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THE ASSOCIATION BETWEEN DIGITAL ADDICTION AND MENTAL HEALTH AMONG VIETNAMESE ADOLESCENTS AND YOUNG PEOPLE: A SYSTEMATIC REVIEW

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ABSTRACT

Objective: To synthesize evidence on the association between digital addiction and mental health among Vietnamese adolescents and young people.

Methods: This systematic review was conducted in accordance with the PRISMA guidelines. Articles were searched in PubMed and Google Scholar from 2016 to 2026 using keywords related to digital addiction and mental health. Cross-sectional studies conducted among Vietnamese adolescent and youth populations were selected based on predefined eligibility criteria. Study quality was assessed using the Joanna Briggs Institute (JBI) critical appraisal tools.

Results: A total of 11 studies involving 12,931 participants were included in the analysis. Forms of digital addiction included internet addiction, smartphone addiction, and social media addiction. The prevalence of digital addiction ranged from 7.3% to over 69.2%, depending on the study population. The findings showed that digital addiction was significantly associated with mental health problems. Specifically, 8 of 11 studies reported an association with depression, 6 of 11 with anxiety, and 5 of 11 with other psychological problems such as stress, loneliness, sleep disturbances, and reduced quality of life.

Conclusion: Digital addiction is significantly associated with mental health problems among adolescents and young people in Vietnam, highlighting the need for appropriate intervention and prevention strategies.

Keywords: Digital addiction; mental health; depression; anxiety; adolescents; Vietnam.

1. INTRODUCTION

Mental health among adolescents and young people is becoming a major global public health concern[1,2]. A recent survey report by the World Health Organization in Vietnam estimated that more than 13% of adolescents aged 10 – 19 years are living with a mental disorder, with anxiety and depression accounting for the highest proportions, contributing to a persistently high prevalence of self-harm or suicidal ideation, reported in one in six surveyed adolescents[2]. In the context of digital transformation and the rapid proliferation of the internet, smartphones, and social media, young people are spending increasing amounts of time on online activities, thereby increasing the risk of developing digital addiction, a pattern of excessive and uncontrolled use of digital devices that may adversely affect mental health[1].

Numerous studies have reported associations between internet addiction, social media addiction, or smartphone addiction and mental health problems such as depression, anxiety, psychological distress, sleep disturbances, and loneliness[1,3,4]. However, in Vietnam, the available evidence has mainly been limited to individual cross-sectional studies, and few synthesis studies have comprehensively evaluated the impact of digital addiction on adolescent mental health. Therefore, conducting a systematic review on the impact of digital addiction on the mental health of Vietnamese adolescents and young people is necessary to synthesize the existing evidence, clarify the extent of this issue, and provide a scientific basis for intervention strategies and policies aimed at protecting mental health in today's increasingly digitalized society.

2. METHODOLOGY

2.1. Design

A systematic review of studies was conducted in accordance with the PRISMA guidelines.

PICO question: How does digital addiction affect mental health among Vietnamese adolescents and young people?

P: Vietnamese adolescents and young people

I: Digital addiction

C: Not applicable

O: Mental health outcomes

2.2. Literature Search Strategy

The literature search was conducted from November 2025 to February 2026 and included articles published in the electronic databases PubMed and Google Scholar over a 10-year period (2016 – 2026).

The study used individual search terms (Table 1), combined with the Boolean operators OR, AND, and NOT, as well as keyword mapping to MeSH terms, to develop the advanced search strategy for PubMed and Google Scholar as follows:

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Table 1. Search keywords

PICO	Keywords	Synonyms
P	Vietnamese adolescent	Vietnamese teenager; Vietnamese youth
I	Digital addiction	Internet addiction; Mobile addiction; Social media addiction
O	Mental health	Mental disorders; Psychological distress
	Depression	Dysthymia; Melancholy
	Anxiety	Uneasiness; Tension
	Psychological distress	Psychological disorder

2.3. Inclusion and exclusion criteria

Eligible articles were cross-sectional studies published within the past 10 years; full-text articles written in English or Vietnamese; conducted among Vietnamese adolescents and young people; carried out in various settings (schools, hospitals, and communities); and reporting mental health outcomes. All included studies were classified as level IV evidence.

Articles were excluded if their titles were not focused on mental health; if they investigated other population groups; or if the full text was unavailable, the data were insufficient, or the publication was a conference abstract or an unpublished thesis.

The literature search, study selection, critical appraisal, and data extraction were performed through the four-stage screening process in accordance with the PRISMA methodology (Figure 1).

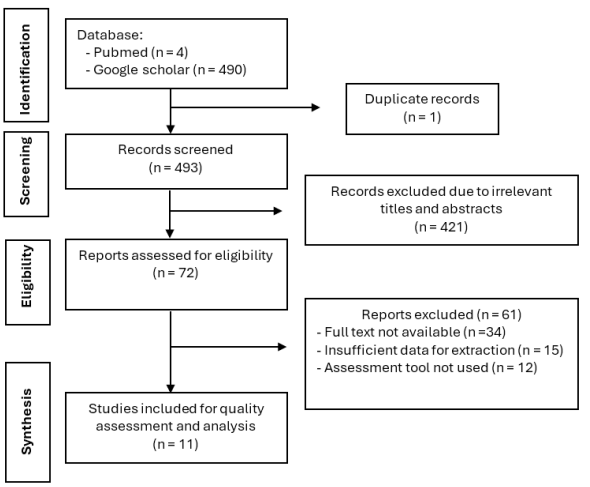

Figure 1. PRISMA flowchart

2.4. Quality Appraisal

The quality assessment of the included studies was conducted independently by two reviewers and cross-checked through peer comparison. In cases of disagreement, a third reviewer was involved in the discussion until consensus was reached. The Joanna Briggs Institute (JBI) critical appraisal tool for cross-sectional studies was used to assess methodological quality. This tool consists of eight criteria, each rated as "yes," "no," "unclear," or "not applicable." A response of "yes" was assigned 1 point, while all other responses were assigned 0 points. Study quality was considered acceptable when the methodological quality score reached at least 60% (a minimum of 5 out of 8 points).

2.5. Data extraction and processing

All records retrieved from the databases were documented in Microsoft Excel and managed using EndNote. Extracted data included information on the first author, year of publication, setting, sample size, study population, age, prevalence of digital addiction, type of digital addiction, measurement tools, impact on mental health, and level of evidence.

Data processing was performed using a descriptive approach, followed by comparative analysis and final synthesis. This approach allowed consideration of intermediate or confounding variables, which are often given less attention in meta-analyses.

3. RESULTS

3.1. General characteristics of the included studies

A total of 11 cross-sectional studies were included in the analysis, comprising an overall sample of 12,931 participants. The selected studies were conducted in Vietnam during the period 2017 – 2025, with one multinational study that included Vietnam.[5] The study populations mainly consisted of adolescents and young people, including lower secondary school students, upper secondary school students, and university students, with ages ranging from 10 to 24 years. Most studies were conducted in school settings [6–8] or university.[9–13] One study was carried out in a hospital setting,[14] one was conducted across three major cities in Vietnam,[15] and one was a multinational study including Vietnam.[5]

The forms of digital addiction examined across the studies included internet addiction, smartphone addiction, social media addiction, and excessive screen time or digital device use. Commonly used instruments to assess digital addiction and mental health disorders included the Internet Addiction Test (IAT),[6,7,12,13] Smartphone Addiction Scale – Short Version (SAS-SV),[9,10,13] Depression Anxiety Stress Scale (DASS-21),[7,10,11] Patient Health Questionnaire (PHQ-9),[13,15] Generalized Problematic Internet Use Scale (GPIUS2),[5] Symptom Checklist-90 (SCL-90),[14] Youth Self-Report (YSR),[12] and Generalized Anxiety Disorder Scale (GAD-7).[8] Most studies demonstrated high methodological quality, with 8 of the 11 studies achieving a score of 8/8, indicating the relatively high reliability of the synthesized evidence.

3.2. Prevalence of digital addiction among Vietnamese adolescents and youth

Studies have shown that the prevalence of digital addiction or excessive digital use among adolescents and young people is relatively high. In a study of lower secondary school students, 51.1% exhibited signs of internet addiction,[6] while another study of pediatric inpatients reported that 43.1% of participants had internet addiction.[14] Among university students, the prevalence of smartphone addiction ranged from 55.9% to 62.9%, with the highest rate observed among third-year students (69.2%).[9] A large-scale study involving more than 5,300 students found that 7.32% showed signs of internet addiction by meeting three or more symptoms on a diagnostic scale.[8] Meanwhile, a multinational study reported that 8.4% of students had problematic internet use, reflecting the substantial prevalence of excessive digital use behaviors among young people in Vietnam.[5]

Table 2. Detailed description of the included studies

No. Author (year), setting	Sample size, population, age	Type, prevalence of digital addiction	Measurement tools	Association with mental health			Evidence strength
				Depression	Anxiety	Other psychological problems	
1. Nguyen Tuong Vien (2018), lower secondary school [6]	360 lower secondary school students, aged 13 – 15 years	Internet addiction (51.1%)	IAT, CES-D	29.2%	–	–	8/8
2. Le Thi Thu Ha (2023), hospital [14]	109 pediatric inpatients, aged 10–24 years	Internet addiction (43.1%)	SCL-90	–	Symptoms present	–	7/8
3. Chau Le Quyen (2024), university [9]	435 medical students, aged 18 – 22 years	Smartphone addiction: 55.9%; highest in third-year students: 69.2%	SAS-SV	–	–	–	8/8
4. Nguyen Thi Hong Anh (2024), university [10]	248 nursing students, aged 18–22 years	Smartphone addiction (62.9%)	SAS-SV, DASS-21	89.0%	75.8%	–	6/8
5. Nguyen Thi Thuc Duyen (2025), university [11]	383 students, aged 18 – 22 years	Social media addiction (TikTok, Facebook)	DASS-21	Symptoms present	Symptoms present	–	5/8
6. Le Thi Hang (2025), university [12]	250 psychology students, aged 18 – 22 years	Digital device/ internet use duration	IAT, YSR	Symptoms present (r = 0.367)	–	Aggression (r = 0.451)	6/8
7. Tran Minh Dien (2023), lower and upper secondary school [8]	5,325 students, aged 11 – 17 years	Internet addiction (≥3 symptoms: 32.7%)	IADQ, GAD-7	–	Moderate: 22.8%; Severe: 7.32%	–	8/8
8. Vu Anh Trong Dam (2023), three major cities in Vietnam [15]	1,891 students and adolescents, aged 15 – 24 years	Social media addiction	PHQ-9, EQ-5D-5L, PIUQ	Increased with severity of social media addiction	–	Increased self-harm Suicidality	8/8
9. Huynh Ngoc Linh (2026), university [13]	447 health sciences students, aged >18 years	Smartphone and internet addiction	SAS-SV, IAT-6, PHQ-9, UCLA-3, PSQI	Symptoms present, β = 0.36 (p < 0.001)	–	Loneliness (β = 0.16)	8/8
10. Le Quang Son (2024), upper secondary school [7]	840 upper secondary school students, aged 15 – 18 years	Internet addiction	s-IAT, DASS-21	Symptoms present (r = 0.36)	Symptoms present (r = 0.420)	Stress (r = 0.466)	8/8
11. Balhara (2019), eight countries including Vietnam [5]	2,643 university students, aged 18 – 21 years	Problematic internet use	GPIUS2, PHQ-ADS	Associated with excessive internet use	Associated with excessive internet use	Distress	8/8

3.3. Association between digital addiction and depression

The findings from 7 of the 11 included studies indicated a clear association between digital addiction and depressive symptoms. One study among lower secondary school students reported that 29.2% of participants had depressive symptoms, and students with internet addiction were 2.26 times more likely to experience depression than those without internet addiction.[6] Among nursing students, 89.0% showed signs of depression according to the DASS-21, the majority of whom also exhibited smartphone addiction.[10] In addition, structural equation modeling in a study of health sciences students showed that internet addiction was significantly associated with higher depression scores ($\beta = 0.36$; $p < 0.001$).[13] In studies on social media addiction, depression scores increased with the severity of addiction and were also associated with a higher risk of self-harm and reduced quality of life.[13,15]

3.4. Association between digital addiction and anxiety

Anxiety was one of the most common psychological disorders associated with excessive digital use, and this symptom was reported in 8 of the 11 included studies. A large-scale study among students found that 22.8% of participants had moderate anxiety, while 7.32% had severe anxiety.[8] Among nursing students, 75.8% exhibited anxiety symptoms, and smartphone addiction was associated with a 2.5-fold increase in the risk of anxiety.[15] Another study reported a positive correlation between the level of internet use and anxiety ($r = 0.420$).[7] In addition, several studies on social media use documented the co-occurrence of anxiety and depression, particularly among individuals with high-frequency social media use[11,15].

3.5. Other mental health disorders associated with digital addiction

In addition to depression and anxiety, digital addiction was also associated with a range of other psychological disorders and mental health problems, as reported in 10 of the 11 included studies. A study among psychology students showed that time spent using digital devices was correlated with the overall score of mental health problems ($r = 0.412$), as well as with aggressive behavior ($r = 0.451$) and thought-related problems ($r = 0.339$)[12]. Among health sciences students, internet addiction, or excessive internet use, was also associated with poorer sleep quality ($\beta = 0.27$) and lower levels of social support ($\beta = -0.25$), thereby increasing psychological distress.[13] Smartphone addiction was also associated with feelings of loneliness ($\beta = 0.16$).[13] In addition, several studies reported that social media addiction may increase the risk of self-harm behaviors and reduce quality of life.[13,15]

4. DISCUSSION

4.1. Relationship between digital addiction and mental health among Vietnamese adolescents and youth

The findings of this systematic review indicate that digital addiction is consistently associated with mental health problems among adolescents and young people in Vietnam, particularly depression, anxiety, and other psychological disorders. The synthesized studies showed that the prevalence of internet or smartphone addiction among school and university students was relatively high, ranging from approximately 32.0% to over 60.0%. In addition, several studies reported statistically significant associations between the level of internet use and symptoms of depression or anxiety.

These findings are consistent with the broader trend reported in international research. A systematic review on the effects of social media on adolescent mental health found that time spent on social media, level of engagement, and degree of dependence were all associated with depression, anxiety, and psychological distress.[1] This suggests that the increasing use of digital platforms in daily life may serve as a potential risk factor for adolescent mental health. A recent systematic review and meta-analysis on digital addiction among adolescents also showed that individuals with digital addiction had significantly higher risks of multiple mental health problems, including depression (OR = 1.76), anxiety (OR = 2.14), and stress (OR = 2.15).[3] These findings are consistent with those synthesized in the present review and further strengthen the evidence regarding the negative impact of digital addiction on mental health.

4.2. Potential mechanisms explaining the association between digital addiction and psychological disorders

Several biopsychosocial mechanisms may explain the association between digital addiction and mental health disorders among adolescents. Reduced face-to-face social interaction and increased feelings of loneliness have been considered important mechanisms. One study showed that loneliness was moderately positively correlated with internet addiction ($r = 0.291$).[4] This suggests that individuals who feel lonely may be more likely to use the internet excessively in search of social connection; however, excessive internet use may in turn reduce real-life interactions, thereby creating a vicious cycle between loneliness and internet addiction.

In addition, internet addiction may function as a psychological coping mechanism. Several studies have shown that adolescents with depressive symptoms tend to use the internet or online activities to regulate negative emotions. However, this behavior may increase the risk of developing internet addiction and further exacerbate depressive symptoms.[3] At the same time, behavioral and physiological factors, particularly sleep disturbances and sedentary behavior, may also play a mediating role. Many studies have indicated that prolonged use of digital devices, especially at night, can disrupt circadian rhythms and impair sleep quality, thereby adversely affecting mental health.[4]

4.3. Contextual characteristics of Vietnam

A notable finding of this review is that most of the included studies were conducted among school and university students, reflecting the rapid increase in internet and digital device use among young people in Vietnam today. According to several reports, adolescents are the group with the highest frequency of internet use because of their needs for learning, entertainment, and social communication.[2] Compared with international reviews, the findings of this study suggest that the prevalence of digital addiction among Vietnamese adolescents tends to be relatively high, particularly among university students. This may be related to several factors, including the rapid spread of smartphones and social media, academic pressure and the growing demand for online entertainment, as well as the limited availability of educational programs on safe and healthy internet use.

This systematic review has several limitations that should be considered when interpreting the findings. First, all included studies used a cross-sectional design; therefore, they only allow the identification of associations between digital addiction and mental health, without establishing the direction of the relationship or causality. Accordingly, it remains unclear whether digital addiction contributes to mental health problems, or whether individuals with

mental health problems are more likely to develop problematic dependence on digital technologies. In addition, differences across studies in the conceptualization of digital addiction, measurement tools, and criteria used to assess mental disorders or psychological symptoms may have increased the heterogeneity of the findings. Most included studies also relied on self-reported data, which may be subject to information bias and reporting bias. Furthermore, the representativeness of study samples in Vietnam may be limited because of differences in geographic areas, age groups, and educational and social contexts. Therefore, further longitudinal studies using standardized measurement approaches are needed to clarify the nature of this association.

5. CONCLUSION

This systematic review synthesized evidence from 11 studies conducted in Vietnam to assess the association between digital addiction and mental health among adolescents and young people. The findings indicate that excessive use of the internet, smartphones, and social media is consistently associated with mental health problems, particularly depression, anxiety, psychological distress, loneliness, sleep disturbances, reduced face-to-face social interaction, and increased negative emotions. The evidence also showed that the prevalence of internet addiction or smartphone addiction among school and university students was relatively high, suggesting that this is a public health issue in Vietnam that warrants greater attention.

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