Screen Addiction and Mental Health Challenges among Ghanaian Basic School Children: A Management and Educational Policy Perspective

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DOI: https://doi.org/10.51244/IJRSI.2026.1315PH00114

Received: 17 May 2026; Accepted: 22 May 2026; Published: 20 June 2026

ABSTRACT

The rapid proliferation of digital screens, smartphones, tablets, television sets, and computer devices has significantly altered the behavioural landscape of childhood globally. In Ghana, accelerating mobile internet penetration and the COVID-19-era normalization of screen-based learning have placed basic school children at heightened risk of screen addiction, with emerging evidence linking excessive screen exposure to a range of mental health challenges, including anxiety, depression, attention deficits, sleep disturbances, and social withdrawal. This narrative literature review synthesizes global and African evidence on screen addiction and its mental health consequences among children of basic school age (5–15 years), with specific attention to the Ghanaian educational and public health context, and examines prevailing management and educational policy frameworks. A narrative review methodology was employed. Literature was sourced from PubMed, Google Scholar, JSTOR, African Journals Online (AJOL), and grey literature including WHO, UNESCO, UNICEF, and Ghana Education Service policy documents. Studies published between 2010 and 2024 were included, with emphasis on sub-Saharan African and low-to-middle income country contexts. Evidence consistently links excessive screen time among children to anxiety, depression, attention-deficit/hyperactivity disorder (ADHD)-like symptoms, sleep disruption, reduced empathy, and poor academic performance. In Ghana, rudimentary screen governance in basic schools, inadequate mental health services, and limited parental digital literacy compound the problem. Existing policy frameworks, including the National Child and Adolescent Health Policy and the Ghana ICT4AD Policy, are largely silent on screen addiction and child digital mental health. Screen addiction among Ghanaian basic school children represents an emergent public health and educational governance challenge. An integrated, multi-stakeholder Digital Wellness and Child Mental Health Policy Framework is urgently needed, embedding digital literacy, screen-time governance, school-based mental health services, and parental engagement within Ghana's basic education management architecture.

Keywords: Screen addiction, digital media, mental health, basic school children, Ghana, educational policy, child health management, screen time

INTRODUCTION

The twenty-first century has been fundamentally defined by the digital revolution, and nowhere is this transformation more visibly — and perhaps more consequentially felt than in childhood. Across the globe, children are encountering screens earlier, spending more time on them, and navigating increasingly immersive digital environments that are deliberately engineered to sustain engagement (Twenge & Campbell, 2019). The smartphone, once a novelty of adult life, is now a childhood fixture; tablets have become ubiquitous educational tools; and platforms like YouTube Kids, TikTok, and online gaming ecosystems command hours of children's daily attention.

Screen addiction, defined in the literature as a pattern of excessive, compulsive, and uncontrolled engagement with screen-based devices or digital content that interferes with physical health, psychological functioning, social development, or educational engagement (Lam, 2014; Cheng & Li, 2014), has emerged as one of the defining child health concerns of the digital era. The World Health Organization's inclusion of 'gaming disorder' in the International Classification of Diseases (ICD-11) in 2019 marked a pivotal recognition that addictive screen behaviours constitute a clinically significant public health problem (WHO, 2019).

In sub-Saharan Africa, and specifically in Ghana, the screen addiction discourse has been slower to develop despite a rapidly evolving technological landscape. The expansion of 4G mobile broadband, the proliferation of low-cost smartphones, and the COVID-19 pandemic's acceleration of digital and remote learning have dramatically increased screen exposure among Ghanaian school-age children (Boateng & Amankwah, 2022). Yet policy responses — from the Ghana Education Service (GES), the Ministry of Health, and the Ministry of Communications and Digitalization have remained fragmented and largely unprepared to address the mental health dimensions of children's screen engagement.

This narrative literature review is motivated by the pressing need to synthesize the available evidence and situate it within the Ghanaian basic school context, with a view to informing management and educational policy. The basic school level, comprising kindergarten through junior high school (ages 5–15), represents the formative period in which digital habits, psychological dispositions, and health behaviours are shaped for life. Policy interventions at this stage carry the highest potential for long-term impact.

Aim of the Review

This narrative review aims to:

i. Synthesize global and African evidence on the prevalence and patterns of screen addiction among children of basic school age.

ii. Examine the mental health consequences of screen addiction in children, with particular reference to the Ghanaian context.

iii. Critically appraise existing management and educational policy frameworks for addressing screen addiction and child digital mental health in Ghana.

iv. Propose a conceptual policy framework for integrating screen addiction management into Ghana's basic education governance architecture.

REVIEW METHODOLOGY AND SEARCH STRATEGY

This review employs a narrative synthesis approach, which is appropriate for synthesizing heterogeneous bodies of literature on a complex, multi-disciplinary topic (Green et al., 2006). A systematic narrative review does not aim for exhaustive meta-analytic pooling but rather seeks to construct a comprehensive, thematically organized account of the field's intellectual landscape.

Literature was retrieved from PubMed/MEDLINE, Google Scholar, JSTOR, Scopus, and the African Journals Online (AJOL) database. Grey literature was sourced from WHO, UNICEF, UNESCO, the Ghana Health Service (GHS), the Ghana Education Service (GES), and the Ministry of Communications and Digitalisation. Search terms included: 'screen addiction children,' 'excessive screen time children mental health,' 'digital media addiction Ghana,' 'smartphone addiction school children Africa,' 'screen time policy basic schools,' and 'child mental health Ghana.' Studies published between 2010 and 2024 were prioritized, with seminal works before 2010 included where foundational.

Inclusion criteria were: peer-reviewed empirical studies, systematic reviews, meta-analyses, and policy documents; studies involving children aged 5–15 years; and English-language publications. Studies primarily focused on adult populations or on specific clinical populations without relevance to school settings were excluded. A total of 68 sources form the evidence base for this review.

Theoretical and Conceptual Framework

Understanding screen addiction and its mental health consequences in children requires grounding in multiple theoretical traditions. This review adopts an integrated theoretical lens drawing on three complementary frameworks:

The Behavioral Addiction Model

Griffiths' (2005) components model of addiction encompassing salience, mood modification, tolerance, withdrawal, conflict, and relapse provides the foundational conceptualization of screen addiction as a behavioral addiction on par with substance use disorders. Applied to children, this model recognizes that the neurologically immature prefrontal cortex renders children uniquely susceptible to reward-circuit hijacking by dopaminergic stimuli embedded in digital platforms. Platforms algorithmically calibrated for engagement variable reward schedules, social validation mechanisms, and autoplay features exploit precisely these developmental vulnerabilities (Radesky & Christakis, 2016).

Ecological Systems Theory

Bronfenbrenner's (1979) Ecological Systems Theory situates child development within nested systems the microsystem (family, school), mesosystem (school-home interactions), exosystem (community, media), and macrosystem (cultural norms, national policies). This framework is particularly valuable for a policy-oriented review: it illuminates how screen addiction is not merely an individual behavioral problem but an ecological one, shaped by family digital practices, school governance environments, community infrastructure, and national policy architectures. Effective policy intervention, this framework implies, must operate simultaneously across multiple systems.

The Health Belief Model

The Health Belief Model (Rosenstock, 1974) explains parents', teachers', and policymakers' responses to screen addiction as a health threat through the lens of perceived susceptibility, perceived severity, perceived benefits of action, and perceived barriers. Evidence suggests that Ghanaian parents and educators may have low perceived susceptibility to screen addiction risks partly because digital engagement is frequently equated with educational advancement and high perceived barriers to restriction (e.g., children's social exclusion, educational disadvantage). This framework guides the policy analysis in Section 5 of this review.

Screen Addiction Among Children: Conceptualization, Prevalence and Patterns

Defining Screen Addiction in Children

The terminology in the field is contested: 'screen addiction,' 'problematic screen use,' 'internet gaming disorder,' 'smartphone addiction,' and 'excessive screen time' are often used interchangeably in the literature, though they carry distinct clinical and measurement connotations (Billieux et al., 2015). For this review, 'screen addiction' is used broadly to encompass compulsive, uncontrolled engagement with any screen-based medium television, smartphone, tablet, video game console, or computer to a degree that impairs cognitive, emotional, social, or academic functioning. This usage is consistent with the conceptualization of internet use disorder proposed for further research in DSM-5 (APA, 2013) and the ICD-11's gaming disorder criteria (WHO, 2019).

The American Academy of Pediatrics (AAP, 2016) guidelines recommend no screen time for children under 18 months (except video-chatting), limited use for children aged 2–5 years, and a maximum of two hours per day of recreational screen time for children aged 6 and above. The World Health Organization (2019) similarly recommends no sedentary screen time for children under 2 years and a maximum of one hour per day for ages 3–4. These benchmarks, while debated in the literature, provide a practical threshold for defining 'excessive' use.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI | Volume XIII Issue XV June 2026 | Special Issue on Public Health

Global Prevalence

Prevalence estimates of screen addiction or problematic screen use among school-age children vary considerably depending on the measurement instrument, age group, and cultural context. A systematic review by Kuss et al. (2020) reported global internet addiction prevalence rates among children and adolescents ranging from 1.2% to 37.9%, with higher rates observed in Asian contexts. Meta-analyses of smartphone addiction among children and adolescents report pooled prevalence rates of approximately 19–27% (Cheng & Li, 2014; Cha & Seo, 2018).

Television viewing patterns remain a significant concern in low-income contexts. A WHO global study involving 44 countries found that over 60% of children aged 11–15 watched television for three or more hours on school days, far exceeding recommended limits (Inchley et al., 2016). Video gaming represents another high-prevalence domain, with the Entertainment Software Association reporting that approximately 76% of children under 18 in the United States play video games regularly, and growing proportions in Africa are now accessing mobile gaming platforms.

Patterns of Screen Use Among Ghanaian Basic School Children

Empirical data specifically on screen addiction among Ghanaian basic school children remains limited, representing a significant research gap. However, available evidence paints a concerning picture. Boateng and Amankwah (2022) found that among Ghanaian secondary school students, many of whom were exposed to digital devices during their basic school years, average daily screen time had risen to 6.2 hours post-COVID, with 58.4% exceeding WHO-recommended limits. A study by Owusu-Acheaw and Larson (2015) found that Ghanaian secondary school students used the internet for an average of 4.3 hours daily, with YouTube, WhatsApp, and gaming constituting the dominant activities.

Two recent cross-sectional studies provide the only available data specifically on Ghanaian basic school children. Kyei-Arthur et al. (2024) surveyed children aged 8–17 and found that 90.0% had used the internet. Smartphones were the most common access device (45.7%), followed by internet café facilities (21.7%) and laptops or desktop computers (21.6%). Social media usage was reported by 87.5% of respondents, with TikTok being the dominant platform (88.7% of social media users). Entertainment was cited as the primary reason for screen use by 87% of children, well ahead of communication or academic purposes (Kyei-Gyamfi, 2024).

The COVID-19 pandemic is recognized as an inflection point in children's screen engagement in Ghana. The closure of schools from March 2020 to January 2021 drove a sharp increase in television and internet-based learning, with the GES deploying TV and radio broadcasts as substitute educational platforms. While these interventions preserved learning continuity, they also normalized prolonged screen engagement among children as young as five, with little structured guidance on limits or digital hygiene (GES, 2020; UNICEF Ghana, 2021).

The availability of low-cost smartphones, with Android devices from as little as GHS 300–500, has widened screen access across socioeconomic strata in Ghana. A survey by the Ghana Statistical Service (2021) reported smartphone ownership among households with school-age children at 63.4% nationally and over 80% in urban areas, with many children having unsupervised access to devices for multiple hours daily. Validated clinical measures of screen addiction specifically for this age group remain absent from the literature.

Ghana possesses the most detailed empirical data on basic school children’s screen use in the region, with studies showing 90% internet access, 87.5% social media use (dominated by TikTok), and average daily screen time reaching 6.2 hours post-COVID, 58.4% exceeding WHO limits. However, Ghana has no explicit child screen-addiction policy, no dedicated child mental health framework, and no validated clinical screening tools for problematic use. In contrast, Nigeria has recently revamped its national mental health policy with a task-shifting model that could theoretically integrate screen-use screening, but it lacks Ghana’s population-level data on basic school children. Neither country has school screen-time regulations or digital wellness education

mandates, and both face the post-COVID legacy of normalized prolonged screen engagement from as young as age five.

South Africa also has the most progressive policy infrastructure, its National Mental Health Policy Framework (2023–2030) prioritizes youth mental health, and validated screeners like the SDQ exist, yet it explicitly omits child screen addiction, and implementation remains weak due to resource constraints, data costs, and privacy concerns. Across all three countries, the core gap is identical: strong international evidence linking addictive screen use to poorer mental health has not translated into national policies. Urgent shared priorities include adapting culturally validated addiction screening tools, conducting population-representative surveys (as Ghana has begun), and amending existing mental health frameworks to explicitly address digital wellness for basic school children before current usage patterns become irreversible baselines.

Mental Health Consequences of Screen Addiction in Basic School Children

The mental health literature on excessive screen use in children has grown substantially over the past decade. Evidence converges around several primary domains of harm, though the mechanisms vary by screen type, content, and developmental stage.

Anxiety and Depression

The association between excessive screen use and internalizing disorders, particularly anxiety and depression in school-age children, is one of the most consistently reported findings in the literature. Twenge and Campbell (2019) analyzed longitudinal data from over 500,000 adolescents in the United States and found that those using screens more than five hours per day were 66% more likely to have at least one suicide risk factor compared to non-users. Importantly, the relationship was dose-dependent: every additional hour of screen time beyond two hours per day was associated with incrementally higher depressive symptom scores.

The mechanisms linking screen use to anxiety and depression are multifactorial. Social comparison theory (Festinger, 1954) explains how children's exposure to curated, idealized peer content on platforms like Instagram and TikTok generates chronic experiences of inadequacy, envy, and social anxiety. Fear of missing out (FOMO), the pervasive apprehension that peers are experiencing rewarding social events from which one is absent, has been identified as a potent mediator of the screen time-anxiety relationship in children and adolescents (Przybylski et al., 2013). In the Ghanaian context, Osafo and Akotia (2021) reported growing rates of anxiety and emotional disturbance among urban Ghanaian school children, which informant interviews consistently linked to smartphone exposure.

Attention Deficits and Cognitive Impairment

The relationship between excessive screen use and attentional dysregulation in children is one of the most extensively studied and empirically robust areas of the field. A meta-analysis by Cheng et al. (2020) of 19 prospective studies found that children with high television and device exposure during early childhood had significantly elevated risks of attention-deficit/hyperactivity disorder (ADHD)-like symptomology by school age. The neurological mechanisms involve the desensitization of dopaminergic reward circuits: the rapid-fire stimulation delivered by screen media, particularly short-form video content, trains the developing brain to expect constant novelty and high-intensity stimulation, rendering the comparatively slower pace of classroom instruction frustrating and unstimulating (Christakis, 2009).

In a Ghanaian study, Asare and Danquah (2017) found significant associations between television viewing duration and impaired attention and poor academic performance among primary school children in Accra, with teachers reporting increasing difficulty sustaining children's in-class focus over a ten-year observation period. These findings are corroborated by GES classroom assessment data showing declining attention spans and rising rates of learning difficulty in urban public basic schools (GES, 2022).

Sleep Disturbance

Sleep is foundational to children's cognitive development, emotional regulation, immune function, and physical growth, yet it is one of the most consistently documented casualties of excessive screen exposure. The mechanisms are well-established: blue-light emission from screens suppresses melatonin production and disrupts circadian rhythm, while the cognitively and emotionally stimulating content of screens raises cortisol and delays sleep onset (Hale & Guan, 2015). The common practice of bedroom screen use with tablets or smartphones serving as both entertainment and nighttime companions has been identified as a particularly high-risk behaviour.

A systematic review by Hale and Guan (2015) of 67 studies found that screen-based media use was associated with delayed bedtime, fewer total sleep hours, and poorer sleep quality in children and adolescents. Children obtaining less than the recommended 9–11 hours of sleep per night exhibit elevated rates of irritability, mood dysregulation, impaired academic learning, and immune suppression (Paruthi et al., 2016). In Ghana, Asante and Agyemang (2019) documented that 62% of basic school children in urban Kumasi reported using screens (primarily television and smartphones) within one hour of bedtime, with 44% receiving less than eight hours of sleep on school nights.

Social Withdrawal and Impaired Interpersonal Development

Paradoxically, despite social media's ostensible social function, excessive screen use has been linked to social withdrawal, reduced face-to-face social competence, and impaired empathy development in school-age children (Uhls et al., 2014). Uhls et al. conducted a landmark experimental study finding that children who spent five days without screen devices at an outdoor camp showed significantly greater improvement in their ability to read nonverbal emotional cues compared to a control group, suggesting that screen use actively suppresses the development of social-emotional skills.

For Ghanaian basic school children, who are navigating simultaneously the social demands of school, family, and community, impairments to social development carry significant cultural consequences. Ghana's communal cultural norms, embedded in concepts of communal responsibility, elder respect, and collective identity, require sophisticated social and emotional competencies that digital displacement of social learning may undermine. Preliminary qualitative studies in Ghana suggest that parents and teachers are observing increased social reticence, reduced participation in communal activities, and declining interpersonal conflict resolution skills among screen-heavy children (Owusu-Acheaw & Larson, 2015).

Aggression and Behavioural Dysregulation

The relationship between violent or aggressive digital content and children's behavioural outcomes has been studied extensively since the pioneering work of Bandura's (1977) Social Learning Theory. Meta-analytic evidence from Anderson et al. (2010) covering over 136,000 participants globally found consistent, robust associations between violent video game exposure and aggressive thoughts, feelings, and behaviours in children. These effects were found across experimental, cross-sectional, and longitudinal studies.

The concern extends beyond explicit violence to the general emotional dysregulation associated with screen addiction. Children who exhibit withdrawal symptoms when screens are taken away, anger, hostility, and emotional meltdowns- demonstrate patterns of behavioural dysregulation that disrupt classroom management, family dynamics, and peer relationships (Lam, 2014). Ghanaian teachers have increasingly reported such behavioural profiles in classroom settings, though systematic data remain scarce (Asare & Danquah, 2017).

Poor Academic Performance

The academic consequences of screen addiction in basic school children operate through multiple pathways: reduced homework time, disrupted sleep, impaired attention, and displaced reading and cognitive engagement activities (Sharif & Sargent, 2006). A large-scale study by Weis and Cerankosky (2010) found that boys who

received video game systems showed significantly lower reading and writing scores four months later compared to a control group, a striking experimental demonstration of educational displacement.

In Ghana, the Basic Education Certificate Examination (BECE) performance data and school-based assessments increasingly reflect the educationally disruptive effects of unchecked screen engagement. The National Education Assessment (NEA) data show that children in urban areas where screen access is highest do not uniformly outperform rural peers on literacy and numeracy, suggesting that digital access without governance may be displacing educational activities rather than enhancing them (Ministry of Education, Ghana, 2023).

The Ghanaian Context: Risk Factors, Vulnerabilities and Enabling Conditions

Rapid Digital Penetration Without Governance

Ghana's digital trajectory is impressive by sub-Saharan African standards: as of 2023, internet penetration stood at approximately 58%, mobile subscriptions exceeded 40 million, and the national fibre backbone had been extended to all regional capitals (Ghana Statistical Service, 2023). The Digital Ghana Agenda and the Smart Schools Programme reflect national ambitions to leverage technology for educational advancement. However, this rapid digitalization has outpaced governance: there are no national regulations governing children's screen time, no mandatory digital wellness education in basic school curricula, and no screening protocols for screen addiction in school health programmes (Ministry of Communications and Digitalisation, 2020).

Parental Digital Literacy Gaps

Ghana's intergenerational digital divide means that many parents of basic school children, particularly in peri-urban and rural areas, have a limited understanding of the risks associated with excessive screen exposure. Screen use is frequently equated with educational progress, with parents viewing device access as a marker of socioeconomic aspiration and educational investment (Asante & Agyemang, 2019). This misperception creates an environment in which children's screen use is encouraged rather than governed, and in which parental digital literacy interventions are critically needed.

Inadequate School Mental Health Infrastructure

Ghana's basic schools are largely unequipped to identify, respond to, or manage screen-related mental health presentations in children. The student-to-school counsellor ratio in public basic schools is estimated at over 1:5,000, far exceeding the internationally recommended standard of 1:250 (WHO, 2020; Ghana Education Service, 2022). Mental health literacy among basic school teachers is limited, and referral pathways to child psychiatry or clinical psychology services are largely absent. Stigma surrounding mental health help-seeking further suppresses reporting and intervention uptake among affected families.

Post-COVID Digital Normalization

The COVID-19 pandemic has left a lasting imprint on Ghanaian children's digital habits. The GES-mandated shift to broadcast and online learning from March 2020 introduced millions of basic school children to extended daily screen engagement in the name of educational continuity. While a necessary emergency response, this period established screen dependence patterns that persisted beyond school reopening, with many children continuing to use devices for entertainment for 4–6 hours daily even after schools resumed (UNICEF Ghana, 2021). Post-pandemic educational recovery programmes have focused on learning loss without adequately addressing the digital behavioural legacies of the pandemic period.

Cultural Factors and Community Attitudes

Cultural attitudes in Ghana present both barriers and enablers for addressing screen addiction. The traditional emphasis on communal child-rearing, elder authority, and moral discipline within families and schools provides a social infrastructure for structured behavioural intervention. Religious institutions, particularly

churches and mosques, which hold significant influence over Ghanaian family life, represent underutilized channels for digital wellness messaging. Conversely, cultural norms of childhood obedience and stoicism may suppress children's self-reporting of screen-related psychological distress, making identification of affected children more challenging (Osafo & Akotia, 2021).

Management and Educational Policy Frameworks: A Critical Review

Global Policy Landscape

Internationally, several jurisdictions have taken legislative and institutional action on screen addiction in children. South Korea enacted the Shutdown Law (2011), mandating that online gaming platforms prevent access for users under 16 between midnight and 6 a.m., a policy credited with reducing adolescent gaming addiction rates, though also critiqued for its enforceability (Choo et al., 2015). China's National Press and Publication Administration introduced strict online gaming time limits for minors in 2021, restricting play to three hours per week on weekends and public holidays. France banned smartphones in primary and secondary schools in 2018 under the Loi Pour une École de la Confiance, citing attention and social well-being concerns.

At the multilateral level, the United Nations Convention on the Rights of the Child (UNCRC) General Comment No. 25 (2021) on children's rights in relation to the digital environment provides a comprehensive rights-based framework, obligating state parties to protect children from digital harm, including addictive design features, and to ensure digital access does not compromise children's rights to health, education, and protection.

Ghanaian Policy Frameworks: An Appraisal

Ghana has developed several policies relevant to child health and digital governance, but none comprehensively address screen addiction and its mental health implications:

National Child and Adolescent Health Policy (2015): This policy articulates Ghana's commitments to child health promotion, mental health, and protection. However, it predates the current digital context and contains no provisions on screen addiction, digital mental health, or media-related health risks.

Ghana ICT4AD Policy (2003, revised 2018): This policy governs Ghana's ICT development trajectory, including its application in education. While it promotes digital access for learners, it does not address digital wellness, screen time governance, or the protection of children from addictive digital design, a significant omission in an era of algorithmically optimized platforms.

Smart Schools Programme (2022): This GES-led initiative equips selected basic schools with digital infrastructure and devices. Despite its educational ambition, it lacks a digital wellness component or a teacher training programme on managing children's screen engagement.

Mental Health Act (Act 846, 2012): Ghana's Mental Health Act provides a legislative foundation for mental health service delivery but focuses primarily on clinical psychiatry and does not address school-based mental health services, child-specific mental health programming, or behavioural addictions.

This policy audit reveals a critical governance vacuum: Ghana currently has no dedicated policy instrument addressing the intersection of children's screen use, mental health, and educational management. This vacuum is compounded by institutional fragmentation; relevant mandates are distributed across the Ministry of Health, the Ministry of Education, the Ministry of Communications and Digitalisation, and the National Media Commission, without a coordinating mechanism.

School-Level Management Practices

At the school management level, practices governing children's screen use in Ghanaian basic schools are largely informal and inconsistent. A minority of private schools, particularly those serving upper-income families, have implemented smartphone bans during school hours and digital wellness components in their

health education programmes (Ghana Independent Schools Association, 2023). Public basic schools, which serve the majority of Ghana's 5.4 million basic school enrolees, have no standardized policies on device use, and many headteachers lack the authority or resources to enforce restrictions.

Teacher training programmes at Colleges of Education have not incorporated digital wellness education or child screen addiction management, leaving classroom teachers without the tools to identify, counsel, or refer screen-affected children (National Teaching Council, 2022). School health programmes, where operational, focus on communicable diseases, nutrition, and sanitation, with no mental health or digital wellness components.

Proposed Integrated Policy Framework: Digital Wellness and Child Mental Health for Ghanaian Basic Schools

The evidence synthesized in this review strongly supports the development and implementation of an Integrated Digital Wellness and Child Mental Health Policy Framework (IDWCMH-PF) for Ghanaian basic schools. Drawing on the Ecological Systems Theory, the Health Belief Model, and international best practices, the following six-pillar framework is proposed:

Pillar 1: National Legislation and Policy Reform

The Government of Ghana should enact or revise existing policy instruments to explicitly address screen addiction and child digital mental health. This includes: revising the National Child and Adolescent Health Policy to incorporate digital health provisions; establishing evidence-based national screen-time guidelines for children by age group; and legislating against the use of psychologically manipulative design features (variable reward schedules, autoplay, push notifications) in children's digital platforms.

Pillar 2: Curriculum Integration — Digital Health Literacy

The GES should integrate digital health literacy into the basic school curriculum from Primary 3 through JHS 3. Content should cover responsible screen use, recognizing addiction symptoms, emotional management in digital environments, cybersafety, and the neuroscience of screen addiction in age-appropriate formats. This content should be embedded within the existing Health and Physical Education subject area and supported by trained teachers.

Pillar 3: School-Based Mental Health Services

Every basic school, beginning with district capitals and progressively expanding, should have access to a trained school counsellor with competencies in child mental health, digital wellness, and screen addiction identification and first-line intervention. A national school counselling expansion programme, linked to the colleges of education and university health training programmes, should be institutionalized with sustainable funding from the Ghana Education Trust Fund (GETFund).

Pillar 4: Teacher Training and Capacity Building

Pre-service teacher training at Colleges of Education and in-service professional development programmes must incorporate child digital health literacy, screen addiction awareness, and classroom screen management strategies. The National Teaching Council (NTC) should include digital wellness competencies in the teacher professional standards framework, and regular continuing professional development (CPD) modules on digital health should be mandated.

Pillar 5: Parental Engagement and Community Mobilization

Parent-Teacher Associations (PTAs) and School Management Committees (SMCs) should be equipped with standardized digital wellness education materials, co-developed by the GES and the Ghana Health Service. Faith-based organizations, community health volunteers, and the National Commission for Civic Education

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI | Volume XIII Issue XV June 2026 | Special Issue on Public Health

(NCCE) should be engaged as community channels for digital wellness messaging. A national 'Screen-Smart Family' campaign analogous to existing hygiene and nutrition campaigns should be launched.

Pillar 6: Surveillance, Research, and Monitoring

A national child digital health surveillance system embedded within the Ghana School Health Programme and Ghana Demographic and Health Survey cycles should be established to track trends in screen use, addiction prevalence, and associated mental health outcomes among basic school children. The Ghana Health Service should develop standardized screening tools for use in school health programmes, and the GES should commission biennial research on the digital health status of basic school children.

DISCUSSION

This narrative review has synthesized evidence pointing to a consistent, multidimensional public health and educational challenge posed by screen addiction among basic school-age children globally and in Ghana specifically. The convergence of international evidence on mental health consequences (anxiety, depression, attention deficits, sleep disturbance, social impairment, and academic decline) with the Ghanaian contextual risk factors (rapid unregulated digitalization, parental digital literacy gaps, inadequate school mental health services, and policy vacuum) presents a compelling case for urgent, coordinated action.

A central argument of this review is that screen addiction in Ghanaian basic school children cannot be addressed through isolated individual or family-level behavioural change strategies alone. As Bronfenbrenner's ecological framework makes clear, the screen environment of a Ghanaian child is shaped by forces operating at the macrosystem level platform design, national policy, media regulation that require governmental and institutional intervention. The finding that existing Ghanaian policy frameworks are largely silent on screen addiction and child digital mental health is particularly concerning, given the pace of digital change and the evidence of harm already accumulating in Ghanaian school settings.

The post-COVID normalization of extended screen engagement among Ghanaian basic school children represents both a challenge and an opportunity. Policymakers who acted decisively to deploy digital learning during the pandemic can act equally decisively to govern the digital environment in its aftermath. The international examples of South Korea, China, and France, despite their different socio-political contexts, demonstrate that state intervention in children's digital environments is both politically feasible and potentially effective.

The proposed IDWCMH-PF draws strength from its multi-level, multi-stakeholder architecture. By simultaneously addressing policy, curriculum, school mental health services, teacher capacity, parental engagement, and surveillance, it avoids the fragmentation that has characterized existing Ghanaian responses to child health challenges. The framework is also contextually anchored: it leverages existing Ghanaian governance structures (GES, GHS, PTAs, SMCs, faith institutions) rather than proposing entirely new institutional architectures, enhancing its political feasibility and potential for sustainability.

LIMITATIONS OF THE REVIEW

This review has several limitations that should be noted. As a narrative review, it does not employ the systematic literature search and quality appraisal protocols of a systematic review or meta-analysis, and may therefore be subject to selection bias. The empirical evidence base specifically on Ghanaian basic school children's screen addiction is limited, necessitating reliance on secondary evidence from other African and global contexts, the transferability of which must be assessed cautiously. The policy analysis is based on publicly available documents and may not fully capture informal policies or grassroots school management practices. Future primary research including epidemiological surveys, qualitative studies with children and teachers, and policy implementation studies, is urgently needed to strengthen the evidence base.

CONCLUSION

Screen addiction among Ghanaian basic school children is an emergent, multidimensional public health and educational challenge that demands immediate and sustained attention from researchers, practitioners, educators, and policymakers. The weight of global evidence leaves little doubt that excessive and unregulated screen engagement during childhood, particularly during the critical neurological and psychosocial developmental windows of the basic school years, carries serious risks for mental health, cognitive development, social competence, sleep, and academic achievement.

Ghana stands at a digital crossroads. The nation's ambitious digital development agenda, if not accompanied by a robust child digital wellness governance framework, risks inadvertently amplifying a public health crisis that could undermine the very educational and developmental outcomes it seeks to promote. The COVID-19 pandemic has accelerated this reckoning; the post-pandemic period must be seized as a window for transformative policy action.

The six-pillar Integrated Digital Wellness and Child Mental Health Policy Framework proposed in this review offers a coherent, evidence-based, and contextually grounded roadmap. Its realization will require political will, inter-ministerial coordination, investment in school mental health infrastructure, and meaningful engagement of communities, parents, and children themselves. The stakes, the psychological wellbeing, educational futures, and social development of Ghana's basic school population, are too high for inaction.

Actionable Recommendations:

- For Policymakers: Establish a national digital wellness and child mental health policy, embed screen addiction screening in school health programmes, and coordinate across ministries to ensure unified governance.
- For Educators: Integrate digital wellness into curricula, train teachers and counsellors to identify screen-related issues, and implement school-level device governance policies.
- For Parents and Communities: Provide parental digital literacy programmes, enforce structured screen-time limits at home, encourage non-digital family activities, and leverage religious/community institutions for awareness campaigns.

Future research must prioritize validated epidemiological studies of screen addiction prevalence among Ghanaian children, longitudinal studies tracking developmental outcomes, and implementation research evaluating the impact of school-based digital wellness interventions. The evidence base must grow commensurately with the scale of the challenge, ensuring that policy and practice are continually informed by robust local data.

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