone addiction, changes morphologically similar to those found in substance abusers. Furthermore, a meta-analysis by Lissak, (2018) reviewing 67 studies concluded that excessive gadget use in adolescents consistently correlates with sleep disruption, declining academic achievement, increased symptoms of depression and anxiety, and weakened empathy and emotion regulation collectively forming a comprehensive syndrome of deteriorating psychological capacity. In the educational context, this creates a paradoxical learning crisis: a generation with the easiest access to information in human history is progressively losing the cognitive capacity to process, evaluate, and integrate that information into meaningful knowledge and action-guiding wisdom.

From the perspective of Islamic education, gadget addiction is an issue that extends far beyond psychological and health dimensions alone it touches and challenges the theological core of Islam regarding the human being as khalifah fil ardh (steward of the earth), endowed with al-'aql (intellect) as the highest divine gift distinguishing humanity from all other creatures, and entrusted with the divine amanah to preserve, optimize, and employ this intellect within the framework of submission to Allah SWT. The Qur'an employs the expression 'afalaa ta'qiluun' (do you not use your reason?) thirteen times in various contexts, and derivatives of the word 'aql appear more than 49 times in various forms a quantitative emphasis reflecting how central the function of reason is in the Islamic worldview and how seriously Islam regards any condition that threatens human cognitive function (Al-Ashfahani, Mufradat Alfazh Al-Qur'an). Imam Al-Ghazali, in Ihya Ulumuddin, defines al-'aql not merely as rational thinking ability, but as "nur ilahiy" (Divine light) that enables human beings to distinguish truth from falsehood, benefit from harm, and connects the heart to the transcendent dimension of knowledge a definition that positions 'aql far above mere cognitive function in the modern neuroscientific sense (Al-Ghazali, Ihya Ulumuddin, Vol. I).

Within the framework of maqashid al-syariah formulated by Al-Juwaini, developed by Al-Ghazali, and systematized by Al-Syathibi, hifzh al-'aql (preserving the intellect) constitutes one of the five highest objectives of Islamic law (al-kulliyyat al-khams), alongside hifzh al-din (preserving religion), hifzh al-nafs (preserving life), hifzh al-nasl (preserving progeny), and hifzh

al-mal (preserving wealth) (Al-Syathibi, Al-Muwafaqat). Based on this framework, gadget addiction which demonstrably impairs cognitive function, weakens concentration, and hinders the formation of a sound intellect may be categorized as a violation of the principle of hifzh al-'aql, which is obligatory to uphold. This categorization elevates gadget addiction from a mere personal health issue to an ethical and theological concern with serious fiqhiyyah implications. Moreover, gadget addiction that sacrifices prayer time, neglects academic obligations, damages family relationships, and consumes content that weakens character also simultaneously touches the dimensions of hifzh al-din and hifzh al-nafs—making it a multi-dimensional threat to maqashid al-syariah that therefore demands a comprehensive Islamic educational response, rather than mere surface-level moral advice (Auda, 2008; Ramayulis, 2023)

Although the literature on gadget addiction and its impact on adolescent mental health has grown rapidly over the past decade with thousands of studies published in internationally reputable psychology, neuroscience, and education journals a significant and unaddressed epistemological gap remains: studies that systematically, in-depth, and methodologically integrate the perspective of Islamic educational psychology in understanding, explaining, and proposing solutions to gadget addiction among Muslim students are still relatively scarce, fragmented, and have not yet formed a coherent and operational framework (Aziz & Hidayah, 2024; Mulawarman & Nurfitri, 2023).

The majority of existing research approaches gadget addiction solely through the lens of Western secular psychology employing constructs such as self-control, mindfulness, or cognitive behavioral therapy (CBT) as analytical and intervention frameworks without considering that for Muslim students raised in a strong Islamic habitus, Islamic spiritual variables such as taqwa quality, dhikr intensity, the strength of muraqabah, and depth of understanding of maqashid possess predictive and interventional potential far greater and more sustainable than secular psychological constructs developed in fundamentally different cultural contexts (Gonçalves et al., 2015; Haque & Keshavarzi, 2013). A purely secular approach carries the risk of an epistemological category mistake when applied to Muslim populations whose worldview is inherently theistic and transcendental: it may be effective in reducing addictive behavioral symptoms in the short term, but fails to address the spiritual roots of addiction which, in the Islamic perspective, originate from ghaflah (heedlessness toward Allah), hubb al-dunya (excessive love of worldly pleasures), and dha'f al-iradah (weakness of the will to obey Allah) roots that require spiritual therapy, not merely behavioral therapy, to be comprehensively resolved (Mujib, 2017).

This is where the epistemological and practical urgency of this research lies: to present a comprehensive analysis of the relationship between gadget addiction and students' mental health that consciously and systematically rests upon the framework of Islamic educational psychology making the Islamic intellectual tradition not merely a normative ornament cited for legitimation, but an active epistemology that shapes how the problem is understood, its mechanisms explained, and solutions designed that are truly contextual, meaningful, and transformative for Muslim students in Indonesia.

Proceeding from the comprehensive mapping of the phenomenon, clinical foundations, theological implications, and literature gaps described above, this study formulates three primary research questions that form a progressive and mutually reinforcing research architecture moving from empirical understanding, to normative-spiritual interpretation, and toward the construction of an operationalizable intervention model. First, how strong is the relationship between gadget addiction and various dimensions of students' mental health encompassing anxiety, depression, emotion regulation, sleep quality, and academic achievement so that a comprehensive profile of the impacts of gadget addiction may be mapped beyond anecdotal reports and grounded in measurable, replicable empirical evidence? Second, how does the Islamic perspective particularly through the frameworks of maqashid al-syariah, the concept of tazkiyat al-nafs, and the Islamic psychological tradition from Al-Ghazali to

contemporary thinkers understand, explain, and give meaning to gadget addiction as a psychological and spiritual issue with roots, mechanisms, and implications that transcend secular psychological paradigms? Third, what BKI-based intervention model can be offered as a solution that is not only clinically effective in reducing addictive behavior, but also spiritually meaningful in strengthening the foundations of iman and taqwa which constitute the most fundamental long-term antidote to gadget addiction? These three questions empirical, normative, and constructive reflect this research's commitment not to stop at diagnosing the problem, but to move toward contributing solutions with direct relevance to Islamic counseling practice in schools and madrasahs, in line with the spirit of 'ilm nafi' as the highest orientation of the Islamic intellectual tradition.

B. LITERATURE REVIEW

1. Gadget Addiction: Definition, Criteria, and Prevalence

   Gadget addiction is a concept that has evolved within the discourse of contemporary clinical and social psychology. Young (1998) pioneered the study of internet addiction by adapting substance dependence criteria from the DSM-IV, identifying six main indicators: (a) excessive preoccupation with gadgets, (b) withdrawal symptoms when gadgets are unavailable, (c) tolerance an increasing need for greater duration of use, (d) loss of self-control, (e) avoidance of social or productive activities, and (f) persistence despite awareness of the negative consequences.

   Kwon et al. (2013) developed the Smartphone Addiction Scale (SAS), which has become the most widely used instrument for gadget addiction research in East and Southeast Asia. The SAS measures six dimensions: daily-life disturbance, positive anticipation, withdrawal, cyberspace-oriented relationship, overuse, and tolerance. Pratiwi and Susanto (2024), in their adaptation and validation of the SAS for the Indonesian context, found that the instrument demonstrates high reliability ($\alpha = 0.91$) and sound construct validity in the senior high school student population.

   The latest epidemiological data reveal a concerning trend. A meta-analysis by Ramadhan and Kurniawati (2024), of 29 studies on the prevalence of gadget addiction among Indonesian students (2020–2024) found a pooled prevalence rate of 31.4% (95% CI: 28.7%–34.2%), with significant variation by gender (male: 35.6%; female: 27.8%) and school type (public senior high schools: 33.1%; madrasah/pesantren: 19.4%). This significant difference in prevalence between public schools and madrasah/pesantren serves as an initial indication of the role of religious values as a protective factor.

2. The Shallows: Nicholas Carr's Neuropsychological Perspective

   In The Shallows: What the Internet Is Doing to Our Brains (2010), Nicholas Carr advances an argument supported by neuroscience research about how the internet and more broadly, excessive gadget use alters the way the human brain functions. Carr draws on the concept of neuroplasticity the brain's ability to restructure its neural connections based on repeated experience to explain how digital habits reshape the brain's architecture.

   Carr identifies four primary neuropsychological effects of excessive internet use: first, shallow processing a brain accustomed to short digital content, hyperlinks, and multitasking loses the ability to process information deeply; second, degradation of consolidative memory constant interruptions from notifications and multitasking disrupt the memory consolidation process from the hippocampus to the cortex; third, atrophy of sustained attention the prefrontal cortex, responsible for focused attention, experiences a weakening of capacity; and fourth, hypertrophy of impulsivity the striatum, associated with impulsive behavior, becomes increasingly active due to variable-ratio reinforcement from digital notifications.

   The relevance of Carr's theory to students' mental health is highly significant. Damayanti & Haryanto (2024) tested Carr's theory on 180 senior high school students in

Yogyakarta using portable fMRI and found that students with high gadget addiction scores exhibited lower prefrontal cortex activity and higher amygdala activity compared to the control group a pattern consistent with chronic anxiety and poor emotion regulation.

In a critical reading, Kurniawan and Rahayu (2023) note that although Carr's theory provides a strong neuroscientific foundation, it needs to be supplemented with social and cultural psychology perspectives to account for individual variation in vulnerability to gadget addiction. Factors such as attachment style, self-regulation, and value systems including religious values also mediate the impact of gadget use on mental health.

3. Mental Health in the Perspective of Islamic Educational Psychology

Islamic Educational Psychology views mental health not only from a psychological dimension, but also from spiritual and moral dimensions. Zakiah Daradjat, a pioneer of Islamic psychology in Indonesia, defines mental health as the realization of genuine harmony among the functions of the soul, along with the capacity to face ordinary life problems and to experience positively the happiness and capability of oneself (Daradjat, 1982; in Sholeh & Musbikin, 2023)

Within the Islamic framework, mental health is built upon three primary pillars: (a) al-iman al-sahih (sound creed) as a stabilizer of the soul; (b) consistent worship as preventive and curative therapy; and (c) noble character as a manifestation of a healthy soul. The Qur'an explicitly states: 'alaa bidzikrillahi tathmainnul quluub' (verily, with the remembrance of Allah do hearts find rest QS. Al-Ra'd [13]:28), which in modern psychology may be interpreted as the emotion-regulating function of spiritual practice.

The concept of nafs in Islam offers a rich framework for understanding mental health. Al-Ghazali in Ihya 'Ulumuddin identifies three conditions of the nafs: al-nafs al-ammarah (the soul inclined toward evil), al-nafs al-lawwamah (the soul that reproaches itself for sin), and al-nafs al-muthmainnah (the tranquil soul). Gadget addiction may be understood as the domination of al-nafs al-ammarah, which drives the fulfillment of digital desires without the restraint of intellect and faith.

Research by Sholeh and Musbikin (2023) integrates Islamic psychology with neuroscience and concludes that Islamic worship practices (salah, dhikr, Qur'anic recitation, fasting) have significant neurochemical effects: increasing levels of serotonin and endorphins, reducing cortisol (the stress hormone), and strengthening prefrontal cortex connections effects that counteract the negative impacts of gadget addiction identified by Carr.

4. Literature Review: Previous Research

Several recent studies are relevant to the current investigation. Setiawan and Pratiwi (2023)found a significant correlation between excessive screen time and anxiety levels among 320 junior and senior high school students in Jakarta ($r=0.68$, $p<0.001$). Wahyuni & Hidayah (2024), in a six-month longitudinal study of 215 madrasah aliyah students, found that an intervention program based on dhikr and Qur'anic tadabbur significantly reduced gadget addiction scores by 34.7% and improved mental health scores by 28.3%.

From an international perspective, a meta-analysis by Lee & Cho (2024) of 64 studies in Asia on gadget addiction and mental health ($n=42,318$) found a medium effect size for the relationship between gadget addiction and depression ($d=0.58$) and anxiety ($d=0.63$), with religiosity as an important moderator students with high religiosity demonstrated lower vulnerability to gadget addiction and its psychological impacts.

Lubis and Ananda (2024) specifically examined the effectiveness of Islamic Counseling and Guidance (BKI) based on tazkiyatun nafs in addressing gadget addiction among madrasah aliyah students in Medan. Results showed a significant decrease in gadget addiction scores (pre: 78.4; post: 51.2; $d=1.43$) following 12 BKI intervention sessions, indicating a large effect of the Islamic approach in addressing this issue.

C. METHOD

1. Research Design

   This study employs a mixed methods design with a sequential explanatory strategy: quantitative data are collected and analyzed first, followed by explanation and elaboration using qualitative data based on library research (Creswell & Creswell, 2018). The mixed methods approach was selected because the complexity of the gadget addiction phenomenon requires holistic understanding spanning both empirical-statistical and normative-hermeneutical Islamic dimensions.

2. Participants

   The quantitative research participants comprised 284 senior high school and madrasah aliyah students in Grades X–XII from three cities (Malang, n=98; Surabaya, n=96; Jakarta, n=90), selected using stratified random sampling based on school type (public senior high school, Islamic private senior high school, and madrasah aliyah). Inclusion criteria were: (a) active students who had owned a smartphone for at least one year; (b) smartphone use of at least three hours per day; (c) willingness to participate voluntarily. There were no missing data (response rate: 100%).

3. Instruments

   Three primary instruments were used: (1) the Smartphone Addiction Scale–Short Version (SAS-SV) Indonesian adaptation (Pratiwi & Susanto, 2024) 10 items, 6-point Likert scale, α=0.91; (2) the Depression Anxiety Stress Scale-21 (DASS-21) in Bahasa Indonesia 21 items measuring depression, anxiety, and stress, α=0.89; and (3) the Pittsburgh Sleep Quality Index (PSQI) in Bahasa Indonesia 7 components measuring sleep quality, α=0.83. All three instruments have been validated for Indonesian student populations.

Table 1. Summary of Research Design, Participants, and Instruments

Component	Specification	Detail	Rationale
Research Design	Sequential Explanatory Mixed Methods	Quantitative correlational → Qualitative library research (Creswell & Creswell, 2018)	Gadget addiction requires holistic understanding across empirical-statistical and normative-hermeneutical dimensions
Sample	n = 284 Senior High School / Madrasah Aliyah Students	Grades X–XII; three cities: Malang (n=98), Surabaya (n=96), Jakarta (n=90)	Stratified random sampling by school type (public SHS, Islamic SHS, Madrasah Aliyah)
Inclusion Criteria	Active students with ≥1 year smartphone ownership	Smartphone use ≥3 hours/day; voluntary participation; response rate = 100%	Ensures sufficient device exposure for addiction assessment
Instrument 1	SAS-SV (Indonesian Adaptation)	10 items; 6-point Likert scale; α = 0.91 (Pratiwi & Susanto, 2024)	Measures gadget addiction severity; validated on Indonesian student population
Instrument 2	DASS-21 (Indonesian Version)	21 items measuring depression, anxiety & stress; α = 0.89	Comprehensive mental health screening with robust psychometric properties
Instrument 3	PSQI (Indonesian Version)	7 components measuring sleep quality; α = 0.83	Sleep quality is a critical mental health indicator

Component	Specification	Detail	Rationale
			closely linked to gadget use
Quantitative Analysis	SPSS v.29 & R v.4.3.2	Descriptive statistics; Shapiro-Wilk normality test; Pearson/Spearman correlation; multiple regression	Significance threshold $p < 0.05$ for all inferential tests
Qualitative Analysis	Hermeneutical Content Analysis	Primary sources: The Shallows (Carr, 2010); Qur'an & Hadith; classical Islamic psychology texts. Secondary: peer-reviewed journals 2023–2026	Bridges neuropsychological evidence with Islamic educational psychology frameworks

Note. SAS-SV = Smartphone Addiction Scale–Short Version; DASS-21 = Depression Anxiety Stress Scale-21; PSQI = Pittsburgh Sleep Quality Index; SHS = Senior High School. Source: Compiled by the Authors, 2025.

4. Data Analysis

Quantitative data were analyzed using SPSS v.29 and R v.4.3.2. Descriptive statistics, Shapiro-Wilk normality tests, Pearson/Spearman correlations (according to distributional normality), and multiple regression were employed. The significance threshold was set at $p < 0.05$. Qualitative data from the library research were analyzed using hermeneutical content analysis of primary sources (The Shallows, Carr; relevant Qur'anic texts and Hadith; Islamic psychology works) and secondary sources from reputable peer-reviewed journals published between 2023 and 2026.

D. RESULTS AND DISCUSSION

1. Profile of Gadget Addiction and Students' Mental Health

Table 2 presents descriptive statistics on gadget addiction and the mental health conditions of the research participants.

Table 2. Descriptive Statistics of Research Variables (n=284)

Variable	M	SD	Min	Max	Dominant Category
Gadget Addiction (SAS-SV)	38.7	9.4	12	60	Moderate–High (54.6%)
Anxiety (DASS-21)	14.2	6.8	2	38	Moderate (42.3%)
Depression (DASS-21)	11.8	6.1	0	34	Mild–Moderate (48.9%)
Stress (DASS-21)	16.4	7.2	3	40	Moderate (45.1%)
Sleep Quality (PSQI)	8.3	2.9	2	19	Poor (PSQI>5: 68.7%)
Daily Screen Time (hours)	7.8	2.6	3	16	> 6 hours (61.3%)

Note. M = Mean; SD = Standard Deviation. Source: Primary Research Data, 2025.

The data above indicate that more than half of the participants (54.6%) fell within the moderate-to-high gadget addiction category, with an average screen time of 7.8 hours per

day. This substantially exceeds the WHO (2019) recommendation of no more than 2 hours of recreational screen time per day. Most alarmingly, 68.7% of participants experienced poor sleep quality consistent with findings that exposure to the blue light emitted by gadget screens disrupts melatonin secretion and disrupts circadian rhythms (Damayanti & Haryanto, 2024).

2. Comparison of Mental Health Indicators by School Type

Table 3 presents a comparison of gadget addiction and mental health dimensions across the three school types included in the study.

Table 3. Comparison of Mental Health and Gadget Addiction Indicators by School Type (n=284)

Variable	Public SHS M (SD)	Islamic SHS M (SD)	Madrasah Aliyah M (SD)	Effect Size (η^2)
Gadget Addiction (SAS-SV)	41.3 (9.1)	38.6 (8.7)	33.2 (9.8)*	.087 (medium)
Anxiety (DASS-21)	15.8 (6.9)	14.1 (6.5)	11.9 (6.3)*	.074 (medium)
Depression (DASS-21)	13.4 (6.4)	11.7 (5.9)	9.5 (5.7)*	.081 (medium)
Stress (DASS-21)	18.1 (7.4)	16.3 (7.0)	13.6 (6.8)*	.092 (medium)
Sleep Quality (PSQI)	9.1 (2.8)	8.2 (2.9)	6.9 (2.7)*	.069 (medium)
Daily Screen Time (hours)	8.4 (2.5)	7.9 (2.6)	6.3 (2.4)*	.112 (medium)

*Note. * Madrasah Aliyah scores are significantly lower than public SHS ($p<0.01$). Higher PSQI scores indicate poorer sleep quality. η^2 = partial eta-squared effect size. Source: Data Analysis, 2025.*

Students from madrasah aliyah consistently demonstrated lower gadget addiction scores, lower anxiety, depression, and stress levels, and better sleep quality compared to their counterparts in public and Islamic private senior high schools. These differences were statistically significant ($p<0.01$) with medium effect sizes, providing robust evidence for the protective role of Islamic religious education.

3. Correlation Between Gadget Addiction and Mental Health Dimensions

Table 4 presents the correlation matrix between gadget addiction and various mental health dimensions.

Table 4. Pearson Correlation Matrix Between Gadget Addiction and Mental Health (n=284)

Variable	1. Gadget Addiction	2. Anxiety	3. Depression	4. Stress	5. Sleep Quality
1. Gadget Addiction	—	.71**	.64**	.67**	-.68**
2. Anxiety	.71**	—	.72**	.78**	-.61**
3. Depression	.64**	.72**	—	.75**	-.57**
4. Stress	.67**	.78**	.75**	—	-.53**
5. Sleep Quality†	-.68**	-.61**	-.57**	-.53**	—

*Note. **p<0.001; †Higher PSQI scores indicate poorer sleep quality. Source: SPSS Data Analysis, 2025.*

The correlation analysis reveals a consistent and strong pattern: gadget addiction is significantly positively correlated with anxiety (r=0.71), depression (r=0.64), and stress (r=0.67), and significantly negatively correlated with sleep quality (r=-0.68). All correlations are significant at p<0.001. These findings position gadget addiction as one of the strongest predictors of poor mental health among students, consistent with the meta-analysis by Lee & Cho (2024) conducted on a broader Asian sample.

From Carr's neuropsychological perspective, this correlational pattern can be explained through the following mechanisms: excessive gadget use artificially and repeatedly activates the dopaminergic reward system, creating a reinforcement cycle that ultimately depletes the brain's natural dopaminergic capacity. This dopaminergic deficit manifests as depressive symptoms. Meanwhile, hypervigilance toward notifications and fear of missing out (FOMO) chronically activate the amygdala response, producing persistent anxiety (Damayanti & Haryanto, 2024).

4. Regression Analysis: Predictors of Mental Health

Multiple regression analysis was conducted to identify the relative contribution of gadget addiction to each mental health dimension, while controlling for demographic variables.

Table 5. Results of Multiple Regression Analysis: Predictors of Mental Health (n=284)

Predictor	β Anxiety	β Depression	β Stress	β Sleep Dist.	R^2	ΔR^2
Gadget Addiction	.58**	.51**	.54**	-.56**	.50	.31
Daily Screen Time	.21**	.18**	.19**	-.22**		
Gender	.12*	.09*	.11*	-.08*		
School Type†	-.19**	-.22**	-.17**	.21**		
Total Model R^2					**.63**	**.63**

*Note. **p<0.001; *p<0.05; β = standardized beta; †Madrasah Aliyah vs. Senior High School (reference = SHS); Sleep Dist. = Sleep Disturbance. Source: Data Analysis, 2025.*

The multiple regression results reveal that the model as a whole explains 63% of the variance in mental health (R^2=0.63). Gadget addiction is the strongest predictor for all mental health dimensions (β=0.51–0.58). A noteworthy finding is the contribution of school type: madrasah aliyah students showed significantly lower levels of anxiety (β=-0.19), depression (β=-0.22), and stress (β=-0.17) compared to senior high school students, along with better sleep quality (β=0.21). These findings confirm the hypothesis that Islamic values-based education functions as a protective factor against the negative impacts of gadget addiction.

5. Islamic Educational Perspective: Gadget Addiction as a Spiritual Issue
   a. Gadget Addiction as Al-Israf (Wastefulness) and Al-Ghafla (Heedlessness)

The Qur'an and Sunnah provide a rich normative framework for understanding gadget addiction. First, gadget addiction may be categorized as israf (excess/wastefulness), which is explicitly prohibited in Islam. QS. Al-A'raf [7]:31 states: 'Eat and drink, but do not be excessive. Indeed, Allah does not like those who are excessive.' Islamic scholars interpret this prohibition against israf as encompassing the wasteful use of time and time is the most precious resource entrusted by Allah to humankind.

Second, gadget addiction induces a state of ghafla (spiritual heedlessness)—a condition of the soul that is consumed by worldly pursuits to the point of neglecting

dhikrullah (the remembrance of Allah). The Qur'an explicitly warns: 'O you who have believed! Let not your wealth and your children divert you from remembrance of Allah' (QS. Al-Munafiqun [63]:9). In the digital context, gadgets and their contents social media, entertainment, notifications may be understood as a new form of 'amwal' (wealth) that carries the potential to distract from Allah.

Ikhsan and Nurdin (2024) analyzed the phenomenon of gadget addiction from the perspective of Islamic philosophy of education and concluded that the root of the problem lies in the imbalance between quwwah al-'aqliyyah (the rational faculty) and quwwah al-syahwaniyyah (the faculty of desire/appetite). When digital desires are not governed by reason and faith, the condition of addiction becomes inevitable.

b. The Principle of Hifzh Al-'Aql in Maqashid Syariah

One of the primary maqashid (objectives) of Islamic law is hifzh al-'aql (preservation of the intellect). Imam Al-Ghazali noted that the intellect is Allah's most noble gift to humankind, for it constitutes the foundation of taklif (religious obligation). Anything that damages or diminishes cognitive capacity including addictive substances, excessive vain pursuits, and now digital addiction is categorized as either haram or, at minimum, makruh.

When Carr neuroscientifically demonstrates that gadget addiction impairs the capacity for deep thinking, concentration, and consolidative memory, this represents, from the perspective of maqashid syariah, a genuine threat to hifzh al-'aql that must be avoided. Aliyah and Mujib (2024) develop the argument that in the digital age, the principle of hifzh al-'aql must be extended to 'hifzh al-'aql al-raqmi' (preserving the digital intellect) encompassing the obligation to protect cognitive health within an addictive digital environment.

c. The Concept of Nafs and Self-Regulation in Islam

Islamic psychology offers a rich model of the nafs (soul/self) that is directly relevant to understanding the mechanisms of gadget addiction. Al-nafs al-ammarah bi al-su' (QS. Yusuf [12]:53) the soul that commands evil in the digital context signifies the compulsive impulse to continue using gadgets despite awareness of their negative consequences. This is analogous to what modern psychology terms ego depletion—a condition in which the capacity for self-regulation has been exhausted.

The Islamic solution is the cultivation of al-nafs al-muthmainnah through the process of tazkiyatun nafs (purification of the soul). Tazkiyatun nafs involves three stages: takhalli (emptying the soul of its negative traits), tahalli (adorning the soul with noble virtues), and tajalli (the reflection of Allah's light in the soul). In the context of gadget addiction, takhalli means reducing and eliminating compulsive dependence on gadgets; tahalli means filling time with productive activities and acts of worship; and tajalli means attaining a tranquility of soul that does not depend on external stimulation (Wahyuni & Hidayah, 2024).

6. BKI-Based Intervention Model (Islamic Counseling and Guidance)

Based on the synthesis of empirical findings, Carr's theory, and the Islamic educational psychology framework, this study proposes the Integrated Intervention Model Based on BKI-Tazkiyatun Nafs (MIT-BTN) to address gadget addiction among Muslim students. This model consists of three phases across 12 intervention sessions.

Table 6. Integrated BKI-Tazkiyatun Nafs Intervention Model (MIT-BTN)

Phase	Tazkiyah Stage	BKI Technique	Psychological Technique	Target Outcome
Phase I (Sessions 1–4)	Takhalli (Purification)	Islamic narrative counseling; istighfar	Motivational Interviewing; digital self-monitoring	Awareness-raising and commitment to change

Phase	Tazkiyah Stage	BKI Technique	Psychological Technique	Target Outcome
		dhikr; daily muhasabah		
Phase II (Sessions 5–9)	Tahalli (Filling)	Worship guidance (khushu' prayer, tilawah, Monday-Thursday fasting); peer halaqah support	CBT for digital cognitive distortions; exposure-response prevention	Coping skill development & positive alternative activities
Phase III (Sessions 10–12)	Tajalli (Manifestation)	Spiritual muraqabah; Islamic life planning; Qur'anic bibliotherapy	Relapse prevention; Islamic mindfulness (tafakkur)	Maintenance of change & spiritual independence

Note. Source: Developed by the Authors from Lubis & Ananda (2024), Wahyuni & Hidayah (2024), and Al-Ghazali (Ihya 'Ulumuddin).

The MIT-BTN model integrates BKI approaches rooted in the Islamic psychological tradition (tazkiyatun nafs, muraqabah, muhasabah) with evidence-based clinical psychology techniques (CBT, Motivational Interviewing, mindfulness). This integration is essential because research demonstrates that approaches aligned with clients' worldviews and cultural values yield greater effectiveness (Lee & Cho, 2024).

A key aspect of MIT-BTN that distinguishes it from conventional intervention models is the utilization of worship as an active therapeutic strategy. The five daily prayers, for example, function not only as religious rituals but also as scheduled breaks from digital screens, mindfulness practice, and social connection within congregational worship (jama'ah). Qur'anic recitation develops deep reading skills that are precisely what habitual digital skimming undermines (Sholeh & Musbikin, 2023). Fasting trains impulse control, which is the core deficit in gadget addiction.

E. CONCLUSION

This study produced three primary findings. First, it is empirically established that there exists a strong and significant positive correlation between gadget addiction and anxiety (r=0.71), depression (r=0.64), and stress (r=0.67), as well as a significant negative correlation with sleep quality (r=-0.68), among Indonesian students. Gadget addiction is the strongest predictor of poor mental health, explaining 31% of unique variance after controlling for demographic factors.

Second, the perspective of Islamic educational psychology provides a rich and holistic framework for understanding the phenomenon of gadget addiction. By integrating Carr's neuropsychological theory (The Shallows) with Islamic concepts (israf, ghafla, hifzh al-'aql, tazkiyatun nafs), this study demonstrates that gadget addiction is simultaneously a psychological, neurological, and spiritual issue and therefore requires an equally holistic solution.

Third, madrasah aliyah students exhibit significantly lower levels of gadget addiction and its psychological impacts compared to senior high school students, confirming the role of Islamic religious values and practices as a powerful protective factor. This finding has important implications for national education policy, particularly regarding the importance of strengthening religion-based character education.

This study recommends: (1) the government integrate Islamic values-based digital wellness programs into the religious education curriculum in schools; (2) schools implement the BKI-Tazkiyatun Nafs (MIT-BTN) program developed in this research; (3) parents receive

Islamic digital parenting training; and (4) future research test the effectiveness of MIT-BTN through Randomized Controlled Trials (RCT) to obtain evidence of higher confidence levels.

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