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Article

Child Centred Digital Governance: Policy Implications of a 16 Year Social Media Age Threshold in Malaysia

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Abstract: This study evaluates the rationale, governance implications, and implementation challenges of Malaysia's proposed minimum age of 16 years for independent social media access. Malaysia presents a compound digital risk environment characterised by high internet penetration, elevated rates of youth mental health distress, and widespread cyberbullying victimisation. The study employs a conceptual policy analysis methodology, synthesising interdisciplinary evidence through three analytical stages: a developmental neuroscience review establishing cognitive thresholds relevant to age-based regulation; a psychosocial risk assessment drawing on Malaysian national data; and a comparative policy analysis of regulatory frameworks in the European Union, United Kingdom, United States, and Australia. Findings confirm that the proposed 16 year threshold constitutes an evidence-informed precautionary measure aligned with international regulatory precedent. Platform vulnerabilities which include algorithmic amplification, persuasive engagement mechanics, weak age-assurance systems, and compulsive design features exploit the underdeveloped executive functions of younger adolescents. Implementation risks are identified, including weak age-verification infrastructure, socio-economic disparities in digital literacy, and potential circumvention behaviours. The study proposes the Child-Centred Digital Governance (CCDG) framework, a three-tiered model integrating structural platform accountability through the Online Safety Act and 2026 Regulatory Sandboxes, behavioural resilience through digital citizenship education, and adaptive policy monitoring. Within this framework, the age threshold functions as a policy anchor within a broader socio-technical governance ecosystem designed to balance child protection with participatory rights.

Keywords: child well-being; social media governance; age threshold; digital safety; Malaysia; platform accountability.

INTRODUCTION

Social media platforms have become a pervasive feature of contemporary childhood and adolescence. Platforms such as TikTok, Instagram, and YouTube function not only as channels for communication but also as socio-technical environments in which young people construct identity, maintain peer relationships, access information, and participate in digital culture (Lahti et al., 2024; Twenge & Campbell, 2018). Although these platforms offer opportunities for creativity, learning, and social connection, growing interdisciplinary evidence indicates

that early and intensive exposure significantly increases children's vulnerability to psychological, cognitive, and social harms (Soto-Ramírez et al., 2025).

In Malaysia, the ubiquity of social media has increasingly been linked to adverse psychological outcomes, including heightened levels of anxiety and depression (Victor et al., 2024). Current empirical data indicate that Malaysian youth report a median of five hours of daily social network engagement (Suhaimee et al., 2025). The prevalence of platforms such as Instagram and TikTok has institutionalised toxic social comparison mechanisms and a pervasive fear of missing out, contributing to social anxiety within this demographic (Kunhao et al., 2024). Problematic social media use has been identified as a critical correlate of increased suicidal ideation and compromised self-esteem among local adolescents (Halim et al., 2023). Recent national data reveal that one in four Malaysian teenagers shows signs of depression, with social media comparison identified as a major causal factor (Komunikasi, 2025). Approximately 72.0% of adolescents report high levels of social media addiction, further exacerbating the psychological toll of digital interactions (Victor et al., 2024).

In response to these documented harms, Malaysia has explored governance measures regarding social media access for minors. This paper addresses three research questions: (1) What empirical and theoretical evidence supports the 16-year threshold as an evidence-informed governance measure? (2) What governance challenges and unintended consequences may arise from its implementation in the Malaysian context? (3) How can Malaysia develop a child-centred digital governance framework that effectively balances youth protection, platform accountability, and equitable digital participation?

This paper makes four scholarly contributions. First, it grounds the policy case in comprehensive Malaysian empirical data on digital risk, mental health, and cyberbullying. Second, it integrates developmental psychology and platform governance scholarship into the analysis of age-based digital regulation. Third, it conducts a comparative regulatory analysis across four jurisdictions to identify governance-relevant lessons for Malaysia. Fourth, it proposes the CCDG framework, positioning the 16-year threshold as a policy anchor within a broader socio-technical governance ecosystem for child online protection and digital well-being.

LITERATURE REVIEW

Effective age-based digital governance requires an interdisciplinary lens that integrates adolescent neurobiology, mental health science, platform design analysis, and regulatory theory. This section synthesises the foundational scholarly domains that together constitute the theoretical and empirical basis for the proposed 16-year social media age threshold.

2.1 Developmental and Cognitive Vulnerability

Developmental psychology and neuroscience consistently demonstrate that executive functions which include impulse control, emotional regulation, long-term planning, and risk assessment. It continues to mature throughout adolescence (Selemon, 2013). The prefrontal cortex, which governs these higher-order cognitive processes, is not fully mature until late adolescence (Selemon, 2013). Prior to this stage, adolescents exhibit heightened reward-seeking behaviour, greater sensitivity to peer feedback, and reduced capacity for deferring gratification—characteristics that contribute to increased vulnerability during this developmental period (Chein et al., 2010; Weigard et al., 2013). The policy case for the 16-year threshold therefore rests on a developmental logic: restricting independent access during the stage of greatest vulnerability reduces exposure to environments specifically engineered to exploit those vulnerabilities.

2.2 Platform Design as a Structural Risk

Social media platforms are commercially designed ecosystems engineered to maximise user engagement through design features that systematically exploit developmental vulnerabilities (Gilad et al., 2023). Visible social metrics such as likes and follower counts intensify social comparison and peer-validation sensitivity among adolescents engaged in identity formation (Nesi et al., 2022). Algorithmic amplification of emotionally intense content exposes younger users to distressing, sensationalised, or harmful material at scale (Eltaher et al., 2026), while infinite scroll mechanisms and autoplay features exploit underdeveloped impulse control to generate compulsive engagement patterns (Richards, 2024). Repeated exposure to these mechanisms has been associated with anxiety, reduced self-esteem, problematic use, and, in extreme cases, clinical mental health conditions including depression (Woods & Scott, 2016; Shannon et al., 2022). A regulatory age threshold should therefore be understood not merely as a user access restriction but as a governance mechanism for compelling age-appropriate platform design and enforceable accountability obligations from platform operators.

2.3 Child Online Safety, Digital Rights, and Proportionality

A growing body of governance scholarship argues that child online safety cannot be reduced to parental mediation or individual self-regulation (Mascheroni et al., 2013). Digital governance frameworks increasingly adopt a child-rights perspective informed by the United Nations Convention on the Rights of the Child, recognising that children hold both the right to protection from harm and the right to participate meaningfully in digital society (Livingstone & Third, 2017). Digital constitutionalism further emphasises the accountability of both public regulators and private platform operators in upholding these rights (Celeste, 2019). Age-based regulation must therefore be evaluated not only for its

protective efficacy but also for its proportionality. This ensures restrictions are necessary, suitable, and balanced against adolescents' rights to digital expression, information access, and social participation (Celeste, 2018).

2.4 International Regulatory Precedents

Comparative review of international regulatory frameworks provides an important benchmark for Malaysian policy. The European Union's General Data Protection Regulation (GDPR) establishes 16 as the baseline age of digital consent, though it permits Member States to lower this threshold to 13 (Tikkinen-Piri et al., 2017), grounding age-based governance in developmental evidence and rights-based rationale. The United Kingdom's Age-Appropriate Design Code requires platforms to design services in the best interests of child users (Grimes et al., 2023). The United States' Children's Online Privacy Protection Act (COPPA) focuses narrowly on data privacy for users under 13 but has proven susceptible to circumvention through self-declared age (Mazzeo et al., 2024). Australia has adopted a restrictive approach by prohibiting individuals under the age of 16 from accessing social media, although its long-term effectiveness remains under evaluation (Volz, 2026). Collectively, these frameworks evidence a global regulatory transition from passive data-protection models towards active platform accountability and a shift of direct relevance to the Malaysian policy context.

METHODOLOGY

3.1 Research Design

This study employs a conceptual policy analysis and narrative interdisciplinary evidence synthesis approach to evaluate Malaysia's proposed 16-year social media age threshold. This methodology is appropriate for emerging governance domains in which empirical consensus often trails technological development and evidence is distributed across multiple disciplines. Rather than statistically testing causal relationships, the approach synthesises theoretical, empirical, regulatory, and governance-oriented literature to support evidence-informed policy evaluation and framework development. The study is not designed to test causal hypotheses; rather, it seeks to produce a theoretically grounded and empirically informed evaluation of a policy proposal, consistent with established practice in policy-oriented legal and governance research where normative evaluation and framework construction are primary objectives.

3.2 Data Sources

A targeted narrative review was conducted across three scholarly domains: (1) developmental psychology and neuroscience; (2) mental health and digital well-being; and (3) digital governance, child online protection, and age-based platform regulation. Academic publications were retrieved from Scopus, Web of Science, and Google Scholar using search terms including: adolescent cognitive development, social media age restriction, child online safety, digital governance, platform regulation, social media mental health, and age verification. National-level empirical data on the Malaysian youth digital risk profile were drawn from MCMC (2020), UNICEF Malaysia (2021), and Isa et al. (2026). Regulatory documents from the EU, UK, US, and Australia were reviewed for comparative analysis. A corpus of approximately 85 peer-reviewed publications and policy documents published between 2008 and 2026 was synthesised.

3.3 Analytical Procedure

The evidence synthesis followed three analytical stages. In the first stage, developmental psychology and neuroscience literature was reviewed to establish cognitive thresholds relevant to age-based policy justification. In the second stage, mental health and behavioural studies were examined to assess psychosocial risks associated with intensive social media use, with specific attention to Malaysian empirical data on cyberbullying prevalence, mental health indicators, and platform usage patterns. In the third stage, comparative policy analysis was conducted across four international jurisdictions to extract governance-relevant lessons. Sources were grouped into four analytical domains: (1) developmental and cognitive vulnerability; (2) psychosocial and behavioural risks; (3) platform governance and accountability; and (4) comparative regulatory approaches.

RESULTS AND FINDINGS

4.1 Malaysian Youth Digital Risk Profile

The empirical evidence presents a compelling and multi-dimensional case for precautionary governance intervention in the Malaysian context. Table 1 summarizes key digital risk indicators drawn from national data.

TABLE 1 MALAYSIAN YOUTH DIGITAL RISK PROFILE

Indicator	Statistic	Implication
Daily social media engagement	Malaysian youth report a median of five hours of daily social network engagement (Suhaimee et al., 2025).	High baseline exposure; justifies precautionary governance
Child device ownership	A majority of Malaysian children	Early and often unsupervised access to

Indicator	Statistic	Implication
	own or have access to personal digital devices (Nathan et al., 2022).	social media platforms
Daily internet usage (children)	A significant proportion of children browse the internet for 1–4 hours daily (Zulkefly et al., 2022).	Extended screen exposure intensifies psychosocial risk
Platform concentration (youth)	Dominant platforms among youth include TikTok, WhatsApp, and Instagram (Ismail et al., 2025).	Primary commercial platforms constitute the dominant risk environments
Multiple active social media profiles	Many connected youth operate multiple simultaneous social media profiles (Ismail et al., 2025).	Amplified exposure to unmoderated content across platforms
Mental health strain	One in four Malaysian teenagers shows signs of depression, with social media comparison identified as a major causal factor (Komunikasi, 2025).	Psychological harm is widespread and empirically documented
Social media addiction	Approximately 72.0% of adolescents report high levels of social media addiction (Victor et al., 2024).	Compulsive engagement patterns require structural, not merely individual, intervention
Self-regulation deficit	A minority of youth actively self-regulate or practise digital detox (Rosli et al., 2019).	Individual-level regulation is insufficient; structural governance is required
Internet Gaming Disorder (IGD)	3.5% of Malaysian secondary school adolescents are affected by IGD (Mohamed et al., 2023).	Digital addiction has reached clinical significance for a substantial youth cohort
Cyberbullying exposure	79.5% of high-risk high school populations in Klang District were affected (Azman et al., 2025); Malaysia ranks second in Asia for youth cyber-victimisation (Yusuf et al., 2023).	Severe national cyberbullying crisis requiring urgent governance response
Gender disparity in cyber-perpetration	Male adolescents act as perpetrators significantly more frequently than female adolescents (Azman et al., 2025).	Governance design must incorporate gender-differentiated protective measures
Platform concentration of cyberbullying	A significant portion of targeted harassment occurs on Facebook, Instagram, and TikTok (Hazlyna, 2021).	Commercial platforms are primary venues of harm; platform-level accountability is essential

These indicators collectively establish a compound risk environment in which high platform penetration, widespread child device ownership, inadequate self-regulation, and severe cyberbullying exposure combine to justify a precautionary governance intervention. The clinical significance of Internet Gaming Disorder (IGD) which is frequently comorbid with severe mental health conditions. The study shows 3.5% of the Malaysian youth population further necessitates broader structural intervention (Mohamed et al., 2023). The gendered dimension of cyberbullying perpetration and victimisation indicates that governance design must account for differential vulnerability rather than treating the under-16 population as homogeneous (Evangelio et al., 2021).

4.2 Developmental Justification for the 16-Year Threshold

The neuroscientific evidence reviewed confirms that age 16 constitutes an evidence-supported governance threshold. The prefrontal cortex's progressive maturation trajectory, and the finding that cognitive capacity reaches adult levels by approximately age 16 while psychosocial maturity. This includes risk assessment, matures later, provide a developmental rationale for selecting 16 as a threshold (Icenogle et al., 2019). This position is reinforced by the EU's GDPR, which establishes 16 as the default age of digital consent based on comparable developmental reasoning (European Parliament & Council, 2016). From a governance perspective, the threshold does not imply that all individuals below 16 are incapable of digital participation; rather, it reflects a precautionary, risk-based policy decision informed by documented developmental vulnerability at a population level.

4.3 Platform Design Risks

Analysis of platform architecture confirms that commercial social media features systematically exploit adolescent developmental vulnerabilities (Gilad et al., 2023). Table 2 summarises the relationship between platform mechanisms, age-related vulnerabilities, documented impacts, and evidence-based policy suggestions.

TABLE 2 PLATFORM DESIGN RISKS, AGE-RELATED VULNERABILITIES, AND POLICY SUGGESTIONS

Mechanism	Age-Related Vulnerability	Impact	Policy Suggestion	Source
Visible social metrics (likes, followers, shares)	Heightened sensitivity to peer approval and social comparison	Anxiety, social exclusion, self-esteem disruption	Reduce visibility of quantitative feedback for minors	Fidan (2025); Nesi et al. (2022)
Algorithmic amplification of emotionally intense content	Limited capacity to assess psychological impact and information quality	Repeated exposure to distressing, sensational, or harmful content	Age-tiered recommendation systems; stronger content filters for minors	Kawahata (2024); Eltaher et al. (2026)
Infinite scroll, autoplay, and short-video loops	Underdeveloped impulse control and executive function	Compulsive use; extended screen time; difficulty disengaging	Mandatory break prompts; friction-based design; autoplay limits for minors	Sinha et al. (2023); Richards (2024)
Personalised advertising and persuasive prompts	Limited understanding of commercial manipulation and data profiling	Privacy risks; impulsive consumption; behavioural exploitation	Restrict behavioural profiling and targeted advertising for under-16 users	Holvoet et al. (2022); Gamito (2023)
Weak content reporting and moderation tools	Reduced confidence and skill in responding to online abuse	Underreporting of cyberbullying, grooming, and harmful interactions	Child-friendly reporting systems; rapid-response moderation mechanisms	Martzoukou (2020)
Easy account creation via self-declared age	Low compliance incentives; ease of age falsification	Circumvention of age restrictions; inadequate protection for minors	Privacy-preserving age assurance with graduated access controls	Gamito (2023); Mazzeo et al. (2024)

4.4 Comparative International Regulatory Findings

Regulatory frameworks in the EU, UK, US, and Australia are increasingly adopting platform accountability, age-appropriate design obligations, and enforceable compliance mechanisms to enhance child online protection (Flew et al., 2025; Richards, 2024). However, the effectiveness of any age threshold remains contingent on the quality of enforcement infrastructure, age-assurance mechanisms, and institutional support (Stevens et al., 2026). Table 3 provides a comparative summary of international approaches and their relevance to the Malaysian regulatory context.

TABLE 3 COMPARATIVE INTERNATIONAL APPROACHES TO AGE-BASED SOCIAL MEDIA REGULATION

Jurisdiction	Min. Age	Approach	Strengths	Challenges	Relevance to Malaysia	Governance Lesson
European Union (GDPR)	16 (may be lowered to 13)	Data protection and graduated consent with flexible national adaptation	Recognises developmental vulnerability; flexible national adaptation; rights-based legitimacy	Uneven enforcement across Member States; age verification remains technically difficult	Direct benchmark for 16-year threshold and regulatory legitimacy	Flexible thresholds require strong institutional coordination
United Kingdom	13	Privacy and child-centred platform design (Age-Appropriate Design Code; Online Safety Act 2023)	Strong age-appropriate design discourse; platform duty of care obligations	Inconsistent enforcement; variable parental oversight capacity	Integrating thresholds with platform design obligations	Design obligations must accompany age thresholds for effectiveness
United States (COPPA)	13	Child privacy protection through verifiable parental consent for data collection	Established legal framework for children's data; bipartisan political support	Narrow data focus; easy age falsification; does not address psychosocial harms	Illustrates limits of privacy-only regulation	Privacy-only approaches are insufficient for addressing psychosocial harms
Australia	16	Platform accountability and minimum-age enforcement; civil penalties for non-compliance	Shifts compliance burden from parents to platforms; clearer corporate incentives	Long-term effectiveness under evaluation; circumvention risk remains	Highly relevant: shifts accountability from parents to platforms	Platform accountability reduces over-reliance on parental monitoring
Malaysia (proposed)	Not established	Combination of parental oversight, platform compliance, regulatory guidance under an emerging CCDG framework	Aligns with precautionary and developmental rationale; draws on international precedents	Weak age assurance infrastructure; socio-economic disparities; digital literacy gaps	Requires layered governance adapted to local realities	—

4.5 Malaysian Legal Framework

The current Malaysian legal framework provides a limited foundation for implementing a 16-year social media age threshold. The Communications and Multimedia Act 1998 (CMA 1998) grants MCMC broad regulatory authority over digital services, focusing primarily on content regulation rather than specific age-based access restrictions (Wok & Mohamed, 2017). The Personal Data Protection Act 2010 (PDPA 2010) does not systematically distinguish between adult and child users (Ayub & Yusoff, 2020). The broader Malaysian regulatory framework currently lacks comprehensive platform-level obligations regarding youth social media access (Sahak et al., 2025). Malaysia has recently enacted an Online Safety Act, and MCMC has established regulatory measures to enhance protections against harmful content and a

significant institutional development, though further legislative action may be required to establish a complete enforcement architecture for the proposed threshold (Mangsor et al., 2025). Table 4 presents a comparative legal analysis positioning Malaysia against international comparators.

TABLE 4 COMPARATIVE LEGAL ANALYSIS OF AGE-BASED SOCIAL MEDIA REGULATION

Issue	European Union	United Kingdom	Australia	Malaysia (Proposed)
Age Threshold	16 (may be lowered to 13 by Member States)	13	16	Not currently established in law
Legal Basis	GDPR Article 8	UK GDPR; Age-Appropriate Design Code (AADC); Online Safety Act 2023	Online Safety Act and eSafety framework	CMA 1998; PDPA 2010; Child Act 2001 (currently indirect)
Platform Duty	Data protection and parental consent obligations	Age-appropriate design and duty of care	Strong platform accountability and risk management obligations	Still developing; nascent Online Safety Act provisions
Enforcement Authority	National Data Protection Authorities	ICO and Ofcom	eSafety Commissioner	MCMC and relevant government agencies
Penalties	Significant administrative fines (up to 4% of global annual turnover)	Financial penalties and regulatory sanctions	Civil penalties and compliance orders	Currently unclear; legislative clarification required
Regulatory Orientation	Privacy protection	Child-centred design and online safety	Platform accountability	Emerging child-centred digital governance

DISCUSSION

5.1 The CCDG Framework: From Parental Responsibility to Systemic Accountability

The findings collectively support the development of a Child-Centred Digital Governance (CCDG) framework in which the 16-year threshold functions as a structural policy anchor rather than a standalone restriction. The Malaysian risk profile encompasses widespread youth anxiety, cyberbullying risk, and internet addiction comorbidities provides empirical evidence for the necessity of targeted prevention and intervention strategies (Lew et al., 2026). The transition from a parental-responsibility model to a systemic-accountability model of digital governance is consistent with the trajectory of leading international frameworks and is theoretically grounded in platform governance scholarship, digital constitutionalism, and child rights doctrine.

The CCDG framework operates across three mutually reinforcing governance layers. The first structural layer seeks to enhance platform accountability; for the CCDG framework to be effective, the Online Safety Act's implementation should incorporate age-appropriate safety features, transparent content moderation, and enforceable compliance mechanisms (Mangsor et al., 2025). The second behavioural layer focuses on digital literacy and community resilience, encompassing initiatives such as the MCMC's Child Online Protection awareness and educational modules (Mahudin & Janon, 2021). The third adaptive layer involves continuous monitoring by MCMC and research partners to track usage patterns, circumvention behaviour, gendered harm trends, and policy effectiveness. This enable evidence-based regulatory adjustment. Table 5 summarises the three layers, key actors, and governance mechanisms.

TABLE 5 CCDG FRAMEWORK: THREE-TIERED GOVERNANCE LAYERS, ACTORS, AND MECHANISMS

Layer	Governance Focus	Main Actors	Key Mechanisms
Layer 1: Structural (Platform Accountability)	Mandate and enforce platform-level child-safety obligations	Platforms; MCMC; regulators	Online Safety Act 2025 (Mangsor et al., 2025); proposed mechanisms: 2026 Regulatory Sandboxes; AI-

Layer	Governance Focus	Main Actors	Key Mechanisms
			driven age verification; safety-by-design obligations; enforceable penalties
Layer 2: Behavioural (Digital Literacy and Resilience)	Build individual and community digital competency	Schools; parents; community organisations; platforms	Digital citizenship integration in national curriculum; MCMC "Identify, Check and Report" campaign (Mohamad et al., 2024); TikTok Malaysia Family Pairing feature (Pedrouzo & Krynski, 2023); parental monitoring tools; anti-cyberbullying education
Layer 3: Adaptive (Monitoring and Policy Refinement)	Enable evidence-based governance adjustment	MCMC; researchers; policymakers	Longitudinal usage monitoring; cyberbullying trend tracking; circumvention assessment; regulatory pilots; periodic policy review cycles

5.2 Implementation Risks and Governance Challenges

Despite its theoretical soundness, the proposed threshold faces significant implementation challenges that must be explicitly addressed in governance design. Weak age-verification systems remain the most immediate obstacle: self-declaration is easily falsified, and current document-based approaches introduce privacy risks without reliably preventing underage access (Goray, 2025; Jarvie & Renaud, 2024). While the establishment of AI-focused regulatory sandboxes mandated in various jurisdictions by 202, it represents a promising institutional step towards AI-driven age assurance, their operational effectiveness remains subject to ongoing evaluation (Charisi & Dignum, 2024; Lanamäki et al., 2025). Socio-economic disparities in digital literacy and parental oversight capacity create structurally uneven protection outcomes, particularly for youth from lower-income, rural, or digitally underserved households (Katz et al., 2017; Zhao et al., 2023). Platform migration and circumvention behaviours, including age falsification, multiple account creation, and migration to less regulated environments. This represent further risks that enforcement alone cannot address (Stevens et al., 2026; Goray, 2025). Exclusion mitigation strategies are therefore essential to preserve safe, developmentally appropriate digital participation for those who would otherwise be isolated from peer social environments.

5.3 Theoretical Positioning of the CCDG Framework

The CCDG framework makes a distinctive theoretical contribution by reframing child online safety as a governance challenge rather than solely a parental or individual behavioural responsibility. Table 6 positions the CCDG framework against four dominant governance approaches and demonstrates its analytical contributions to each.

TABLE 6 THEORETICAL POSITIONING OF THE CCDG FRAMEWORK IN RELATION TO EXISTING GOVERNANCE APPROACHES

Framework	Primary Focus	Unit of Analysis	Limitation	CCDG Extension
Platform Governance	Platform accountability	Platforms and regulators	Children treated as one user group rather than a developmentally differentiated cohort (Mahmud, 2026)	Places developmental vulnerability at the analytical centre of governance design
Digital Constitutionalism	Rights and freedoms	Citizens and institutions	Limited focus on developmental risk and commercial exploitation of immature executive function (Einstein et al., 2026)	Integrates rights-based reasoning with precautionary developmental protection
Multi-Stakeholder	Institutional collaboration	Governance actors	Often remains surface-level, lacking depth to	Assigns governance obligations

Framework	Primary Focus	Unit of Analysis	Limitation	CCDG Extension
Governance			comprehensively address systemic online safety issues (Jonnalagadda et al., 2023)	differentiated by developmental risk and platform architecture
Child Online Protection	Safety and risk reduction	Child users and families	Often results in isolated interventions that fail to address systemic socio-technical conditions (Krutzinna & Staksrud, 2025)	Integrates protection within a unified, layered governance ecosystem
CCDG Framework (proposed)	Child-centred governance	Child–platform–regulator ecosystem	—	Integrates neurodevelopmental evidence, systemic platform accountability, and adaptive policy monitoring within a contextually grounded model

Platform governance scholarship treats children as one category of vulnerable users rather than centring developmental vulnerability in regulatory design. Digital constitutionalism prioritises rights without fully accounting for developmental asymmetries and the commercial exploitation of immature executive function. Multi-stakeholder models emphasise governance participation over differentiated accountability obligations. Conventional child protection models operate through isolated interventions that fail to address the systemic socio-technical conditions generating harm. The CCDG framework resolves these limitations by integrating neurodevelopmental evidence, platform accountability obligations, and adaptive monitoring within a unified governance model that is contextually grounded in the specific empirical conditions of Malaysia.

5.4 Rights, Proportionality, and Equitable Participation

The proposed 16-year threshold raises fundamental questions about the balance between child protection and participatory rights. To satisfy the principle of proportionality (Jiaqi, 2025), the regulatory intervention must pursue a legitimate objective, be suitable for achieving that objective, be necessary in the absence of less restrictive alternatives, and maintain a reasonable balance between competing rights and interests. The Malaysian empirical evidence presented in this study encompasses widespread mental health harms, a severe cyberbullying crisis, a clinical IGD cohort, inadequate self-regulation, and harm concentrated on specific commercial platforms, this is satisfies the necessity and legitimacy elements of this proportionality test (Isa et al., 2026). The principle of the best interests of the child further requires that implementation preserve adolescents' rights to information, expression, and social participation, balanced against the documented harms of unrestricted early platform access (Livingstone & Third, 2017). The CCDG framework's behavioural and adaptive layers are designed precisely to maintain this balance by building digital resilience and preserving meaningful participation alongside protective governance.

CONCLUSION AND RECOMMENDATIONS

This study has evaluated the evidence and policy implications of introducing a 16-year minimum age threshold for independent social media access in Malaysia. By integrating developmental neuroscience, Malaysian national data, mental health research, platform design analysis, and comparative international regulation, the study concludes that the proposed threshold constitutes an evidence-informed precautionary governance measure grounded in a compelling and well-documented national risk profile. The empirical evidence—encompassing widespread youth mental health impacts, a severe cyberbullying crisis, clinical IGD comorbidities, inadequate self-regulation, and the concentration of harm on major commercial platforms—provides a strong domestic justification for the policy. However, the threshold's effectiveness is directly contingent on implementation within the broader CCDG framework, which addresses the structural, behavioural, and adaptive governance dimensions that the threshold alone cannot resolve.

6.1 Recommendations for Malaysian Policymakers

First, MCMC should lead the mandate for AI-driven age assurance by accelerating the transition beyond self-declaration systems through the 2026 Regulatory Sandboxes. Enforceable penalties for platforms that fail to implement age-appropriate design and content moderation obligations must be established through a strengthened Online Safety Act.

Second, digital citizenship education must become a mandatory component of the national school curriculum, with explicit coverage of algorithmic awareness, cyberbullying prevention, privacy literacy, and mental well-being. Given cyberbullying prevalence rates of up to 79.5% in specific student populations (Azman et al., 2025), anti-cyberbullying education is a governance priority, not merely a curriculum supplement.

Third, digital safety tools and education must be made equitably accessible to rural and underserved communities to prevent a structural safety divide that reproduces and amplifies existing socio-economic inequalities (Nohuddin et al., 2025).

Fourth, governance frameworks must incorporate gender-responsive digital safety strategies. The documented gender disparity in cyber-perpetration—with male adolescents significantly more likely to act as perpetrators (Azman et al., 2025) and female youth disproportionately targeted as victims (Onn & Sern, 2016)—indicates that gender-neutral governance will produce inequitable protection outcomes.

Fifth, governance implementation must incorporate longitudinal monitoring and periodic policy review to ensure adaptive, evidence-based regulation responsive to rapidly evolving platform architectures and youth digital behaviours. Future research should prioritise empirical evaluation of behavioural outcomes following implementation, monitoring for reductions in anxiety, cyberbullying incidence, IGD prevalence, and harmful platform exposure among Malaysian youth.

REFERENCES

1. Akuetteh, T., Brossi, L., Day, E., Farthing, R., Golin, J., & O'Neill, B. (2024). Digital policy trends: Regulations, interventions, and policy solutions. In Global perspectives on digital policy. https://doi.org/10.1007/978-3-031-69362-5_64
2. Alomar, N., & Egelman, S. (2022). Developers say the darnedest things: Privacy compliance processes followed by developers of child-directed apps. Proceedings on Privacy Enhancing Technologies, 2022(4), 250–273. https://doi.org/10.56553/popets-2022-0108
3. An, H., et al. (2025). Toward integrated solutions: A systematic interdisciplinary review of cybergrooming research. arXiv. https://doi.org/10.48550/arXiv.2503.05727
4. Ayub, Z. A., & Yusoff, Z. M. (2020). Right of online informational privacy of children in Malaysia: A statutory perspective. UUM Journal of Legal Studies, 9. https://doi.org/10.32890/uumjls.9.2018.9116
5. Azman, A. Z. F., Saruddin, M. Z., Zulkefli, N. A. M., & Isa, M. A. H. M. (2025). Prevalence of cyberbullying and its associated factors among high school students in Klang District, Malaysia. Malaysian Journal of Medicine and Health Sciences, 21(3), 220–231. https://doi.org/10.47836/mjmhs.21.3.26
6. Azurmendi, A. (2018). Digital rights of minors and big data: The European data protection regulation of 2016 and the U.S. COPPA. El Profesional de la Información, 27(1), 27. https://doi.org/10.3145/epi.2018.ene.03
7. Berber, L. K., & Atabey, A. (2020). Privacy screening of online game platforms. Annales de la Faculté de Droit d'Istanbul. https://doi.org/10.26650/annales.2020.69.0007
8. Casey, B. J., Jones, R. M., & Hare, T. A. (2008). The adolescent brain. Annals of the New York Academy of Sciences, 1124(1), 111–126. https://doi.org/10.1196/annals.1440.010
9. Celeste, E. (2018). Digital constitutionalism: Mapping the constitutional response to digital technology's challenges. HIIG Discussion Paper Series, No. 2018-02. https://ssrn.com/abstract=3219905
10. Celeste, E. (2019). Digital constitutionalism: A new systematic theorisation. International Review of Law Computers & Technology, 33(1), 76–99. https://doi.org/10.1080/13600869.2019.1562604
11. Charisi, V., & Dignum, V. (2024). Operationalizing AI regulatory sandboxes for children's rights and well-being (pp. 231–249). https://doi.org/10.1201/9781003320791-25
12. Chein, J., Albert, D., O'Brien, L., Uckert, K., & Steinberg, L. (2010). Peers increase adolescent risk taking by enhancing activity in the brain's reward circuitry. Developmental Science, 14(2). https://doi.org/10.1111/j.1467-7687.2010.01035.x
13. da S. Pinho, A., Izquierdo, V. C., Lindström, B., & van den Bos, W. (2024). Youths' sensitivity to social media feedback: A computational account. Science Advances, 10(43). https://doi.org/10.1126/sciadv.adp8775
14. eClinicalMedicine. (2026). Legislation on young people's social media use requires evidence-based decisions. EClinicalMedicine, 92, 103816. https://doi.org/10.1016/j.eclinm.2026.103816
15. Einstein, D. A., Marsh, S., Moshel, M. L., Sinani, T., & Burrell, T. (2026). Unfiltered access, unseen harms: A developmental and public health critique of digital rights discourse. International Journal of Environmental

Research and Public Health, 23(3), 364. https://doi.org/10.3390/ijerph23030364
16. Eltaher, F., Gajula, R., Miralles-Pechuán, L., Crotty, P., Martínez-Otero, J., Thorpe, C., & McKeever, S. (2026). Protecting young users on social media: Evaluating the effectiveness of content moderation and legal safeguards on video-sharing platforms. Journal of Online Trust and Safety, 3(2). https://doi.org/10.54501/jots.v3i2.251
17. Evangelio, C., Saiz-González, P., Fernández-Río, J., & González-Víllora, S. (2021). Cyberbullying in elementary and middle school students: A systematic review. Computers & Education, 176, 104356. https://doi.org/10.1016/j.compedu.2021.104356
18. European Parliament and Council. (2016). Regulation (EU) 2016/679 (General Data Protection Regulation). Official Journal of the European Union.
19. Fidan, A. (2025). Social media validation in action: The impact of social media on self-perception. Open Science Framework. https://doi.org/10.17605/osf.io/4hp6x
20. Flew, T., Koskie, T., Stepnik, A., & Tang, W. (2025). Nation-state regulation as social media governance: The Australian Online Safety Amendment (Social Media Minimum Age) Act 2024. The University of Sydney. https://hdl.handle.net/2123/33862
21. Gamito, M. C. (2023). Do too many cooks spoil the broth? How EU law underenforcement allows TikTok's violations of minors' rights. Journal of Consumer Policy, 46(3), 281–305. https://doi.org/10.1007/s10603-023-09545-8
22. Gilad, M., Fishbein, D., Nave, G., & Packin, N. G. (2023). Science for policy to protect children in cyberspace. Science, 379(6639), 1294–1297. https://doi.org/10.1126/science.ade9447
23. Goray, C. (2025). Balancing consumer needs, privacy rights and company practices in online advertising, media sharing, and age assurance. Deep Blue (University of Michigan). https://doi.org/10.7302/25727
24. Grace, T., Abel, C., & Salen, K. (2023). Child-centered design in the digital world: Investigating the implications of the age-appropriate design code for interactive digital media. Proceedings of the ACM Interaction Design and Children. https://doi.org/10.1145/3585088.3589370
25. Halim, M. R. T. A., Ibrahim, M. A., Adib, N., Hashim, H., & Omar, R. (2023). Exploring the hazard of social media use on adolescent mental health. Research Square. https://doi.org/10.21203/rs.3.rs-2961547/v1
26. Hazlyna, H. (2021). Awareness about cyberbullying on social media among female students in a Malaysian public university. Türk Bilgisayar ve Matematik Eğitimi Dergisi, 12(3), 1592–1601. https://doi.org/10.17762/turcomat.v12i3.972
27. Holvoet, S., Jans, S. D., Wolf, R. D., Hudders, L., & Herrewijn, L. (2022). Exploring teenagers' folk theories and coping strategies regarding commercial data collection and personalised advertising. Media and Communication, 10(1), 317–328. https://doi.org/10.17645/mac.v10i1.4704
28. Icenogle, G., Steinberg, L., Duell, N., Chein, J., Chang, L., Chaudhary, N., Giunta, L. D., Dodge, K. A., Fanti, K. A., Lansford, J. E., Oburu, P., Pastorelli, C., Skinner, A. T., Sorbring, E., Tapanya, S., Tirado, L. M. U., Alampay, L. P., Al-Hassan, S. M., Takash, H. M. S., & Bacchini, D. (2019). Adolescents' cognitive capacity reaches adult levels prior to their psychosocial maturity: Evidence for a "maturity gap" in a multinational, cross-sectional sample. Law and Human Behavior, 43(1), 69–85. https://doi.org/10.1037/lhb0000315
29. Isa, R., Noordin, M. F., Kamaruzaman, N. N. B., Rodzoan, M. A. B., & Kamaruzzaman, M. A. A. B. (2026). Safeguarding children's well-being in social media environments: Evidence and policy implications of a 16-year age threshold in Malaysia. Governing Youth Digital Safety.
30. Ismail, H., Mamat, A., Ibrahim, H., Mokhtar, N. A., & Zailan, M. N. A. (2025). Social media use among secondary school students in Malaysia: Age and gender trends and multi-platform engagement. Open Journal of Social Sciences, 13(7), 152–168. https://doi.org/10.4236/jss.2025.137008
31. Jarvie, C., & Renaud, K. (2024). Online age verification: Government legislation, supplier responsibilisation, and public perceptions. Children, 11(9), 1068. https://doi.org/10.3390/children11091068
32. Jiaqi, L. (2025). A study on proportionality. International Journal of Social Science Research and Review, 8(1), 218–232. https://doi.org/10.47814/ijssrr.v8i1.2489
33. Jonnalagadda, R., Singh, P., Seth, G., Khanna, A., Khanna, A., & Gogineni, A. (2023). Analysis of cross-functional stakeholder collaboration in online safety of children. International Journal of Research Publication and Reviews, 4(11), 645–651. https://doi.org/10.55248/gengpi.4.1123.113201
34. Katz, V. S., González, C., & Clark, K. (2017). Digital inequality and developmental trajectories of low-income, immigrant, and minority children. Pediatrics, 140. https://doi.org/10.1542/peds.2016-1758r
35. Kawahata, Y. (2024). Algorithmic pollution and its impact on mental health: Provisional

study evaluating the risks of induced reliance on short-form video content. American Journal of Biomedical Science & Research, 25(2), 202–217. https://doi.org/10.34297/ajbsr.2024.25.003304

36. Komunikasi, U. P. M. (2025). Digital resilience: Learning to endure without self-pressure. Universiti Putra Malaysia Institutional Repository.
37. Krutzinna, J., & Staksrud, E. (2025). Too much of a good thing? Challenges to the effectiveness of digital help resources for children and youths. Children & Society, 40(2), 346–358. https://doi.org/10.1111/chso.12943
38. Kunhao, Z., Ma'rof, A. A., & Azam, M. N. D. (2024). The impact of social comparison, FOMO, cyberbullying, and social media addiction on social anxiety among Malaysian youth. International Journal of Academic Research in Business and Social Sciences, 14(12). https://doi.org/10.6007/ijarbss/v14-i12/24045
39. Lahti, H., Kulmala, M., Lyyra, N., Mietola, V., & Paakkari, L. (2024). Problematic situations related to social media use and competencies to prevent them: Results of a Delphi study. Scientific Reports, 14(1). https://doi.org/10.1038/s41598-024-55578-5
40. Lanamäki, A., Väyrynen, K., Vainionpää, F., Hietala, H., Tervo, E., Moltzau, A., Weerts, S., & Niemeyer, D. (2025). What to expect from the upcoming EU AI Act sandboxes: Panel report. Digital Society, 4(2). https://doi.org/10.1007/s44206-025-00201-x
41. Lew, T. Y., Effendi, A. A., Mathur, G., Suthesh, S. N., Muthupalaniappan, S. G. A., Ali, S. B. A., Shao, X. W., & Kee, D. M. H. (2026). Hooked online: Unmasking the risks of internet addiction among Gen Z youths. Journal of the Community Development in Asia, 9(1), 62–79. https://doi.org/10.32535/jcda.v9i1.4334
42. Livingstone, S., & Helsper, E. (2008). Parental mediation of children's internet use. Journal of Broadcasting & Electronic Media, 52(4), 581–599. https://doi.org/10.1080/08838150802437396
43. Livingstone, S., Nair, A., Stoilova, M., van der Hof, S., & Caglar, C. (2024). Children's rights and online age assurance systems. International Journal of Children's Rights, 32(3), 721–748. https://doi.org/10.1163/15718182-32030001
44. Livingstone, S., & Ólafsson, K. (2018). When do parents think their child is ready to use the internet independently. London School of Economics and Political Science.
45. Livingstone, S., & Third, A. (2017). Children and young people's rights in the digital age: An emerging agenda. New Media & Society, 19(5), 657–670. https://doi.org/10.1177/1461444816686318
46. Mahomed, S., Briggs, M., Wong, J., & Aitken, M. (2023). Navigating children's rights and AI in the UK: A roadmap through uncertain territory. Research Square. https://doi.org/10.21203/rs.3.rs-3377300/v1
47. Mahmud, I. (2026). Algorithmic reconditioning and adolescent formation: A framework for developmentally aligned digital governance. Zenodo. https://doi.org/10.5281/zenodo.18200154
48. Mahudin, N. D. M., & Janon, N. S. (2021). Shaping family digital literacy: Investigating parental mediation practices of young children's internet and digital technologies use. IIUM Repository.
49. Malaysian Communications and Multimedia Commission (MCMC). (2020). Klik dengan bijak (KDB) initiative report: Promoting positive and safe internet usage. MCMC.
50. Mangsor, M. M., Mansoor, M., & Rahman, N. A. (2025). Online child safety: The myth and reality of cybersecurity laws in Malaysia. International Journal of Research and Innovation in Social Science, 9(11), 4479–4486. https://doi.org/10.47772/ijriss.2025.91100351
51. Martzoukou, K. (2020). "Maddie is online": An educational video cartoon series on digital literacy and resilience for children. Journal of Research in Innovative Teaching & Learning, 15(1), 64–82. https://doi.org/10.1108/jrit-06-2020-0031
52. Mascheroni, G., Murru, M. F., Aristodemu, E., & Laouris, Y. (2013). Parents, mediation, self-regulation and co-regulation. University of Bergamo.
53. Mazzeo, S. E., Weinstock, M., Vashro, T., Henning, T., & Derrigo, K. (2024). Mitigating harms of social media for adolescent body image and eating disorders: A review. Psychology Research and Behavior Management, 17, 2587–2605. https://doi.org/10.2147/PRBM.S410600
54. Mohamad, A. R., Yaakop, M. R., & Razif, M. A. B. M. (2024). The efficacy of the Malaysian government's response towards cybercrime. Open Journal of Political Science, 14(1), 166–176. https://doi.org/10.4236/ojps.2024.141010
55. Mohamed, N. F., Manan, N. A., Chan, M. F. M. F., Rahmatullah, B., Wahab, R. A., Baharudin, S. N. A., Govindasamy, P., & Abdulla, K. (2023). The prevalence of internet gaming disorders and the associated psychosocial risk factors among adolescents in Malaysian secondary schools. Clinical Child Psychology and Psychiatry, 28(4), 1420–1434. https://doi.org/10.1177/13591045231164870
56. Nathan, T., Muthupalaniappen, L., & Muhammad, N. A. (2022). Prevalence and description of digital device use among

preschool children: A cross-sectional study in Kota Setar District, Kedah. Malaysian Family Physician, 17(3), 114–120. https://doi.org/10.51866/oa.25

57. Nesi, J., Subrahmanyam, K., Valkenburg, P. M., Morita, H., Ehrenreich, S. E., Chiu, M., Maes, C., Manago, A. M., Charmaraman, L., Moreno, M. A., Roberts, S. R., Jensen, M., Domoff, S. E., Baumgartner, S. E., Kruzan, K. P., & Weinstein, E. (2022). Handbook of adolescent digital media use and mental health. Cambridge University Press. https://doi.org/10.1017/9781108976237
58. Nohuddin, P. N. E., Kadir, Z. A., & Noordin, N. A. (2025). A framework for bridging the digital divide: Improving connectivity and opportunities in rural Malaysia (pp. 215–233). https://doi.org/10.1007/978-981-96-1721-0_14
59. Onn, U. T. H., & Sern, L. C. (2016). Cyberbullying among Malaysian youth. Malaysian Journal of Youth Studies, 15(1), 1–16. https://doi.org/10.56390/apjys2024.15.8
60. Orben, A., Meier, A., Dalgleish, T., & Blakemore, S. (2024). Mechanisms linking social media use to adolescent mental health vulnerability. Nature Reviews Psychology, 3(6), 407–420. https://doi.org/10.1038/s44159-024-00307-y
61. Pedrouzo, S. B., & Krynski, L. (2023). Hyperconnected: Children and adolescents on social media. The TikTok phenomenon. Archivos Argentinos de Pediatría, 121(4). https://doi.org/10.5546/aap.2022-02674.eng
62. Richards, O. K. (2024). Centering children's health in technology design: Understanding online behaviors and perspectives of children and parents in a digital world. Deep Blue (University of Michigan). https://doi.org/10.7302/24006
63. Rosli, N. H., Zubaidi, N. H. A., & Dusuki, F. N. (2019). Regulating the protection and rehabilitation of victims of internet child pornography in Malaysia. International Journal of Academic Research in Business and Social Sciences, 9(5). https://doi.org/10.6007/ijarbss/v9-i5/5887
64. Sahak, S., Rajamanickam, R., Yahya, M. S. H., & Mohamad, M. A. H. (2025). Platform accountability and user protection: A comparative analysis of regulatory approaches in Malaysia, United Kingdom and India. Journal of Posthumanism, 5(6), 1817–1826. https://doi.org/10.63332/joph.v5i6.2284
65. Saldías, B. (2024). Designing child-centered content exposure and moderation. arXiv. https://doi.org/10.48550/arXiv.2406.08420
66. Santer, N. D., Manago, A. M., Starks, A., & Reich, S. M. (2023). Early adolescents' perspectives on digital privacy. In The MIT Press eBooks (pp. 123–160). https://doi.org/10.7551/mitpress/13654.003.0012
67. Selemon, L. D. (2013). A role for synaptic plasticity in the adolescent development of executive function. Translational Psychiatry, 3(3). https://doi.org/10.1038/tp.2013.7
68. Shannon, H., Bush, K., Villeneuve, P. J., Hellemans, K., & Guimond, S. (2022). Problematic social media use in adolescents and young adults: Systematic review and meta-analysis. JMIR Mental Health, 9(4). https://doi.org/10.2196/33450
69. Sinha, S., Sharma, M. K., Tadpatrikar, A., Anand, N., & Kumar, R. (2023). Scrolling mindlessly: Emerging mental health implications of social networking sites. Journal of Public Health and Primary Care, 4(3), 179–181. https://doi.org/10.4103/jphpc.jphpc_41_22
70. Soto-Ramírez, P., Godoy, F., Narea, M., & Ayala, C. (2025). Screen exposure in Chilean children during early childhood and socio-emotional problems: Relationship and directionality. Frontiers in Psychology, 16. https://doi.org/10.3389/fpsyg.2025.1589113
71. Steinberg, L. (2014). Age of opportunity: Lessons from the new science of adolescence. Houghton Mifflin Harcourt.
72. Stevens, M. W. R., Radünz, M., Király, O., Griffiths, M. D., Delfabbro, P., Demetrovics, Z., Czakó, A., & King, D. L. (2026). Beyond the debate: Toward pragmatic evaluation of Australia's social media age restrictions. The Lancet Regional Health–Western Pacific, 68, 101818. https://doi.org/10.1016/j.lanwpc.2026.101818
73. Suhaimee, H. S., Pua, Q. E., Revindran, S., Rashid, W. M. A. A., & Isa, Z. M. (2025). The relationship between social network usage and mental health among youths in Klang Valley, Malaysia. Pertanika Journal of Social Science & Humanities, 33(1). https://doi.org/10.47836/pjssh.33.1.01
74. Suzor, N. P. (2019). Lawless: The secret rules that govern our digital lives. Cambridge University Press.
75. Ta, V.-T. (2024). A safety risk assessment framework for children's online safety based on a novel safety weakness assessment approach. arXiv. https://doi.org/10.48550/arxiv.2401.14713
76. Tikkinen-Piri, C., Rohunen, A., & Markkula, J. (2017). EU General Data Protection Regulation: Changes and implications for personal data collecting companies. Computer Law & Security Review, 34(1), 134–153. https://doi.org/10.1016/j.clsr.2017.05.015
77. Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and

adolescents: Evidence from a population-based study. Preventive Medicine Reports, 12, 271–283. https://doi.org/10.1016/j.pmedr.2018.10.003

78. UNICEF Malaysia. (2021). Our lives online: Use of social media and risks faced by children and adolescents in Malaysia. UNICEF Malaysia.
79. Victor, S. A., Yusuf, S., & Kadir, K. A. (2024). Networking your way into mental illness: SLR of social media usage among Malaysian youth. Jurnal Komunikasi Malaysian Journal of Communication, 40(3), 397–416. https://doi.org/10.17576/jkmjc-2024-4003-23
80. Volz, S. (2026). Age restrictions as a tool for enhancing children's online safety: An analysis with special reference to Australian law. Computer Law & Security Review, 61, 106278. https://doi.org/10.1016/j.clsr.2026.106278
81. Weigard, A., Chein, J., Albert, D., Smith, A. R., & Steinberg, L. (2013). Effects of anonymous peer observation on adolescents' preference for immediate rewards. Developmental Science, 17(1), 71–78. https://doi.org/10.1111/desc.12099
82. Welsh, K. (2024). The Online Safety Act 2023. Routledge. https://doi.org/10.4324/9781032714202-11
83. Wok, S., & Mohamed, S. (2017). Internet and social media in Malaysia: Development, challenges and potentials. InTech. https://doi.org/10.5772/intechopen.68848
84. Woods, H., & Scott, H. (2016). #Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. Journal of Adolescence, 51(1), 41–49. https://doi.org/10.1016/j.adolescence.2016.05.008
85. Woods, L. (2022). The UK Online Safety Bill: Structuring the statutory duty of care. Journal of Media Law, 14(1), 45–72. https://doi.org/10.1080/17577632.2022.2091103
86. Yusuf, S., Teimouri, M., Ibrahim, M. S., Ibrahim, N. Z. M., Nazri, S. M., & Victor, S. A. (2023). Let's think they are safe online!: An Asian perspective on the classification of children's cyber risks. Intellectual Discourse, 31(1). https://doi.org/10.31436/id.v31i1.1864
87. Zhan, Y., Gray, S., Sparkes, M., Hack-Polay, D., & Zhou, B. (2025). Influence of COVID-19 on social media usage: Association with mental well-being in undergraduate students. Frontiers in Education, 10. https://doi.org/10.3389/feduc.2025.1645780
88. Zhao, P., Bazarova, N. N., & Valle, N. (2023). Digital parenting divides: The role of parental capital and digital parenting readiness in parental digital mediation. Journal of Computer-Mediated Communication, 28(5). https://doi.org/10.1093/jcmc/zmad032
89. Zulkefly, N. S., Schaff, A. R. D., Zaini, N. A., Mukhtar, F., Norowi, N. M., Dahlan, R., & Said, S. M. (2022). Protocol for randomised control trial of a digital-assisted parenting intervention for promoting Malaysian children's mental health. Frontiers in Psychology, 13. https://doi.org/10.3389/fpsyg.2022.928895.

