

Digital Technology Experiences of Children and Young People: Project Report

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Prepared for:

The National Mental Health Commission, Australian Government

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Acknowledgement of Country

We acknowledge Aboriginal and Torres Strait Islander peoples as the Traditional Custodians the lands and waters on which we live, work and learn. We pay our respects to their clans, and to the elders past and present, and acknowledge their continuing connection to land, sea and community.

Recognition of Lived Experience

We recognise the individual and collective contributions of those with a lived and living experience of mental health challenges and suicide, and those who love, have loved and care for them. Each person's journey is unique and a valued contribution to Australia's commitment to mental health and suicide prevention systems reform.

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Abbreviations

Abbreviation/Term	Meaning
AI	Artificial Intelligence
CATS	Child to Adolescent Transition Study
EU	European Union
Gaming	Video/electronic gaming
LGBTQA+	Lesbian, Gay, Bisexual, Queer/Questioning, Transgender, and Asexual (+ other identities not explicitly listed)
LSAC	Longitudinal Study of Children
NZ	New Zealand
Ofcom	Office of Communications, UK
RAW	Risk to Adolescent Wellbeing Study
The Commission	The National Mental Health Commission
TV	Television
UK	United Kingdom
USA	United States of America

Definitions

Term	Definition
Affordance	[of digital technologies] the interactions (e.g., social and technical) and experiences that functions and features enable.
Children and young people	collective term used in this report to refer to children, adolescents, and young adults aged 5-25.
Digital experiences	what people do online, including types of content encountered, interactions with others, and engagement with platforms.
Digital technology	encompasses “electronic tools, systems, devices, and resources that generate, store, share or process data... [including] digital environments, services, and platforms that provide online spaces for accessing, uploading, distributing, and sharing content such as social media and gaming platforms (eSafety Commissioner; Johnstone et al., 2022).
Experts	individuals within the Project Team with high levels of specialised knowledge or experience across domain-relevant areas including digital technology, child and adolescent development, mental health, LGBTQA+ health and wellbeing, and autism and related neurodiversity.
Features and functions	[of digital technologies] the design elements, such as algorithms, likes, and sharing, that shape digital experiences.
Gender diverse	[for the purposes of gender comparisons in responses to the DigiT survey] participants who identify their gender identity as non-binary or transgender (-man or -woman) or another (non-male or female) identity not specified by the participant, and not accounting for sexual identity.
Mechanisms	the underlying psychological and social processes through which these digital experiences influence mental health, such as social comparison, self-presentation, feedback seeking, or emotional regulation.
Mediators	the measurable variables that capture mechanisms within empirical research, helping to explain how or why an effect occurs.
Standards	[in relation to legislation and policy] specifications or rules that define how digital platforms must operate to comply with the law.

Project Team

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We also acknowledge the contribution of The Social Research Centre, engaged to support the representative national survey component of this project. The survey utilised Life in Australia™, a probability-based online research panel managed by the Social Research Centre, to provide a representative platform for data collection.

It is acknowledged that there is no single set of terminology that suits all experiences and people, particularly within the diverse communities represented in this research. This report endeavours to use inclusive language throughout. No exclusion or harm of people is intended by the terms used, and we recognise that language preferences may vary across the different groups involved in this work.

Datasets Contributed

1. Child to Adult Transition Study (CATS)
2. Longitudinal Study of Australian Children (LSAC)
3. Risk to Adolescent Wellbeing Project (RAW)

This report draws on these longitudinal data sources which cover digital technology use in longitudinal surveys of children, adolescents and young adults.

Reference to language use in the report

It is important to acknowledge that variations in language usage may occur to accurately represent the datasets and methods employed in data collection.

The acronym LGBTQA+ denotes individuals who identify as Lesbian, Gay, Bisexual, Transgender, Queer, and Asexual, along with other identities that reflect diversity in gender or sexuality not explicitly stated. In the collection of demographic data for the Nationally Representative Survey, The Standard for Sex, Gender, Variations of Sex Characteristics, and Sexual Orientation Variables, 2020 ("2020 Standard") was utilised.

When discussing individuals who identify as neurodivergent or LGBTQA+, we prioritise the use of first-person language to reflect their perspectives and experiences.

Executive Summary

Project Overview and Approach

This research project, led by La Trobe University, Deakin University, and The University of Sydney for the National Mental Health Commission, examined how children and young people engage with digital technologies, how these experiences relate to mental health, and the policy and legislative approaches being used internationally to reduce harms and promote positive outcomes. The project focused on children (5–12 years), adolescents (13–17 years), and young adults (18–25 years), including potentially vulnerable and marginalised groups such as LGBTQA+ and neurodivergent young people. Recognising limitations in the current evidence base, the project integrated findings across longitudinal, cross-sectional, qualitative, and policy analyses and engaged young people in consultation processes to ensure the research reflected their lived experiences, priorities, and contemporary patterns of digital technology use.

Patterns of Digital Technology Use

Use is Widespread and Varies by Age, Platform, and Type of Engagement

The findings from this project demonstrate that digital technology use is widespread across childhood, adolescence, and young adulthood, but that patterns of use differ substantially according to age, platform type, and the nature of engagement. Children were more likely to engage with gaming, YouTube, educational content, and communication with known others, whereas adolescents and young adults increasingly used smartphones, social media, messaging platforms, internet forums, and AI tools, and were exposed to algorithmically recommended content. Across technologies, engagement was largely passive, with viewing, reacting, and messaging substantially more common than active content creation.

KEY FINDINGS: DIGITAL TECHNOLOGY USE

- **Digital technology use is widespread** among children, adolescents, and young adults with daily engagement across multiple platforms.
- **Extensive use is not common:** fewer than a quarter of children, adolescents, and young adults reported spending very long periods of time on digital technologies.
- **Patterns of use vary** according to age, digital platform, and type of engagement.
- **Children use digital technology** for entertainment, gaming, educational content and communicating with known others.
- **Adolescent and young adults** engage with social media, messaging, AI tools, internet forums, and algorithmically recommended content
- **Smartphone use is almost universal** among adolescents and young adults; children more commonly use **tablets**.
- **Gaming is common and peaks in mid-adolescence**, the declines into young adulthood.
- **Social media use increases with age** and is near universal by late adolescence

- Children, adolescent, and young adult's digital technology use is dominated by **consuming and reacting** to content **rather than actively creating** content

Positive Experiences are Common and Strongly Endorsed

Positive experiences were widely endorsed across digital technologies, including social media, and were often strongly endorsed. Young people frequently described digital technologies as entertaining, relaxing, socially connecting, and helpful for learning, identity exploration, and access to information.

Negative Experiences are Less Common but Linked to Poorer Mental Health

Negative experiences were also reported but were generally endorsed less strongly and less consistently. Experiences commonly perceived as key online harms, such as bullying or receiving unwanted sexual content, were reported by a minority of participants and were only rarely described as occurring frequently. However, when these experiences were highly endorsed in our cross-sectional survey, they were consistently linked to poor mental health. Importantly, negative exposures also appeared to have additive effects, with experience of multiple types of negative experiences contributing to future risk for diagnosable levels of mental health symptoms. Thus, young people who are experiencing these online harms are in particular need of support, as they may be at heightened risk for mental health concerns.

The Balance of Risks and Benefits is Context-Dependent

Overall, the findings suggest that digital technologies provide substantial opportunities for connection, support, learning, and entertainment, while also exposing some children and young people to harmful content, problematic use patterns, and negative social experiences. Importantly, the balance of risks and benefits differed according to age, technology type, platform features, and patterns of engagement.

KEY FINDINGS: POSITIVE AND NEGATIVE EXPERIENCES OF DIGITAL TECHNOLOGY

- **Positive experiences with digital technology were commonly endorsed:** digital technologies recognised as entertaining, relaxing, socially connecting, helpful for accessing information, exposure to diverse ideas and for learning, and providing escape.
- **Negative experiences were less common** but reported across technologies and clustered by type of experience 1) displacement (technology experienced as distracting, time consuming, and difficult to stop); and 2) exposure to harmful content (hostile interactions, extreme opinions, violent content, material promoting thin-ideal body image, pornography) particularly among adolescents and young adults, but also children.
- **Negative interpersonal experiences online were relatively common among adolescents and young adults;** these included being excluded or insulted, and being contacted by strangers

- **More severe harms were less common**, and included sexual coercion, non-consensual image sharing, and persistent bullying.
- **The balance of positive and negative experiences differs** by age, technology type, and the way technologies are used.

The Relationship Between Digital Technology Use and Mental Health Is Complex and Appears Bidirectional

Limited Evidence That Screen Time Drives Mental Health Outcomes

Across the longitudinal and cross-sectional analyses, the relationships between digital technology use and mental health were found to be complex, nuanced, and often bidirectional. Evidence for strong and consistent effects of overall time spent on digital technologies on subsequent mental health was limited. Where associations were observed, they were typically small.

Distress-Driven Use

In many cases, there was stronger evidence that poorer mental health predicted increases in digital technology use, particularly social media use, than evidence for the reverse direction of effect. Findings suggested that some young people may engage with digital technologies in response to loneliness, stress, emotional distress, or social disconnection, including using digital technologies for escapism or relaxation.

KEY FINDINGS: DIGITAL TECHNOLOGY USE AND MENTAL HEALTH

- **Digital technology use and mental health are bidirectionally related** over time; however, effects were small.
- **Relationships are inconsistent** across developmental stage, technology type, and mental health outcome.
- **Patterns are variable**: some users experience positive, negative, or no change over time.
- Where effects are present, they typically (but not always) indicate that **higher digital technology use predicts poorer mental health**; and **poorer mental health predicts greater digital technology use**.
- In Australian datasets, there was more evidence that **mental health symptoms predict later technology use** (particularly social media) than the reverse. Similarly, **greater social, behavioural, and emotional difficulties predict increased use of technology** over time although at some ages, lower difficulties predicted later increases in use.
- **Screen time shows limited association with mental health**; specific platforms and activities show stronger links with mental health.
- **Higher social media use and specific platform use most consistently predicts increased depressive or distress symptoms** (and where assessed, body

dissatisfaction/eating disorder symptoms) than other technology types or other mental health outcomes.

- **Cyclical patterns emerged** in some analyses for image-based social media platforms where higher mental health concerns predict increased use of those platforms, which in turn predicted increased mental health concerns.
- **YouTube and video game use demonstrated mixed effects**, with use predicting better and worse mental health at different ages.
- **Negative online experiences cumulatively predict** subsequent risk of mental ill-health.
- **Periods of developmental sensitivity were observed**; in early adolescence, use of image-based social media platforms was associated with later increased poor mental health, in mid-adolescence use of social media, YouTube, and video games predicted poorer mental health. Effects were inconsistent across Australian datasets.
- **The impact of digital technology on mental health varies by subgroup and potential vulnerability factors.** In one of our studies, effects of social media on later mental health were intensified for females, and adolescents with experiences of discrimination and of bullying, and with diverse gender/sexuality identity.

Specific Experiences and Platform Features Matter More Than Screen Time

More consistent cross-sectional relationships with mental health emerged when examining specific experiences, affordances, and platform types and features rather than screen time alone. Experiences such as social comparison, compulsive engagement, distraction, exposure to unwanted sexual content, hostile interactions, and algorithmically recommended content were more consistently associated with poorer mental health, especially when these experiences co-occur. At the same time, identity affirmation, social connection, and supportive online communities were associated with positive mental health outcomes, particularly for some potentially vulnerable groups.

These findings highlight that the relationship between digital technology use and mental health cannot be understood through simplistic or one-dimensional explanations and instead reflects interactions between users, developmental stage, platform design, content, social context, and existing vulnerabilities.

KEY FINDINGS: CROSS-SECTIONAL RELATIONSHIPS BETWEEN DIGITAL TECHNOLOGY USE AND MENTAL HEALTH

- **Associations with mental health varied according to type of engagement with social media along a private to public spectrum.** Few links to mental health were observed for private forms of use, e.g., viewing content. **The most public form of social media use - posting content - was linked to multiple poor mental-health indicators**, consistently so for children, and particularly for depression and eating disorder risk across all age groups. Posting was linked to positive mental health only in subgroups; LGBTQA+ adolescents, neurodivergent adolescents, and female young

adults. Commenting on social media was associated with higher wellbeing among neurodivergent adolescents and lower anxiety among neurodivergent young adults.

- **Use of beauty and special effects filters** was associated with multiple indicators of poor mental health among children and adolescents and to a lesser extent among young adults.
- **Receiving algorithm-recommended social media content** was associated with several negative mental health indicators among children.
- **Messaging/chat via digital technology was associated with positive mental health** indicators for young adults but not adolescents or children. Among LGBTQA+ and neurodivergent young adults, favourable patterns were pronounced.
- **Streaming game playing showed the most consistent evidence of association with poorer mental health**, particularly among children and LGBTQA+ adolescents; associations between other gaming types and mental health were limited or varied meaningfully by gender, LGBTQA+ identity, and neurodivergence.
- **Harmful and disruptive digital technology experiences**, such as feeling left out, compulsive or time-consuming use, being distracted by and using digital technology as an escape or relaxation from stress, and unwanted sexual content were consistently associated with poorer mental health indicators for children, adolescents, and young adults. These may be considered **universal negative mechanisms** that may account for the connection between digital technology use and mental health outcomes.
- **Universal negative mechanisms** were observed across social media, gaming, and AI companion chatbot use and **were particularly prominent for AI companion use**.
- **Feeling accepted while using digital technology** was the positive experience most consistently linked to better mental health across technology types and age groups.
- **Positive and negative mechanisms were not related to mental health in the same way across subgroups** with some associations not present, or weaker among LGBTQA+ and neurodivergent children and young people.
- **Feeling accepted, freedom of expressing oneself, and identity-affirming connection** while using digital technology were consistently **associated with better mental health** for LGBTQA+, neurodivergent, and (for some outcomes) gender diverse users.
- For gender-diverse young adults, **stronger associations between mechanisms and both poorer and better mental health were observed** than among male and female young adults.
- For **LGBTQA+ adolescents, mechanisms related to AI companion use** including exposure to dangerous ideas or receiving unwanted sexual content **showed stronger associations with mental health outcomes** when contrasted with non-LGBTQA+ peers. For neurodivergent adolescents, the AI mechanisms exposure to diverse content, escapism, use for relaxation when stressed, forming a strong bond with an AI companion and exposure to extreme or dangerous ideas were associated with lower depression.
- For **neurodivergent children, a pattern of consistent associations between gaming mechanisms and poorer mental health** was observed.

- **The combination of positive and negative mechanisms may cancel out or amplify** associations between digital technology use and mental health.
- **Adolescent and young adult social media users with poorer mental health (relative to those with better mental health) experienced** 1) worrying about being judged for social media posts, 2) comparing themselves to others on social media, 3) social media interfering with sleep, and 4) receiving unwanted sexual content or contact when mechanisms were analysed in combination.
- **Child, adolescent, and young adult gamers with poorer mental health (relative to those with better mental health) experienced** 1) feeling left out, 2) using gaming as an escape, 3) difficulty taking breaks, 4) distraction from other tasks, and 5) sleep disruption when gaming when mechanisms were analysed in combination.

Legislative and Policy Approaches

Current Responses Focus on Content Moderation and Access Restriction

The review of Australian and international legislative and policy approaches found that current responses have focused primarily on content moderation and restricting access to online environments. While these approaches may be appropriate in relation to clearly harmful experiences, such as online bullying or exposure to unwanted sexual content, the findings suggest that they are unlikely to be sufficient on their own.

The Case for Safety-by-Design

Many harms identified in this project were linked not only to content itself, but also to platform design features and affordances that encourage compulsive engagement, repeated exposure to emotionally provocative material, distraction, and prolonged use. These findings highlight the importance of moving toward safety-by-design approaches that place greater responsibility on technology providers to create safer digital environments, rather than relying primarily on children, young people, and families to manage harms independently.

Strengthening Regulatory Powers and Capacity

The findings also underscore the importance of ensuring that regulatory systems have sufficient powers and capacity to set standards, monitor compliance, and respond to rapidly evolving technologies, including artificial intelligence.

KEY FINDINGS: LEGISLATIVE AND POLICY REVIEW

- Government regulatory action focuses on 1) **platform regulation/content moderation** (what is posted; dominant approach), 2) **age-based verification and restriction** (who can access; current and building), and 3) **design or systems regulation** (how platforms are built and operate; emerging).
- **Mental health has historically been an indirect target** of regulatory approaches.

- Australia's approach is **active and evolving** towards stronger, more integrated platform governance; in line with but behind United Kingdom and European Union approaches.
- Convergence on the views that **responsibility for safety should sit with platforms**, rather than with users/parents, that **design-level regulation is necessary** to improve digital technology experiences and reduce risk, and that **well-resourced regulators are required**.
- **Limited evidence for the effectiveness** of current regulatory actions.

Overarching Implications and Recommendations

Moving Beyond Single-Factor Approaches

The overarching implication arising from this project is the need to move beyond simplistic, isolated, or single-factor approaches to understanding and intervening in digital technology and mental health. The findings consistently point to complexity across users, developmental stages, technologies, platforms, affordances, and patterns of engagement. As such, no single intervention, policy response, or platform change is likely to adequately address the diverse ways digital technologies intersect with mental health. Effective responses require coordinated, systems-level approaches that recognise the interconnected roles of technology platforms, policy and regulation, mental health systems, education, families, communities, and broader offline social environments.

Key Recommendation Areas

The recommendations arising from this project therefore emphasise the importance of moving beyond screen time approaches, recognising bidirectional relationships between digital technology use and mental health, strengthening platform accountability and safety-by-design obligations, supporting positive and meaningful digital engagement (e.g., via algorithm promotion of diverse content and minimisation of amplification of divisive opinions and harmful content, and providing greater, more nuanced, and intuitive user control over their digital space), addressing underlying drivers of harmful or distress-driven use, and ensuring that responses are developmentally appropriate and responsive to the differing experiences of diverse groups of children and young people.

Ongoing Consultation, Monitoring, and Evaluation

The findings also highlight the importance of ongoing consultation and co-design with young people, alongside continuous monitoring and evaluation, to ensure that policies and interventions remain responsive to rapidly evolving technologies and digital environments.

REPORT

RECOMMENDATIONS IN BRIEF*Digital technology and mental health among children, adolescents, and young adults*

- 01 Mandate safety-by-design**
 Mandate safety-by-design obligations - within a duty-of-care model that explicitly focuses on reducing any harm to mental health - that require technology providers to build safer environments in ways that shift safety responsibilities onto platforms not individuals.
- 02 Empower digital regulators**
 Ensure regulators (e.g., the eSafety Commissioner) have sufficient powers to set safety-by-design expectations, establish clear mechanisms for accountability and review, and impose enforceable standards.
- 03 Implement evidence-informed content moderation**
 Improve implementation of evidence-informed content moderation (i.e., harmful content identification informed by empirical evidence) approaches, guided by relevant mental health, developmental, and digital technology experts and end users, to better identify and address harmful and “grey area” content across digital platforms, including emerging technologies and AI-enabled systems accessible to children and young people.
- 04 Regulate engagement-driven design, transparency, and user-control**
 Introduce safety-by-design approaches that greatly reduce or even prohibit features encouraging compulsive or excessive engagement, increase transparency regarding algorithms, recommender systems, and platform design, and provide users with greater control over their digital experiences.
- 05 Monitor and research emerging technologies and AI**
 Establish ongoing monitoring and research into emerging technologies accessible to children and young people, including artificial intelligence, to better understand their potential positive and negative effects on mental health, and prioritise longitudinal, experimental, and other robust research designs to strengthen understanding of the causal mechanisms, experiences, and affordances through which these technologies may influence outcomes.
- 06 Proactively apply safety and accountability for emerging technologies**
 Extend child safety, platform accountability, and safety-by-design approaches to emerging technologies from the outset, rather than responding only after harms emerge.

- 07 Explore regulation of AI chatbot companions**
 Consideration should be given to regulating (and/or introducing checks and balances) AI chatbot companions as a service or therapeutic device to ensure safety, in light of potential for distress-driven engagement (i.e., AI companions used as quasi-therapeutic tools).
- 08 Move beyond screen time metrics**
 Move beyond simplistic screen time approaches in policy, education, public messaging, and research, that equate less time using technology to better mental health outcomes. Instead, focus on the nature, context, and mechanisms of digital engagement, including the platforms, features, and experiences that may independently or in combination contribute to positive and negative outcomes for children and young people.
- 09 Promote positive experiences and reduce harms**
 Support the development of safer and more positive digital environments by not only reducing exposure to harms, but also promoting digital experiences that foster meaningful social connection, learning, creativity, identity development, genuine self-expression, and support acceptance of authentic self-identity.
- 10 Apply caution and limit reliance on cross-sectional evidence**
 Interpret associations between digital technology use and mental health cautiously, such that associations from cross-sectional data are not exclusively relied on for decision making (i.e., in policy, education, public messaging, and intervention development).
- 11 Address distress-driven digital engagement in mental health care**
 Integrate digital technology considerations into broader youth mental health strategies and interventions, recognising that harmful (i.e., signalled by distraction from other activities, compulsive engagement, loss of time, sleep disruption) or distress-driven digital engagement may itself be a signal that a young person is struggling with their mental health. Responses should address underlying drivers of harmful engagement, such as loneliness, stress, emotional distress, and social disconnection, rather than focusing solely on reducing technology use.
- 12 Invest in offline opportunities for social connection and coping**
 Invest in offline social connection and recreation opportunities for children and young people to support multiple pathways for development of positive mental health. This should also include ensuring access to a range of viable, non-digital options for managing distress, rather than relying on technology as the primary means of coping.

- 13 Support safe and inclusive online spaces for diverse youth**
 Support access to connected online spaces for LGBTQA+ and neurodivergent children and young people, particularly where offline spaces may not be safe or supportive for these groups, and ensure they are co-designed with these groups to best meet their needs and are well utilised.
- 14 Provide developmentally tailored supports and interventions**
 Develop age-appropriate supports, education, and safeguards that reflect developmental differences in children and young people's digital technology use, including the increasing social, interactive, and independent nature of engagement across adolescence and young adulthood.
- 15 Build digital, social, and emotional skills early**
 Strengthen mental health, coping skills, digital literacy, and resilience before young people enter highly social and less regulated digital environments, while also supporting parents and caregivers to adapt guidance and support as children develop increasing independence online.
- 16 Tailor supports and interventions to diverse needs and identities**
 Ensure supports, interventions (e.g., clinical, psychosocial, and prevention programs), and digital environments are responsive to the differing experiences and vulnerabilities and strengths of diverse groups, including gender diverse, LGBTQA+, and neurodivergent children and young people.
- 17 Adopt coordinated multisystem approaches**
 Adopt coordinated, multisystem approaches spanning mental health, education, families, communities, industry, and regulation that balance harm minimisation with preserving opportunities for social connection, identity exploration, creativity, learning, and support within digital environments.
- 18 Involve children and youth in co-design**
 Involve children and young people and those with diverse identities in ongoing consultation and co-design processes to ensure policies, interventions, and digital environments reflect their lived experiences, priorities, and needs.
- 19 Embed evaluation and review**
 Embed ongoing evaluation and continuous review into policy and intervention responses to ensure they remain effective and responsive to evolving technologies and patterns of use.

1. Background

Digital technology is an integral part of modern life. Including social media and gaming, and avenues to access, upload, distribute and share content, digital technology encompasses a range of tools, systems, devices and resources within digital environments and online platforms used for work, social life, and relaxation. Children and young people aged between 5 and 25 years are immersed in the digital world and have not known life without digital technology. As such, they use and are highly reliant on digital technology—for entertainment, education and work, communication, socialising and relationships, and creative expression. This engagement with digital technology shapes their identity during key periods of growth from early life into young adulthood, a formative period that predicts a myriad of health, economic, and wellbeing outcomes throughout adulthood. Thus, it is critical to ensure that these technologies enrich rather than diminish the mental health of young people in Australia.

Corresponding to the contemporary period of increasingly available digital technology integrated within our daily lives, has been a decline in the reported mental health of children and young people. Recent international reports demonstrate the increasing prevalence of mental health problems since the early 2010s—including rates of depression, anxiety, eating disorders, and psychological distress among children, adolescents, and young adults aged 10-24 (McGorry et al., 2024). Indeed, the National Study of Mental Health and Wellbeing demonstrated a recent 50% rise in the prevalence of mental illness in Australian youth aged 16-24 (Australian Bureau of Statistics, 2023).

Socio-emotional development is lifelong, but with periods of rapid growth across the 5- to 25-year period including around key transition points of entry to formal schooling, transition from primary to secondary education, and graduation away from formal schooling into more independent early adult life. These transitions may be points of sensitivity during which digital technologies may variously offer support and positive benefits or negative impacts on mental health (Orben et al., 2022). Although the causes of poor mental health are multi-faceted, aspects of digital technology engagement are thought to be key contributors, in a range of ways. Adolescents aged 13-17 and young people aged 16-24 have themselves identified that some forms of digital technology—such as social media—contribute both positively and negatively to their wellbeing (Popat & Tarrant, 2022; Royal Society for Public Health, 2017). Increasingly, research evidence supports this perception.

The diverse content digital technology makes available, often tailored to the given engaged individual, provides opportunities for positive experiences that may boost wellbeing. However, research has also shown that digital technology engagement is associated with adverse mental health outcomes (Valkenburg et al., 2022), including links between young children's (aged 1-6 years) screen use and poorer overall developmental outcomes (Mallawaarachchi et al., 2022), and highlighted mechanisms, such as social comparisons arising from engagement with social media, through which digital technology use negatively impacts pre-adolescent (aged 10-12 years) and adolescent (aged 11-16 years) mental health (Fardouly et al., 2020; Jarman et al., 2024).

Common to many digital technologies, especially those designed for social interaction and entertainment/leisure, are persuasive design features that prolong engagement (Chassiakos et al., 2016). Whilst aimed at maximising the engagement of all users, highly curated, visually engaging, and interactive features may particularly entice the attention and extend the engagement of children, adolescents, and young adults aged 7-26 (Papadakis & Kalogiannakis, 2017). Indeed, research has shown that young people are particularly sensitive to online interactions, both positive experiences and negative ones such as in the context of cyberbullying (Vijayakumar et al., 2017). Given that childhood and adolescence are developmental periods during which lifelong habits can be formed (Radesky & Christakis, 2016), early reliance on digital technologies for entertainment, or for comfort, distraction, and reward, has clear potential to impede the otherwise typical development of other effective coping strategies, and skills for attentional and emotional self-regulation, thereby potentially increasing lifespan vulnerability to mental health and wellbeing challenges.

Particularly vulnerable subgroups may include LGBTQA+ identifying youth and those with neurodivergence; groups with known increased prevalence of mental health difficulties and high rates of digital technology engagement. Youth aged 14-21 who are LGBTQA+ identifying have significantly elevated rates of mental ill health, when compared to cis-gender and/or heterosexual peers (Hill et al., 2021). Such mental ill health is associated with experiences of abuse or harassment relating to sexuality or gender diversity, much of which plays out in online environments (Hill et al., 2022). At the same time, social media environments provide a valuable means of connectivity for those LGBTQA+ children, adolescents, and young adults (aged 10-24) who may be geographically dispersed and isolated from peers, and where opportunities for face-to-face interaction in ways that are safe can be challenging (Berger et al., 2022).

Neurodivergent-identifying youth, including Autistic children and young people aged 6 to 17, report increased incidence of depression and anxiety than the general population (Long et al., 2025) and digital technology engagement for a range of purposes among 10-17-year-olds (Hassrick et al., 2021; O'Hagan & Hebron, 2017). Supporting the identified needs of this group, digital technology engagement may offer real benefits, including facilitated social connection, including around potentially niche common interests, and providing environments in which challenging aspects of face-to-face interaction are minimised. However, digital technology engagement may plausibly exacerbate the difficulties Autistic and otherwise neurodivergent youth face with developing adaptive self-regulation and coping skills that translate effectively to 'offline' interactions. Hence, understanding the range and motivations for the use of digital technologies, and the particular positive and negative impacts of such use for mental health and wellbeing outcomes of minority subgroups with diverse identities, whether in terms of gender and sexual identity and/or neurodivergence, are key priority areas.

Though great progress has been made in the past decade in understanding motivations for digital technology use, as well as its positive and negative effects, considerable knowledge gaps remain, and these threaten capacity to drive effective, evidence-informed policy to ensure healthy use of digital technology. Research has often focused on overall screen time or general engagement (e.g., time spent on technologies), which while broadly useful, provides limited insight into how digital technologies influence mental health. Understanding the pathway from

engagement with digital technology to mental health and wellbeing impacts requires consideration of: a) factors that link these experiences (i.e., at an individual level [e.g., personal interest, entertainment-value, educative value], and at microsystem [e.g., peer norms, work/educational expectations], macrosystem [e.g., legislature that seeks to protect users and ensure healthy engagement with technology], and exosystem levels [e.g., digital technology affordances]); b) the drivers of engagement with digital technology; c) the need to move beyond simple measures of time engaged with digital technology, toward understanding the types and patterns of use that impact mental health and wellbeing; and d) for whom this is so, including groups potentially at-risk as mentioned above.

To advance understanding, it is important to distinguish between different levels of analysis within digital technology use. In addition to understanding use of specific digital devices and online platforms, we also consider digital experiences of children and young people, features and functions of digital technologies, affordances of those features and functions, and the mechanisms through which engagement with digital technology shapes outcomes.

Digital experiences refer to what young people are exposed to and do online, including the types of content they encounter, the interactions they have, and the ways they engage with platforms. Features and functions refer to the design elements of technologies, such as algorithms, likes, and sharing, that shape these experiences. Affordances are the social interactions and experiences that functions and features enable; for example, the “like” feature which enables users to validate others. Mechanisms are the underlying psychological and social processes through which these experiences influence mental health, such as social comparison, self-presentation, feedback seeking, or emotional regulation. Mediators are the measurable variables that capture these mechanisms within empirical research, helping to explain how or why an effect occurs.

These elements are closely interrelated. Platform affordances shape the types of digital experiences young people have; these experiences activate psychological and social mechanisms; and these mechanisms, in turn, influence mental health outcomes. For example, algorithmic curation (a feature) may increase exposure to appearance-focused content (an affordance), which may heighten social comparison (a mechanism), leading to changes in body image or mental health (an outcome). Conceptual clarity in these domains is essential for identifying precise points of intervention at the individual, social, and platform levels.

Much of the existing evidence base is limited by a reliance on cross-sectional, correlational research designs. These approaches constrain our ability to determine the directionality and causality of associations between digital technology use and mental health outcomes. Longitudinal and experimental studies provide stronger evidence regarding temporal ordering of factors of interest, and causal mechanisms. In the Australian context, existing longitudinal datasets offer a valuable opportunity to examine how digital technology use and mental health may influence one another over time, and to identify critical periods of risk and resilience. Furthermore, a synthesis of longitudinal and experimental research on digital technology use and youth mental health would help identify key gaps in the evidence base and strengthen confidence in causal relationships. However, no single dataset or method can fully capture the complexity of young people’s digital experiences. Further, the types of digital technologies young

people engage with, and the ways in which they do so, evolve over time and vary across age groups, underscoring the need to understand contemporary patterns of use among young people in Australia. Triangulating evidence across multiple datasets and methodological approaches is therefore critical for building a robust and reliable evidence base. Combining insights from longitudinal studies, experimental designs, qualitative research, and the latest survey data can strengthen confidence in findings, clarify inconsistencies, and provide a more comprehensive understanding of how digital technology use relates to mental health.

Children and young people's perspectives have often been underrepresented in research on digital technology and mental health, despite their being primary users of these platforms. Rather, much of the existing evidence base reflects adult assumptions, which may not fully capture the complexity of young people's online experiences. Early consultation with young people with lived experience is therefore essential to ensure that research is relevant, acceptable, and responsive to their priorities. Young people offer unique insights into the content they encounter, how they interpret and engage with it, and the broader social contexts shaping their experiences. These perspectives can challenge assumptions, highlight overlooked risks and benefits, and identify opportunities for more effective interventions. In the context of rapidly evolving digital environments, involving young people in the design phase is particularly important. Consultation and co-design approaches help ensure that research and interventions are grounded in young people's lived realities, are developmentally appropriate, and are more likely to be effective in practice. This approach also reflects ethical commitments to inclusion and respect, recognising young people as key stakeholders in shaping solutions that affect their wellbeing.

This project aims to generate a comprehensive, youth-informed evidence base on how digital technologies shape the mental health of children and young people in Australia and to inform effective policy and intervention responses. Specifically, the research objectives of this project are to:

1. Identify the technologies, platforms, and features that young people in Australia engage with, including emerging technologies, and examine how use varies by age and across demographic groups.
2. Examine how digital technology use relates to mental health, including both harms and benefits, and identify the key experiences, mechanisms, and affordances that drive these outcomes.
3. Integrate findings across longitudinal, experimental, qualitative, and consultation data to strengthen evidence on directionality, mechanisms, and population differences.
4. Engage children and young people as active contributors to ensure the research reflects their lived experiences, priorities, and perspectives.
5. Assess current legal and regulatory approaches in Australia and internationally and identify evidence-based opportunities to strengthen protections and promote positive digital environments.

1.1 Project Framework and Aims

This research project, conducted in 2025-2026 and led by La Trobe University, Deakin University, and the University of Sydney, is framed by the following research questions, set by the National Mental Health Commission (hereafter referred to as the Commission).

1. How are children and young people engaging with digital technology?
2. What are the positive and negative experiences of digital technology use in relation to children and young people's mental health?
3. What policy or legislative responses are being used around the world to accentuate the positive effects and/or mitigate the negative effects of digital technology use?

The project will address these research questions among children and young people within three defined age groups:

- Children aged 5-12-years
- Adolescents aged 13-17-years
- Young adults aged 18-25-years.

In addition, digital technology use and its relationships with mental health will be examined among groups potentially vulnerable or sensitive to the positive and negative effects of digital technology use. This includes those who may be marginalised and with diverse identities, namely:

- LGBTQA+ identifying children, adolescents, and young adults
- Neurodivergent children, adolescents, and young adults.

Responding to these questions will provide a comprehensive understanding of the digital technology experiences in these groups and address current knowledge gaps in order to improve capacity to drive effective, evidence-informed policy to ensure healthy use of digital technology.

1.2 Structure of this Report

This report presents separate chapters that illustrate the planning and consultation work that established the scope for the project, the methodological approaches for the empirical studies, and relevant evidence required to be synthesised for each of the three key research questions.

Chapter 2 details the consultation process undertaken to refine the project scope and inclusions. This process established the digital technologies and mental health outcomes to be evaluated in the project. An overview of the methodologies for each separate study used in the project is provided in Chapter 3.

Evidence pertaining to the use of digital technologies, namely the types of platforms, devices and features used, frequency of use, and patterns of engagement across age cohorts and diverse groups is presented in Chapter 4.

Chapter 5 provides evidence for the relationship between digital technology use and mental health. Evidence here is drawn from methodologies that can inform causality and explores both the effects of digital technology use on mental health and the reverse relationship, that is the effects of mental health on engagement with digital technology. Evidence presented in this chapter also explores the timing of emergence of these relationships across developmental periods. Review of international legislative and policy responses to potential harm of digital technology use to children and young people and comparison with Australian legislation and policy is presented in Chapter 6. The final chapter (7) provides a summary of findings and their implications.

Each of the three chapters that presents empirical findings (chapters 4, 5, and 6) begins with a *Key Points* section. These key points highlight the main findings of the chapter and are intended to provide an orientation to the data and findings that are presented in detail within the chapter. Evidence supporting the key points is presented in full within the relevant chapter.

Alongside this report, a separate Technical Report provides detailed methods and full findings from narrative synthesis and statistical analyses of the empirical studies comprising this report. The reader is referred to the Technical Report at several instances in the current document where more in-depth information is provided beyond the summary outcomes presented here.

2. Project Scope and Inclusions

La Trobe University were commissioned by the National Mental Health Commission (hereafter, the Commission) to identify the digital technologies used by children and young people and to explore the relationships between use and positive and negative mental health outcomes. We recognise that the digital technologies used by children and young people and potentially related to positive and negative mental health outcomes are extensive. Consequently, it is beyond the scope of this project to report on all technologies and all mental health experiences.

To inform the scope of the project and narrow the inclusion of constructs to those most relevant to key stakeholders, we considered 1) the intention and preferences of the Commission in contracting this project, 2) appropriate and feasible methodological design to answer the research questions within the project timeframe, and 3) expert and lived experience preferences identified through a consultation process.

The inclusion of specific digital technologies was intended to align with the preferred definition stipulated by the Commission that digital technology encompasses “electronic tools, systems, devices, and resources that generate, store, share or process data... [including] digital environments, services, and platforms that provide online spaces for accessing, uploading, distributing, and sharing content such as social media and gaming platforms”.

The project focused on common positive and negative mental health experiences of digital technology use, rather than uncommon, distal, and extreme experiences of harm. Thus, while recognised as harmful, outcomes such as radicalisation, criminal activity, and sexual abuse, were considered as out of scope due to their infrequent occurrence (relative to common mental health outcomes) and indirect relationships between these factors and the key outcomes of interest, namely positive and negative mental health.

Our intent for this project was to analyse data and coordinate insights through multiple, strategically related studies using diverse methods to provide a more complete and comprehensive response to the research questions. Given the limited timeframe for the project and that the population of interest included children and young people, it was necessary that these methods were feasible to complete within the allocated time and involved data collected in ways that were developmentally appropriate for the population.

As elaborated in the methods section (Chapter 3, Project Methodology), we purposefully chose a number of complementary study types to gain a comprehensive picture of the types and ways children and young people use digital technology and how this use is related to mental health. We adopted a triangulation approach, which recognises that any single study type can provide only incomplete (yet useful) insights into a topic of interest, and that combining findings across different study types powerfully enhances confidence in findings and their interpretation.

2.1 Consultation

Prior to finalising the research methods for the separate studies for the project, we conducted a series of consultations with stakeholders to inform the project scope and inclusions. This exercise aimed to better understand which constructs relating to digital technology and mental

health were considered priorities for future research across relevant stakeholder groups, including children, adolescents, young adults, parents of young children, and digital technology, mental health, and child/adolescent development experts. The consultation process and outcomes are summarised here and reported in detail in Chapter 1 of the Technical Report.

The specific aims of the consultation were to clarify:

- The digital technologies and their features used by children and young people and to prioritise those that should be examined in future research.
- The most relevant positive and negative mental health correlates and outcomes of digital technology use and to prioritise those that should be examined in future research.
- Potential mechanisms of the relationship between digital technology and mental health to be examined in future research.

2.1.1 Consultation Procedure

Using the nominal group technique (Manera et al., 2019) to generate ideas and reach consensus on priority research inclusions, group consultation sessions were conducted with key stakeholders. The nominal group technique engages participants in a structured, facilitated discussion to 1) individually generate, share, and record ideas, 2) clarify suggestions via discussion of the rationale underlying suggestions, 3) consider whether any suggestions were not relevant for the target populations to be included in the research for the project, and 4) score proposed ideas via a survey to generate a priority ordered list of research inclusions.

Groups were asked to identify and prioritise digital technologies, features of technologies, and positive and negative mental health experiences of digital technology use. The exception to this was the group with children (limited to ages 10-12), for whom discussion of features was omitted to reduce burden. The expert group were also directly asked to generate, discuss, and prioritise via survey, both affordances of technology use and mechanisms underlying the relationship between technology use and mental health. Affordances were not addressed as a separate category in group sessions with children, parents, adolescents, and adults due to time limits in the sessions and we expected some overlap with ideas generated in discussion on digital technology features. Mechanisms were not discussed directly with the children, parent, adolescent, or adult groups as the concept was considered overly technical. To gather information on this construct, these groups were instead asked to discuss the reasons that the mental health experiences they had suggested were related to digital technology use and relevant to their cohort for future research for the project. The content of these discussions was then subject to qualitative analyses to reveal potential mechanisms of the relationship between digital technology use and mental health.

Ten separate group sessions were conducted with a total of 62 participants. Ethics approval for the consultation sessions with non-expert stakeholders was received from the La Trobe University Human Research Ethics Committee. Approval was not required for the expert consultation as this group comprised participants contributing their professional expertise for the purpose of guiding the study design and inclusions. One group session was held with each of our stakeholders: expert ($N = 10$), parents of children aged 5-12 years ($N = 8$), children aged 10-12 years ($N = 6$), adolescents aged 13-17 years ($N = 7$), neurodivergent adolescents aged 13-17

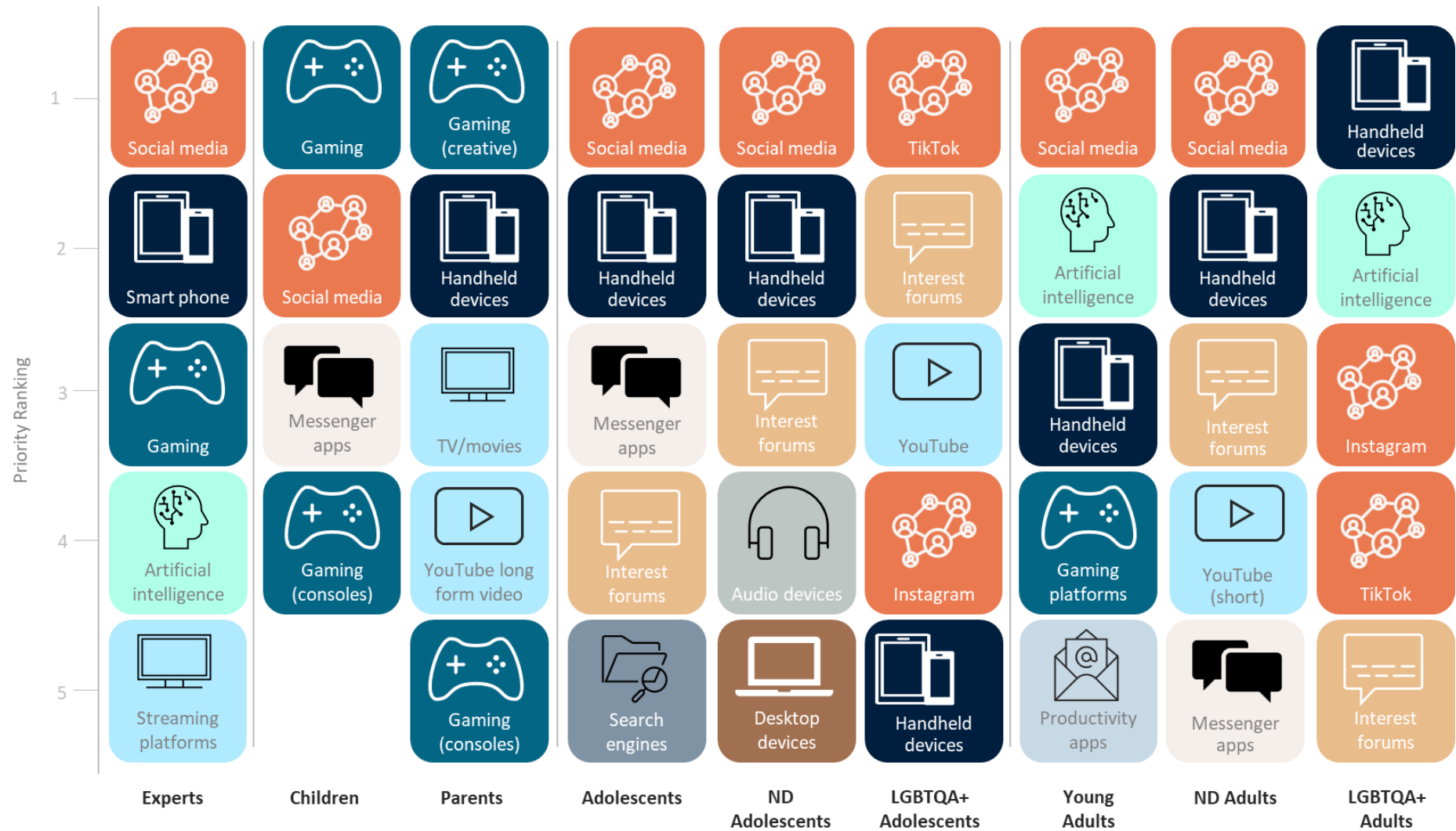
years ($N = 5$), LGBTQA+ adolescents aged 13-17 years ($N = 2$), neurodivergent young adults aged 18-25 years ($N = 6$), and LGBTQA+ young adults aged 18-25 years ($N = 7$). Two group sessions were held with young adults aged 18-25 years ($N = 11$). A higher proportion of females than males took part in the consultation sessions, particularly for the parent and young adult groups. There was representation of stakeholders across almost all Australian states and territories except for Western Australia and the Northern Territory. More detail on the demographic characteristics of participants is shown in the Technical Report (Chapter 3). For simplicity, hereafter, the consultation groups will be referred to as the expert, parent, child, adolescent, neurodivergent adolescent, LGBTQA+ adolescent, young adult, neurodivergent young adult, and LGBTQA+ young adult groups.

2.1.2 Digital Technologies

Groups initially identified between 6-23 digital technologies relevant to use within their cohort, noting that the expert group considered relevance for all groups. Figure 2.1 shows the top 5 priorities for research identified by each group via voting that took place following discussion and clarification of suggestions (see Appendix 1B to 1I of the Technical Report for the 10 highest ranked ideas for each construct).

To a large extent, digital technologies identified as the top priorities for research were common across groups, with social media and handheld devices (smart phones and tablets) identified as priorities for all groups. Gaming was particularly relevant for children, and interest forums (e.g., Reddit, Discord) were identified as important by adolescents and young adults. Artificial intelligence was prioritised within the top 5 technologies by the expert- and two of the adult groups only.

Figure 2.1. Key stakeholder group top 5 priorities for digital technology research inclusions



Note. ND = neurodivergent; desktop devices refers to laptops, computers. Only four priorities were identified by children. "Gaming consoles" refers to hardware; "gaming" refers to the activity.

2.1.3 Features and Affordances of Digital Technologies

From the 8 to 24 initially identified features of digital technologies, a range of top 5 priorities was revealed. Although consistency in priority features was observed between expert (see Table 2.1), adolescent, and young adult groups with chat, scrolling (endless/doom), and recommender systems/algorithms featuring regularly in the priority features, differing priorities resulted from the consultation discussions among parents of young children (see Figure 2.2). Here, the features identified as priorities for inclusion in the project research tended to reflect the more concrete or mechanical functions of digital technologies, e.g., scrolling/swiping and skip ads function on YouTube.

Table 2.1 Top 5 features of digital technologies and mean importance ranked by the expert group

Features (of Digital Technologies)	Importance Mean (SD)	Priority Ranking
Addictive /persuasive design	4.5 (1.27)	1
Recommendation systems/Algorithms	4.4 (1.01)	2
Advertising	4.2 (1.23)	3
Infinite scroll	4.3 (0.67)	4
Likes	4.0 (1.05)	5

Note. Importance ratings from 1 = not at all important for inclusion in future research to 5 = very important for inclusion in future research.

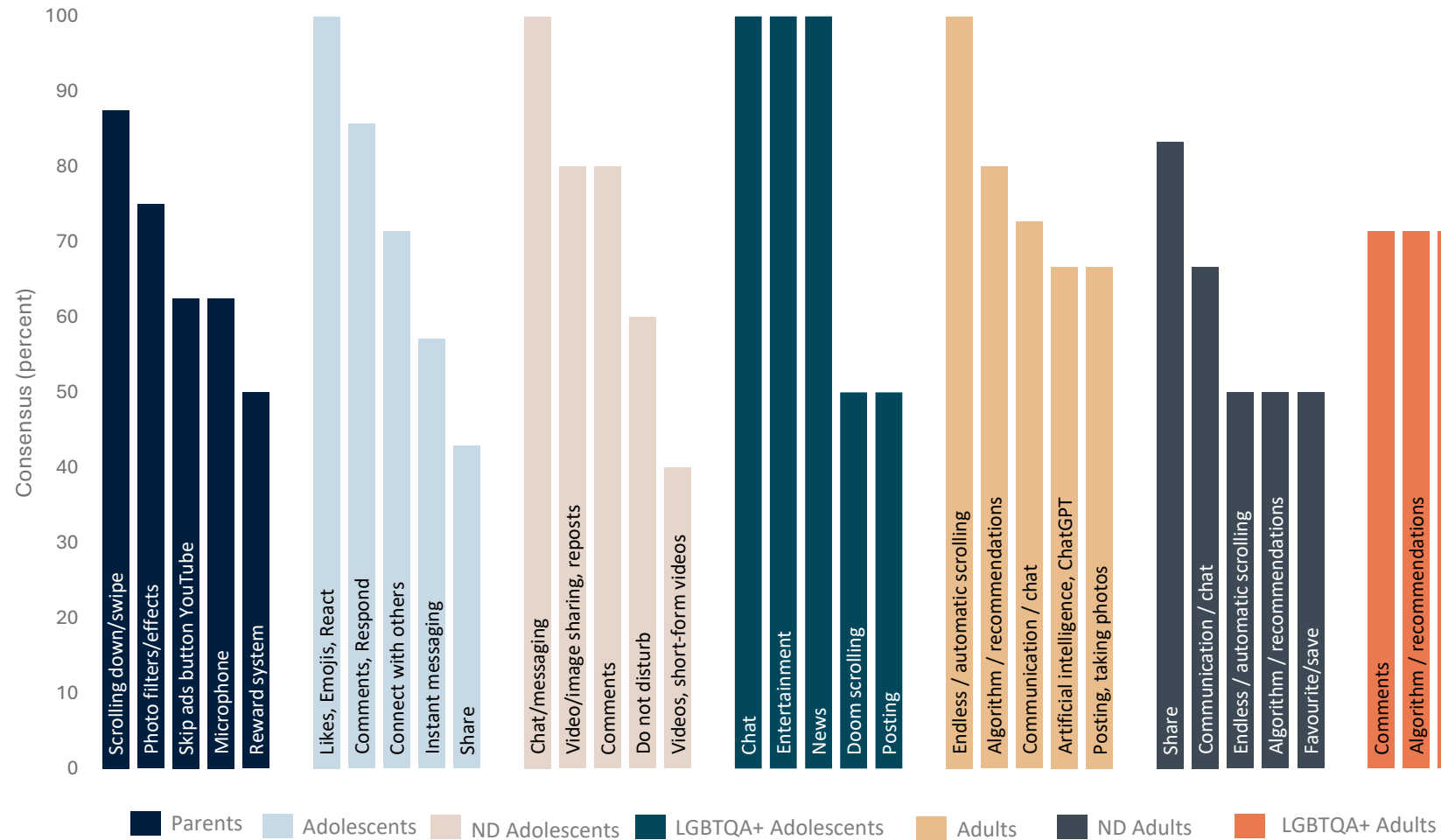
The top 5 priority features also revealed some overlap with the digital technology platforms previously identified (see Figure 2.1), reflecting that features of some digital technologies are to a certain extent their defining attribute; for example, chat as the key feature of messaging apps. Interestingly, the key features that emerged from the priority ranking were mostly related to social media technologies rather than to other technologies such as gaming or video watching.

As noted above, due to overlap in constructs and potential for confusion for participants, only the expert group were directly asked about affordances, who initially identified 26 potential affordances of digital technology use relevant for children and young people. The top ranked affordances that emerged from scoring and voting are shown in Table 2.2. While these are all positive at face value, we note that affordances that may be considered negative were also identified, such as constant checking and pickups, but these were rated at lower levels of priority for inclusion in the research.

Table 2.2. Top 5 affordances of digital technologies and mean importance ranked by the expert group

Affordances (of Digital Technology Use)	Mean (SD)	Priority Ranking
Social connection and community	4.8 (0.63)	1
Exploration (sexuality/identity)	4.3 (0.48)	2
Social norms	4.7 (0.67)	3
Exposure to diversity	4.5 (0.71)	4
Self-presentation (e.g., best/idealised self)	4.1 (0.99)	5
Entertainment / play	3.9 (0.88)	5

Note. Self-presentation and entertainment/play were ranked as equal priorities.

Figure 2.2. Level of consensus (percent) among group participants for inclusion of features for research

Note. ND = neurodivergent

2.1.4 Positive and Negative Mental Health Experiences

Suggestions for positive and negative mental health experiences were numerous, with 6 to 19 positive- and 5 to 28 negative-experience suggestions made per group. The array of suggestions was broad and reflected specific mental health outcomes, such as body image concerns and wellbeing, as well as general positive and negative experiences connected with digital technology use. The latter type of suggestions included experiences such as relaxation, entertainment, and misinformation.

The range of suggested positive and negative mental health experiences was slightly truncated for the expert group (see Table 2.3) relative to other groups and concentrated on known mental health constructs, such as those encompassed by clinical conceptions of mental health. This likely reflects that the experts had identified positive and negative affordances from digital technology use prior to discussing mental health. The affordances suggested by the experts aligned with many of the positive and negative mental health experiences (e.g., entertainment, social connection) that arose during group discussions with the child, parent, adolescent, and adult groups who had not been asked specifically about affordances.

Table 2.3. Top 10 positive and negative mental health experiences of digital technology use and mean importance ranked by the expert group

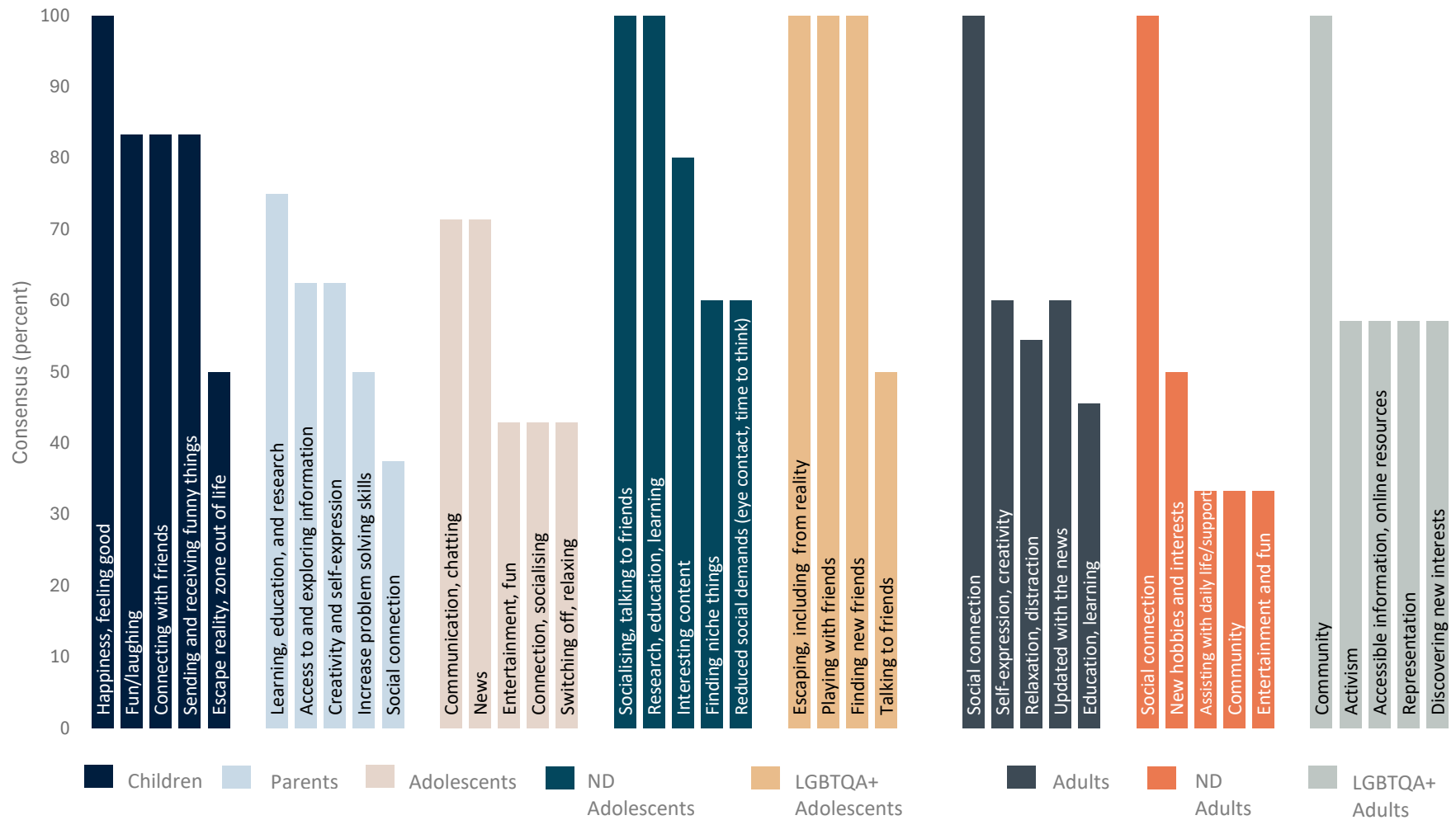
Topic	Importance Mean (SD)	Priority Ranking
Positive Mental Health Experiences		
Wellbeing	4.4 (0.97)	1
Positive mood	4.3 (1.16)	2
Resilience	3.9 (1.20)	3
Identity (clarification/confirmation of identity)	4.1 (1.29)	4
Support	4.3 (0.67)	5
Life satisfaction	4.1 (1.10)	5
Self-esteem	3.7 (1.16)	7
Learning/knowledge	4.2 (0.92)	8
Joy	3.9 (1.29)	9
Body appreciation	3.5 (1.51)	9
Negative Mental Health Experiences		
Loneliness	4.6 (0.70)	1
Anxiety (including social anxiety)	4.3 (0.95)	2
Body dissatisfaction/body image concerns	4.3 (0.82)	3
Depression	4.2 (0.92)	4
Self-harm and suicide	4.7 (0.67)	5
Poor self-regulation	3.9 (0.99)	6
Sexualisation	4.6 (0.52)	7
Eating disorders/ disordered eating	4.2 (0.92)	7
Sexual harm	4.4 (0.84)	9
Social media addiction	4.4 (0.97)	10

In light of the importance of mental health variables as outcomes in the project, we have listed the top 10 ideas suggested by the expert group, rather than the top 5 ideas as per other categories. Moreover, including the top 10 list here shows the priority order of suggested mental health outcomes that were later chosen for inclusion in the project (see section 2.1.5 for detail on this process).

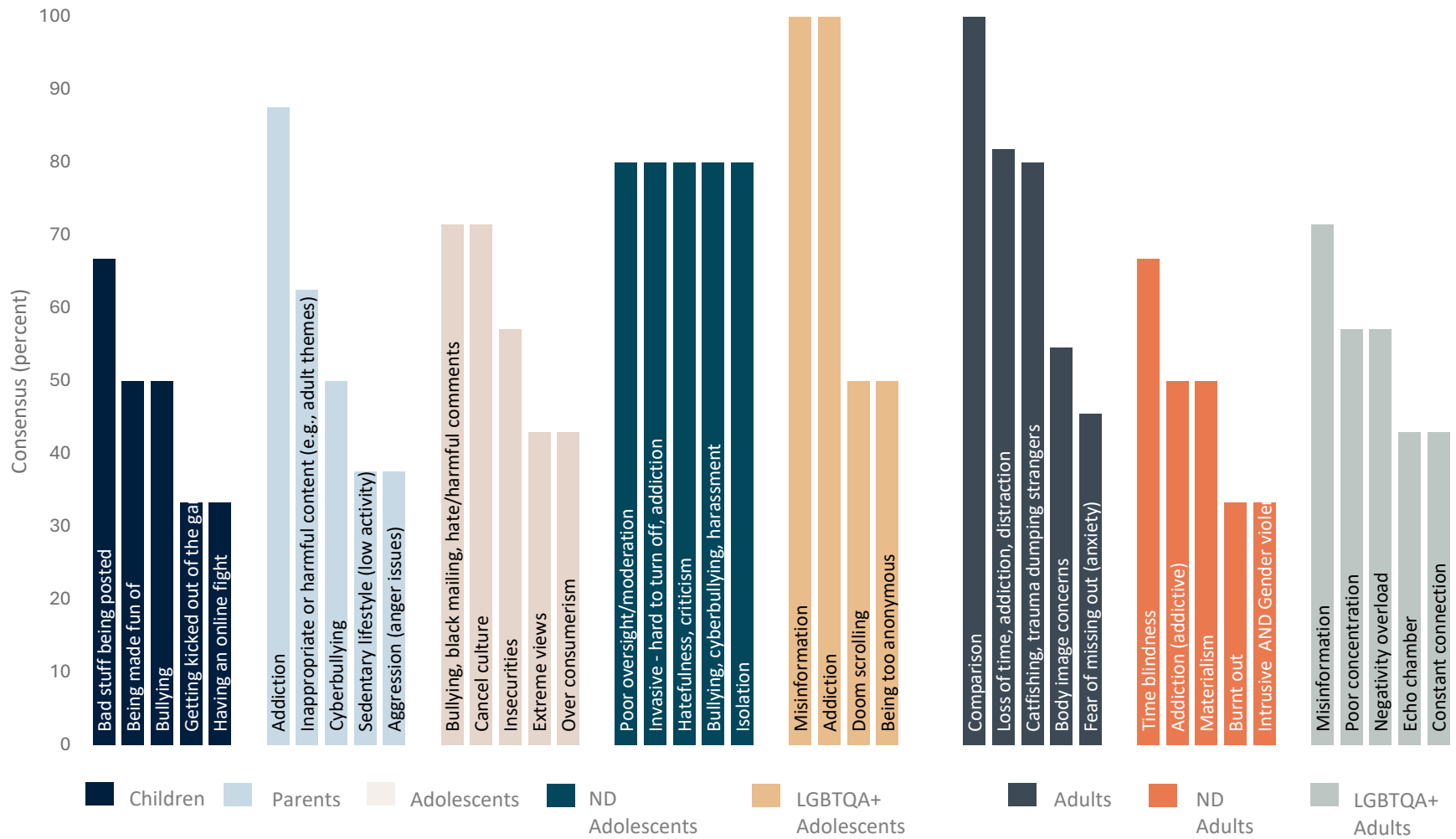
Several positive mental health experiences were rated as high priorities for inclusion in research by all stakeholder groups, as shown in Figure 2.3. Social connection (also encompassing community, connecting and communicating) was included in the top 5 priority list for all groups and was the highest priority for most adolescent and young adult groups. Being entertained and receiving enjoyment from digital technology also emerged as a priority positive mental health experience across several groups as did relaxation and escapism, identified by some groups as 'switching off'. Positive experiences related to learning and access to information, and to creativity and self-expression were also commonly prioritised as important for including in research. Two types of positive experiences were selectively prioritised by some groups but not others. These were activism and representation, specific to LGBTQA+ adults, and accessibility (i.e., reduced social demands facilitated by technology) and support, unique to neurodivergent groups.

Prioritisation of negative mental health experiences also resulted in commonly identified experiences across groups (see Figure 2.4). These included bullying, harassment, and harm, as well as exposure to potentially harmful content. Similarly, negative experiences relating to addiction and distraction were prioritised by most groups, while some groups also prioritised related experiences of intrusion and overload from digital technology use.

Due to the higher number of suggested ideas by some groups for positive and negative mental health experiences, slightly weaker consensus on priority ideas was observed here than for other topics.

Figure 2.3. Level of consensus (percent) among group participants for inclusion of positive mental health experiences

Note. Note. ND = neurodivergent. Only four ideas were endorsed as priority positive mental health experiences by the LGBTQA+ adolescent group (N = 2)

Figure 2.4. Level of consensus (percent) among group participants for inclusion of negative mental health experiences

Note. Note. ND = neurodivergent. Only four ideas were endorsed as priority positive mental health experiences by the LGBTQA+ adolescent group (N = 2)

2.1.5 Mechanisms

Only the expert group explicitly discussed and voted on priorities for mechanisms that may link digital technology use to positive and negative mental health outcomes. This group identified 57 possible mechanisms among which the top 10 priorities selected for research were selected are shown in Table 2.5. The chosen priority areas reflect potentially positive and negative processes that may arise from digital technology use. It is notable that many of these are similar to the positive and negative mental health experiences of digital technology use expressed by children, parents, adolescents, and adults in their group discussions and priority setting presented above.

Table 2.4. *Top 10 potential mechanisms and mean importance ranked by the expert group*

Mechanisms	Mean (SD)	Priority Ranking
Displacement of other activities/processes	4.2 (1.03)	1
Bullying	4.2 (1.03)	2
Access to support and resources	4.5 (0.85)	3
Social comparison	4.2 (0.79)	4
Social support/connection	4.7 (0.48)	5
Digital literacy	3.6 (1.08)	6
Exposure to harmful/hateful content	4.3 (0.82)	7
Discovery/exploration	3.8 (0.63)	8
Sleep	4.1 (0.99)	9
Idealisation/internalisation of ideals	4.0 (0.82)	9

2.1.5.1 Qualitative Exploration of Linkages between Digital Technology Use and Mental Health

Qualitative data from the group sessions with children, parents, adolescents, and young adults were analysed using thematic analysis (Braun & Clarke, 2019, 2020) to a) identify perceived links between digital technology use and mental health (discussed as mediators or mechanisms underlying these relationships in the expert group) and b) explore how and why these mechanisms contribute to this relationship and why they are key contributing factors to overall outcomes. Seven themes arose from this analysis.

Theme 1. Social influence

Social influence was considered to be a key contributing factor linking the relationship between digital technology use and mental health. Visibility of online behaviours and views was recognised as influencing attitudes and behaviours “...people go in the comment sections and see what other people are saying, and their opinion is actually influenced by the people that are commenting....” (13-17 adolescent). Similarly social comparison - “You’re also anxious and stressed because you frequently compare... and everyone else seems to be living it up on social media.” – (18-25 neurodivergent adult) and promotion of unrealistic/idealised standards were identified as forms of social influence, along with social norms whereby digital technology is used to shape online self-presentation to align with norms. These mechanisms were often, but not always, discussed as leading to negative mental health outcomes.

Subtheme 1.1. Pressure and expectations

Perceived pressure to stay active online (e.g., “...I think there is a real expectation to have a certain kind of digital presence.” [18-25 LGBTQA+ adult]), keep up with trends – which were identified as constantly evolving), and to align with the majority opinion (e.g., “...you might say something on social media, and you could end up with so many people responding to your comment being like, ‘no, that’s wrong’.” [13-17 adolescent]) were felt by participants as both explicit and implicit pressures. The constantly evolving nature of social expectations, and that pressures to stay engaged can foster fear of missing out, were also identified as mechanisms linked to negative mental health including feelings of anxiety or stress.

Theme 2. Unlimited Connection

The almost limitless ability and opportunity to connect through digital technology was discussed as an important facilitator of positive wellbeing. Mechanisms related to maintaining, developing and enhancing personal connections were central within this theme (e.g., “...it’s a good way to communicate, keep in touch with friends” [18-25 adult G1]; “...you have these people that have mutual interests, but [who you otherwise would] not be able to come into contact with...” [13-17 adolescent]).

These tools for connection were also perceived to have indirect benefits through provision of new avenues for joy and entertainment and to learn new things (e.g., “...there’s a lot of opportunity on social media to find new things that you’ve never done before...” [P2, 13-17 general]), encounter new ideas, and find like-minded others (e.g., “I know there are people who don’t have an accepting family and allowing them to talk to people who do accept them is really, really important.” [13-17 LGBTQA+ adolescent]).

Connection also provided access to support and services that might otherwise be inaccessible (“it’s made telehealth and online counselling more accessible...” [18-25 adult]).

Theme 3. Digital saturation and overload

Participants reflected that otherwise positive aspects of digital technology could become overwhelming, leading to negative outcomes. This included observations that there are too many things to keep on top of and that unlimited connection with digital technology can feel like being bombarded with content, information, and platforms. The quantity of information was perceived as being unmanageable. This was expressed in relation to particular content, such as the 24-hour news cycle (e.g., “...having that endless feed of *that*, just constantly whenever you pick up your phone and go into an app, it can just, drain you.” [P3, 18-25 LGBTQA+ adult]) and in relation to specific processes that occur online, such as the frequently observed negativity spiral (Constant exposure to things that are activating/rage-inducing feels sucky... is it doing any good, or mostly just making us feel bad with nowhere to put that bad energy? (18-25 LGBTQA+ adult).

Theme 4. Identity and self-development

Use of digital technology was tied to opportunities for growth and achievement, self-expression, and authentic online self-presentation. These opportunities elicited positive emotions (“you feel happy and good when you get a reward, or win.” [10-12 child]) and allowed for exploration of and development of personal identity wellbeing (“...sometimes in real life you’re limited by the

people around you, in how much you can authentically express yourself.” [18-25 adult]). Moreover, these were discussed as key links in the relationship between digital technology and positive wellbeing.

Theme 5. The ‘virtual’ vs the ‘real’ world

Participants expressed beliefs that there was a ‘virtual’ versus ‘real’ world, and that negative impacts on wellbeing arose when the virtual replaced reality; “...the addiction is leading towards so many negative things like loss of appetite, insomnia, you know, the school grades are affecting, so personal life is affecting, isolated, away from parents, away from siblings and less socializing.” (parent of 5-12). Similarly, engagement with the virtual world was perceived as having real world consequences such as financial risk or deteriorating functioning (“When you're spending all of your time online using that specific set of social skills, your real-life social skills can atrophy quite quickly.” [18-25 LGBTQA+ adult]) linked to over-reliance on technology.

Theme 6. Online facilitated exposure

Participants discussed how digital technology facilitates exposure to ideas and content that young people may not have otherwise been exposed to. This includes interacting with a diverse range of people (e.g., “Sometimes your first instance of interacting with a queer person or someone with mental health issues for example, is actually seeing someone from that space talking about their lived experience and representing themselves.” [18-25 LGBTQA+ adult]) or creating avenues for being exposed to new things (e.g., “...there's a lot of opportunity on social media to find new things that you've never done before...” [13-17 general]). Moreover, digital technologies were discussed as the main way in which young people are exposed to new ideas and perspectives (e.g., “There are a lot of people who [without digital technology] might never have the opportunity to access information about queer people, especially, but really any kind of issue social justice stuff, [without digit tech].” [18-25 LGBTQA+ adult]).

Subtheme 6.1. Exposure to harm

Alongside these neutral to positive experiences of exposure, significant beliefs about how digital technology can lead to negative mental health outcomes through exposure to harmful content and hurtful experiences, as a direct target or witness, were expressed. Discussion of online bullying and harassment was prevalent across groups but differed in presentation (e.g., “...they start bullying you for being like lower than them on a [game] level, or a little bit badder at the game than them.” [10-12 child]; “But people definitely abuse [dating apps] to sexually harass people and do like unwanted things to people, and that's really bad, or like it's used to facilitate in real life violence as well.” [18-25 neurodivergent adult]). Young people were also concerned about experiencing stress or trauma vicariously through ‘trauma-dumping’, for example:

I've had, like, random people just reach out to me and just share their whole life story unprompted... then, you know, I'm 18 years old, and suddenly I feel responsible for the mental health of this, like, 28-year-old woman... which can feel really stressful and overwhelming. (18-25 adult)

Exposure to potentially dangerous or anti-social behaviours was also discussed across most groups (e.g., “People are nasty on the internet” [18-25 adult]; “...most social media sites, even the

best ones, have a scarily large population of people... doing stupid stuff or watching stupid things that is not good for them or good for anyone.” [13-17 neurodivergent]) and that this exposure can have serious negative impacts on mental health. Specific concerns were also raised about young people’s exposure to risky or harmful behaviours (e.g., “I think technology can be bad – some games and apps contain features that resemble gambling, violence, etc.” [parent of 5-12]).

Theme 7. Turning your brain off

Features of digital technology such as algorithms were perceived to facilitate mindless, passive behaviours akin to “turn[ing] your brain off” (18-25 adult); “Like you go on TikTok, you know that you’re probably gonna see stuff you like, cause your algorithm..., and it doesn’t require anything from you like..., you can just sit there and scroll.” (13-17 adolescent).

This passivity was described by some as being beneficial for mental health, particularly as a low-effort coping strategy for stress (e.g., “It’s what I do when I just really need a break. I just scroll until I feel better.” [13-17 LGBTQA+ adolescent]).

There was also some discussion about this coping strategy having detrimental impacts on young people’s mental health, such as from zoning out of for too long or becoming detached (e.g., “For the zoning out of life, sometimes when you zone out of life for a bit too long, after that you might feel lonely and forget about everything you did before.” [10-12 child]). Detachment was associating with losing a sense of time and impacting concentration and disruption of other activities, including those that may have long-term benefits; “It’s the easiest thing to do, which just stops people from doing other things... You don’t have to make any decisions you just start doing that instead.” (18-25 neurodivergent adult).

2.1.6 Finalising Priority Topics for Research Inclusion

To finalise the digital technology, features and affordances, positive and negative mental health outcomes, and mechanism topics for inclusion in the research, quantitative and qualitative data across all consultations groups was consolidated and reviewed. The review and decisions on inclusions were underpinned by key considerations that a) like constructs would be combined to avoid redundancies (e.g., social connection and social support), b) retained constructs could feasibly be assessed in the subsequent empirical studies for the project, c) those constructs endorsed by multiple groups would have high priority for inclusion while others could be included if highly relevant for some cohorts even if not relevant for others, and d) individual constructs could be included regardless of the number of other constructs they were related to across other categories (e.g., the “likes” affordance is relevant for social media and messaging technologies but not other technologies such as artificial intelligence but this would not limit its inclusion as a construct of focus).

The review aimed to prioritise the most important ideas by comparing quantitative rankings from all groups and the mechanisms identified in the qualitative analyses from discussions with stakeholders. In addition, we aimed to support decisions on included constructs by clarifying the categorisation of some suggested constructs that appeared to sit across categories. This mostly related to differentiating between features/affordances and mechanisms (e.g., constructs such as addictive/persuasive design features and addiction to digital technology use were identified

across these categories) and between mental health experiences and mechanisms (e.g., experiences related to digital technology use identified as a mental health constructs by stakeholders), where overlap had been observed. This resulted in acceptance that a) some constructs sat across more than one category, b) a tighter definition for mental health constructs was needed such that these were restricted to specific mental health outcomes such as anxiety, depression, life satisfaction, etc, and c) many suggested positive and negative mental health experiences would be reallocated to the mechanisms category.

The final list of all included constructs for the empirical studies in the project is provided in Appendix A. The inclusions were 10 digital technologies, 10 features of digital technologies, 6 affordances, 5 positive mental health outcomes, 7 negative mental health outcomes, and 24 mechanisms. Most inclusions were considered relevant for all cohorts, with few exceptions; typically for children (e.g., educational games, anger/aggression) or the diverse cohorts of children and young people identifying as neurodivergent (i.e., accessibility) and LGBTQA+ (i.e., acceptance and validation).

We recognise that no single study in this project can address all included constructs given their breadth and volume. However, for most constructs, this project will present data from more than one source, to provide the highest quality of evidence to address the research questions.

3. Project Methodology

3.1 Overview

This project intends to enhance understanding of digital technology use by children and young people and its relationship to mental health through a comprehensive evaluation of existing and new data sources.

Evaluation of existing data sources includes:

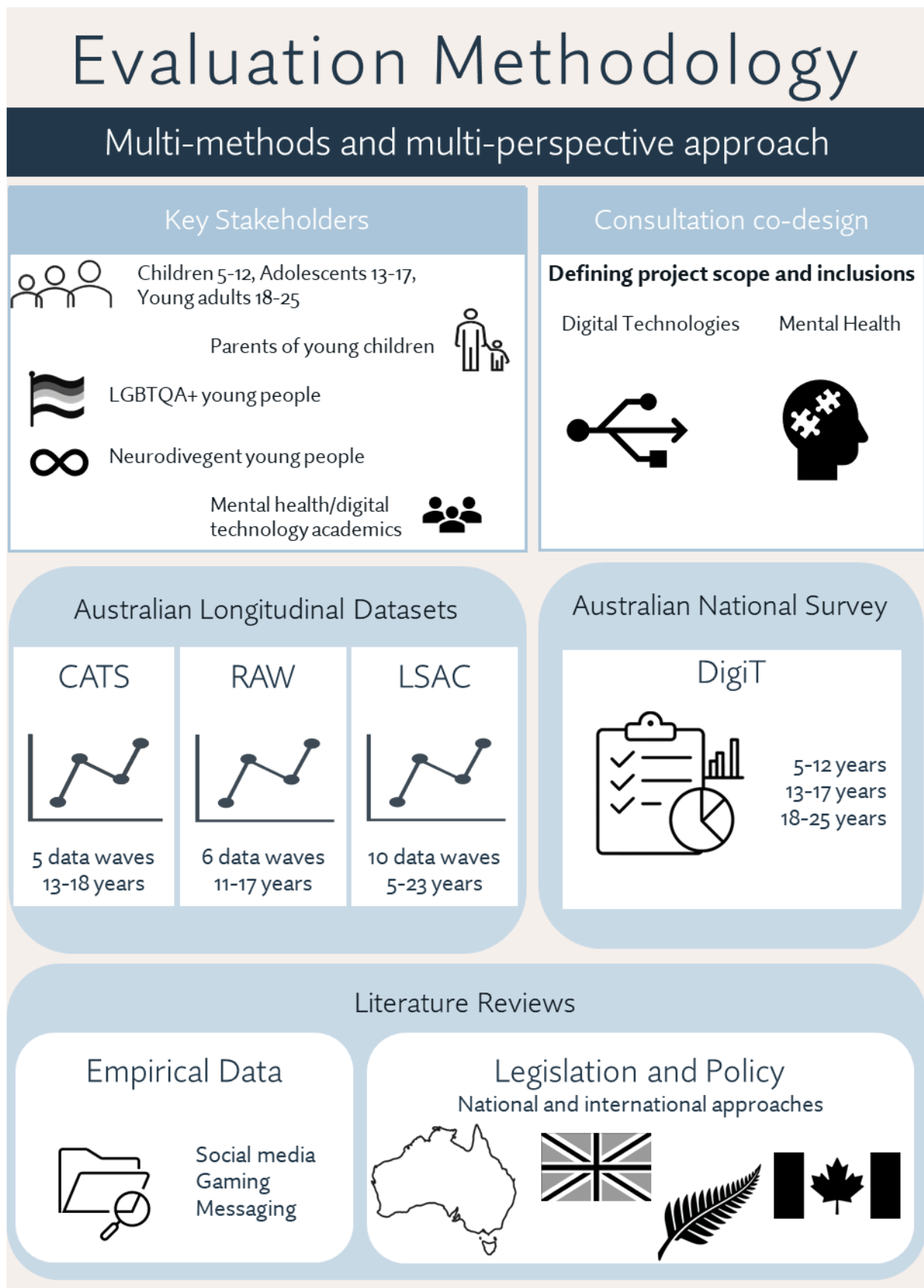
- Systematic review of empirical literature that can examine causal links between digital technology use and mental health and wellbeing,
- Comprehensive analysis of existing Australian longitudinal datasets to examine links between digital technology use and mental health and wellbeing as well exploring the timing and direction of these relationships.
- Comparative analysis of national and international law and policy pertaining to influence outcomes of digital technology use.

New data collected through survey and interview methods provides an account of contemporary digital technology use in representative samples of children (parent-report) and young people (self-report), and targeted samples from diverse groups. A summary of the study methods is shown in Figure 3.

The multi-study, mixed methods approach to data collection and analysis recognises inherent limitations in the amount and type of data that any single study can collect from participants. Moreover, the approach recognises that each study design type confers strengths in the sorts of data it may provide with confidence, as well as limitations in the form of design biases that weaken the capacity of any single study to comprehensively address one's research questions. By adopting the triangulation method (Lawlor et al., 2016), we integrate findings from these different study types to benefit from their collective strengths and minimise the limitations of any one study type.

The review of past literature, including from international research, provides a means to contextualise the observations from interrogation of the newly collected and pre-existing data in the Australian context. The analysis of existing Australian datasets enables identification of patterns of relationships between digital technology use and mental health over an extended period of time, not constrained by the shorter timeframe of the current project. However, as the collection of historical (or completed study) documents and previously collected data, are often conducted for purposes that do not exactly match the intended purpose of this project, there may be gaps in what has been previously tested in the empirical literature and in the availability of data from existing datasets to specifically address the present research aims. Past literature may also vary as to the quality of the included studies (e.g., in terms of representativeness of samples, validity of measures, etc.).

Review of Australian and international legislation and policy responses regarding children and young people's digital technology use not only provides insights into efforts undertaken to maximise benefits and minimise harms from digital technology use, but also signifies the types

Figure 3.1 Summary of project methodology

of technologies and potential effects on children and young people that are considered of sufficient importance to require governmental oversight and intervention. Again, however, the legislative and policy review is constrained by pre-existing conditions that vary in relevance to the present project, such as inclusion of approaches that may or may not directly address mental health as an intended outcome of the government action. Moreover, legislation and policy responses may suffer from lack of timeliness in that these responses can require significant time to be enacted following the identification of an issue. Thus, primary data that is specific to mental health and that reflects contemporary experiences is also required for a full perspective on this topic.

Consultation with relevant stakeholders, particularly children and young people, provides both a contemporary, lived experience perspective as to currently relevant digital technologies and mental health experiences and is essential to inform what is most important to examine in this project. As outlined above, insights from consultation with diverse stakeholder groups - where exploration of qualitative contributions built on quantitative data - underpinned decisions as to digital technology and mental health variables for inclusion in this project. Including consultation as a key component of the project methodology also ensured that the conduct of the project aligns with the Office for Youth's *Engage! A strategy to include young people in the decisions we make*. That is, centring the voices of children and young people through the initial project consultation phase directly shaped the directions of the project. Moreover, these contributions thereby contribute to government decision making by ensuring the outcomes and implications of this research are shaped by and communicate young people's experiences and preferences.

Lived experience consultation also guided construction of the cross-sectional survey of different age and population groups. In the rapidly changing digital technology environment, data obtained from the survey was essential in understanding the current state of digital technology use and mental health experiences of children and young people. While cross-sectional in nature, and thereby precluding causal explanations, survey data provide an important 'moment in time' snapshot of concurrent relationships between digital technology use and positive and negative mental health that reflect the present experiences of children and young people in Australia.

3.2 Individual Study Method Overview

3.2.1 Empirical Literature Review

A systematic search was conducted for empirical literature that examines the longitudinal relationships between digital technology and children and young people's mental health (e.g., relationships over time). The purpose was to identify relevant literature with which to contextualise results from analyses conducted for this report with data collected from Australian children and young people. A search was conducted in August 2025 across four databases: MEDLINE (Ovid), PsycINFO, Social Science Database and Scopus. Multiple digital technologies were searched for, including social media, gaming, smartphones, and digital devices. Mental health outcomes searched for included depression, anxiety, self-harm/suicide, positive affect, wellbeing, self-esteem, and body image. The search was restricted to children, adolescents, and young adults, with specific age limits of 5-25 applied for the eligibility criteria. Also included as an eligibility criterion was the requirement that studies collect data on at least two time points from

which prospective associations between digital technology use and mental health could be examined. The search terms did not include features/affordances or mechanisms of interest as their inclusion would have reduced search sensitivity due to inconsistency in terms. Further detail on search terms and eligibility criteria and is outlined in the Technical Report, Chapter 2.

From an initial 28,133 articles identified from the search, 713 were initially confirmed as meeting the eligibility criteria for digital technology, mental health constructs, age range, and collection of data across at least two datapoints. Following data extraction and closer examination of methodologies, included constructs, and actual data analysis, studies with experimental, network analysis, and systematic/meta-analytic review designs were excluded, as were longitudinal studies that examined associations between mental health digital technology use other than social media, gaming, and messaging/chat (identified as high priorities in the project consultation phase), and studies that presented only cross-sectional analyses despite having data from more than one timepoint.

The papers included in the synthesis of findings from published studies (N = 184 unique papers) examined three technology types; social media use (n = 126), gaming (n = 77), and messaging/chat (n = 12). Several papers (n = 31) assessed multiple types of digital technologies and are included across categories. The literature contained all mental health indicators within scope for the project, with the highest concentration for depressed mood, and to a lesser extent anxiety and wellbeing (including self-esteem). Less common mental health indicators were disordered eating, body image, and self-harm or suicide. Effects are examined across age groups of children (5-12-years), adolescents (13-17-years), and young adults (18-25 years).

3.2.2 Analyses of Existing Longitudinal Datasets

We used data from several existing studies to assess the longitudinal relationships between digital technology use and mental health and wellbeing outcomes across childhood, adolescence, and young adulthood. These existing datasets contain repeated assessments of digital technology use and mental health of young Australians, following the same cohorts of participants from childhood through to late adolescence and young adulthood. Whereas the Longitudinal Study of Australian Children (LSAC) covers a range of digital technologies over its period of observation (2004-2025), the Child to Adult Transition Study (CATS) looks specifically at social media, and the Risk to Adolescent Wellbeing (RAW) project covers social media, YouTube, and gaming. Each of the sources enables evaluation of how time use relates to mental health; RAW provides greater insights into how these relationships depend on specific platforms of digital technology, whilst LSAC also explored types of behaviours and impacts of use on these digital technology platforms. As such, these data sources allowed for evaluation of consistency of findings, as well as distinct but complementary foci for a more complete picture of how and why digital technology use relates to mental health.

3.2.2.1 The Child to Adult Transition Study

The Child to Adult Transition Study (CATS; Mundy et al., 2013) is a longitudinal, population-based cohort study that recruited a sample of 1,239 Grade 3 students in 2012 from a stratified cluster sample of schools in Melbourne, Australia. CATS tracks the cohort longitudinally, on an annual basis, to assess timing and stage of developmental milestones on mental health across

childhood and into adulthood. Measures include student-, teacher-, and parent-report measures. Though the initial focus of CATS included an emphasis on the role of pubertal development on change in mental health, here, we limit focus to measures of digital technology (specifically, social media) and mental health.

For this report, we focus on CATS Waves 4-11, which cover the cohort from ages 12-19 years and include measures of social media use and mental health (depression, anxiety, wellbeing, and self-harm). These CATS data were used in the present report to evaluate: (1) social media use patterns across childhood and adolescence, (2) potential bidirectional effects for the relationship between social media use and mental health, and (3) the extent to which vulnerability to the effects of social media on mental health may differ as a function of gender/sexual diversity, discrimination on the basis of ethnicity/culture, and history of bullying experiences. We report briefly on analyses from CATS conducted prior to the commencement of this project that explored the prediction of mental health symptoms over time from social media use before providing more detailed reporting of analyses conducted specifically for this project, examining these prospective longitudinal relationships from earlier social media use to later mental health symptoms in vulnerable groups, as well as tests of the reverse direction of associations (i.e., from earlier mental health symptoms to later social media use) among the full sample.

Ethical approval for the CATS project was obtained from the Royal Children's Hospital Human Research Ethics Committee.

3.2.2.2 Risk to Adolescent Wellbeing

The Risk to Adolescent Wellbeing project (RAW) is a 7-wave longitudinal study (2016-2023) of adolescents (N = 528) in Sydney, Australia. From 2016, when the cohort was in Year 6 at school, adolescents completed yearly online surveys in their natural environments (e.g., at home), including measures of their digital technology use and mental health (e.g., depression, anxiety, eating disorder symptoms), and demographic factors. The surveys provide a rich and detailed dataset with validated measures of mental health. Additional components of the broader project (e.g., annual parent surveys, clinical interviews, and in-person laboratory assessments) were beyond the scope of the present report. half of the sample was male (51.1%), with most adolescents identifying as White (81.8%), and were from middle- to high- income families (~80%).

For this report, we focused on self-reported measures of digital technology use and mental health collected in Waves 1-6 when the cohort was aged 11-17 (noting that social media measures were not available at Wave 7 data collection). Available digital technology measures included time spent on social media overall and on specific social media platforms (i.e., Instagram, Snapchat, YouTube), and time spent playing video games. Mental health measures included depression, anxiety, eating disorder symptoms, body dissatisfaction, and life satisfaction. For this report, we took a within-person approach to focus on 1) bidirectional relationships between changes in an individual's digital technology use and mental health over time, 2) windows of developmental sensitivity across early- to mid-adolescence, and 3) the extent to which these relationships differed as a function of gender. Each measure of digital technology use was analysed in relation to each mental health outcome using separate statistical models. We also descriptively examined the frequency with which adolescents reported playing video games that

involved fighting and shooting, and free-text descriptions of the types of videos adolescents reported watching on YouTube, to provide context for the main study analyses. Ethical approval for the RAW project was received from the Macquarie University Human Research Ethics Committee.

3.2.2.3 *The Longitudinal Study of Australian Children*

The Longitudinal Study of Australian Children (LSAC; Soloff et al., 2005), is a cross-sequential longitudinal study that has tracked an initial sample of 10,000 children (5,107 aged 0-1 year old at baseline as the 'baby cohort' and 4,983 aged 4-5 years at baseline as the 'kindergarten cohort') across 10 waves of data (2004 to present). LSAC comprises a range of self-, parent-, and teacher-report measures of psychological health, demographic characteristics, physical activity, and help seeking (formal and informal), and includes a number of measures of digital technology use, and motivation for use, relevant for the present project. Although social media use items were not introduced into LSAC data collection until Wave 7, other forms of digital technology use were captured in earlier waves of data collection, such as use of computer and computer like devices, electronic gaming, and digital communication.

When available, LSAC data from multiple informants were used to help mitigate common method bias (Podsakoff et al., 2024). Furthermore, although LSAC offers a wide variety of measures that are potentially relevant for mental health, we primarily focused on measures of psychological distress (Kessler 6, Kessler 10; Blake et al., 2024; Furukawa et al., 2003) and socio-emotional wellbeing (Strengths and Difficulties Questionnaire; Goodman, 2001) as these were taken consistently across cohorts and waves, enabling comparisons over time. A range of factors theoretically and empirically established as relevant to digital technology use and mental health but not of primary interest to this study (e.g., child sex, family socioeconomic status) were also included in analyses to enhance the quality of estimated potential causal effects of digital technology use on mental health and wellbeing by controlling for those other factors (Aarsman et al., 2024).

LSAC data were used in the present report to specifically evaluate 1) digital technology use patterns across childhood, adolescence, and early adulthood, 2) potential bidirectional effects for the relationship between social media use and mental health, and 3) the extent to which digital technology use may hamper engagement in physical activity and other leisure activities.

The LSAC dataset is available as non-identifiable, downloadable file from the Australian Government Department of Social Services, Australian Data Archive (ADA). Access to this dataset required approval from the ADA based on review of the proposed use of the data and researchers involved. Ethics exemption was provided by Deakin University Human Ethics Committee (DUHREC) for use of these data for the present report.

3.2.3 *Nationally Representative Survey and Supplementary Interviews*

The national survey on digital technology use and mental health (hereafter referred to as the DigiT survey) component of the project examined digital technology use and mental-health outcomes among Australian children and young people. This comprised a large-scale online survey across the three age cohorts and structured interviews with a sub-sample of children

aged 5–12 years. The DigiT survey was designed to balance comprehensive topic coverage and participant burden.

DigiT survey participants were recruited through two complementary pathways: probability-based national sampling conducted by the Social Research Centre (SRC), and targeted recruitment undertaken by the La Trobe University research team via university and partner organisation networks, professional networks associated with the research centre, and third-party recruitment platforms (e.g., Prolific).

The DigiT survey and interview assessed participants' demographic characteristics, digital technology use (including objective screen time data from their smartphone or tablet), digital engagement behaviours, mechanism of use, and mental health outcomes. Mental health outcomes were assessed using validated measures spanning domains of wellbeing, self-concept clarity, LGBTQA+ identity affirmations, loneliness, depressive symptoms, generalised anxiety, social anxiety, eating disorder risk and symptomatology, body esteem and body dissatisfaction, and aggression and anger. Parent-report versions were used for the 5–12 cohort in the survey, with child-friendly adaptations applied in the interviews. The survey was informed by co-design through a 'think-aloud' process in which participants from the project consultation provided feedback on and shaped the wording and response options of survey items developed for this research.

A total of 1,670 participants completed the online DigiT survey across three age cohorts: 660 parents or guardians reporting on a child aged 5–12 years, and 453 adolescents aged 13–17 years, and 557 young adults aged 18–25 years reporting for themselves. Estimated completion times were approximately 20 minutes for the parent-report survey (5–12 years) and the young adult survey (18–25 years), and approximately 10 minutes for the adolescent self-report survey (13–17 years, latter shortened to reduce burden of self-report for this particular age group).

Across the three age cohorts, the gender representation was relatively comparable for males/boys and females/girls. In the 5–12 group N=310 (47%) identified as female/girl and N=337 (51.1%) as male/boy. Within the 13–17 group, there were somewhat more females/girls, N=220 (48.9%), than males/boys, N=194 (43.1%). This gap increased again in the 18–25 group, with N=302 (54.2%) females/girls compared to N=181 (32.5%) males/boys. Gender diversity also increased with age, with 0.3% of the children in the 5–12 cohort identified (via parent-report) as non-binary, rising to 2.4% of participants (self-reporting) in the 13–17 group, and 5.0% in the 18–25 group. Moreover, the 18–25 group included representation of transgender individuals, with 3.6% of participants self-identifying as trans-men and 1.8% as trans-women.

Regarding LGBTQA+ representation across the teen and adult cohorts, among the 13–17 group N=72 (16%) participants self-reported identifying with a sexuality other than heterosexual, including N=32 (7.1%) self-identifying as bisexual and 13 (2.9%) as asexual. This representation was more pronounced in the 18–25 age group, where N=212 (38.1%) participants self-identified as LGBTQA+, most notably N=75 (13.5%) as bisexual, N=37 (6.6%), as queer, and N=30 (5.4%) as lesbian individuals.

Neurodivergent identification was most prevalent among both the oldest and youngest DigiT participant cohorts. In the 5–12 age group, N=170 (25.8%) participants identified (via parent-

report) as neurodivergent. The (self-identified) rate of neurodivergence was highest among the 18–25 cohort at N=174 (31.2%) and lowest among the 13–17 group at N=74 (16.4%). Across all age cohorts, ADHD and Autism were the most commonly reported specific exemplars of self- or parent-reported neurodivergence.

We note that we deliberately sought to oversample neurodivergent and LGBTQA+ participants to meet the secondary aims of this research - to examine digital technology experiences and association with mental health outcomes among vulnerable groups. Targeted recruitment of participants in these groups was via known community channels through university and partner organisations.

We achieved national coverage within the DigiT survey sample, with participants residing in every Australian state and territory. Participation was consistently greatest from the most populous states, Victoria and New South Wales. Victoria was the most strongly represented states for participants in the 5–12 (36.1%) and 13–17 (37.8%) groups, while New South Wales was so in the 18–25 cohort at 33.2%. There was also strong representation of participants from Queensland, with over 17% of participants in the two younger cohorts from that state.

As the DigiT survey targeted parents to provide informant-report on children aged 5–12 years, we sought a sub-sample of children themselves, in this 5–12 age group, to share their own experiences through participation in structured follow-up interviews. The 660 parents who completed the DigiT survey reporting on a 5–12-year-old child, 143 expressed interest in and provided consent for their child to participate in an interview with a member of the research team, and among these, 42 children subsequently did so. Participating children spanned the full range of ages for this group (i.e., 5–12 years; mean age = 8.8; SD = 2.01). Further to parental informed consent prior to interview, researchers also obtained verbal assent from the child at the start of each interview.

Descriptive statistics summarised patterns of digital technology use and mental health and wellbeing outcomes across cohorts. We then explored associations between time spent on digital technology, digital engagement behaviours, and mechanisms of use with mental health and wellbeing outcomes with correlation analyses. Further analyses examined whether these associations differed across demographic groups, exploring moderation by gender, LGBTQA+ identity, and neurodivergent identity).

3.2.4 Review of Legislative and Policy Approaches

This review aimed to identify and compare legislative and policy approaches (captured through to mid-June 2025) established to maximise benefits and minimise harms of digital technology use in children and young people. The primary focus was on approaches used in Australia and three additional high-income common-law jurisdictions with broadly comparable legal and institutional arrangements: the United Kingdom (UK), Canada, and New Zealand. Across these jurisdictions, both federal and state laws were considered where applicable. However, where relevant, the review of legislative and policy approaches also briefly noted novel or influential approaches from other jurisdictions - including the European Union (EU), the United States (US), France, Ireland, and China - examples included to illustrate the range of regulatory options available internationally (not as direct comparators).

To clarify how governments intervene in children and young people's engagement with digital technologies, we first sought to identify a set of key functions or domains of government action. These were limited to the actions that are most relevant to children and young people's mental health in digital environments. Second, we organised approaches according to their regulatory force along a spectrum of 'soft' (i.e., education and information campaigns) to 'hard' (i.e., enforceable legal duties) regulation. This organisation clarifies the intended effects, strengths and limitations, and provides a point of comparison of approaches across jurisdictions. Finally, to inform cross jurisdiction comparison, our review focused on law and policy intended to both prevent harms and promote benefits to mental health for children and young people.

The methodology of this legislative and policy review combines a socio-legal research approach, which considers law in its social, institutional, and policy context (Banakar & Travers, 2005), with a doctrinal legal research method, that analyses existing laws to clarify and explain what the law is (Hutchinson & Duncan, 2012). For this review, doctrinal legal research helps to examine laws concerning digital technology use by children and young people which are intended to respond to issues of mental health and wellbeing that may arise from technology use. Socio-legal research then helps to explore the context in which those laws are made, interpreted and applied in practice, and how they shape, and are shaped by, social conditions.

Comparative legal and policy analysis is a method that can be applied to both socio-legal or doctrinal approaches. It is used in this review to compare the relevant law and policies across different jurisdictions or contexts to identify similarities, differences, and lessons about how and why policies work.

In addition, a rapid review of literature that has examined the extent to which legislative and policy interventions have been empirically evaluated was conducted. Searches were conducted across academic databases (ProQuest, Scopus, Medline, PsycInfo, and Google Scholar) and grey literature sources, such as government inquiries and reports from non-government organisations. The search was limited to material published between 2015 and 2025, reflecting the period of most significant regulatory development in this area. Eligibility was limited to papers with participants aged 5-25 years that examined effects of legislative, regulatory, or government-mandated measures relating to digital technologies designed to improve children or young people's mental health.

3.3 Methodological Limitations

The overview of project methodology section (Section 3.1) outlined some limitations that would constrain any single study design from fully answering the research questions posed in this project. Here we recognise some broader caveats of the methods that apply across the project.

Digital technology changes rapidly and young people tend to be early adopters of new technologies. Thus, data collected over years prior to commencement of the project and to setting the project inclusions (as outlined in Section 2.1), as required for our longitudinal data analysis (i.e., CATS, RAW, LSAC), do not necessarily assess technologies that may be considered contemporary and relevant in 2026, or have a level of granularity to delve into specific digital technology activities and behaviours. To mitigate this limitation, our cross-sectional DigiT survey specifically attempted to assess contemporary digital technologies and specificities of use, as

informed through our stakeholder consultations. These data from the DigiT survey represent a snapshot in time so cannot inform cause and effect and are intended to be considered in conjunction with evidence from other sources in the project.

Studies included in the review of empirical literature comprise research conducted over the past 15 years and prior to commencement of the project. Thus, as noted above for our longitudinal data analysis, some digital technologies and types of use examined in the included empirical literature may not be contemporary. However, this timeframe is necessary to capture prospective effects, particularly where data have been collected over several years. This review is also limited by the number of available studies that meet eligibility criteria. In particular, few studies were available to assess messaging/chat as a specific type of digital technology. Similarly, there was minimal coverage of some of the mental health outcomes identified as priority inclusions for the report, limiting conclusions that can be drawn regarding effects for those outcomes.

Across longitudinal datasets, the cross-sectional DigiT survey, and studies included in the empirical review, the measurement of digital technology use is typically via self-report and often based on time-use estimates, which are subject to recall bias. Multiple-informant sources of data (i.e., from parent and child-report) and mixed-methods of data collection (i.e., quantitative and qualitative) used across these studies can mitigate these concerns to an extent.

The project intended to explore potential vulnerability to negative effects of digital technology use among demographic groups who are traditionally under-represented in research, including LGBTQA+, neurodivergent, and First Nations children and young people. Our recruitment approaches deliberately attempted to engage participants from these communities. Although our survey recruitment resulted in First Nations participant representation in the sample (3.0%) relatively consistent with Australian population prevalence (i.e., approximately 3.8%), this sample size was insufficient to conduct separate analyses among this group of participants. Additionally, none of the included studies in the empirical literature review that examined longitudinal associations between digital technology use and mental health specifically examined these associations specifically among First Nations communities in Australia or other countries. Thus, we were unable to explore the unique digital technology experiences among First Nations communities.

The legislative and policy review component focused on Australia and three like-jurisdictions and provided a detailed evaluation of the approaches that have been implemented seeking to maximise benefits and minimise harm from digital technology use for children and young people. Although we acknowledge that other jurisdictions also attempt to address these benefits and harms, in-depth comparisons were not attempted between our local Australian context and that in countries where the legal context is not comparable. We have nevertheless provided a brief description of these other approaches, to provide a sense of actions taken outside of the jurisdictions more comparable to our own.

Finally, we note that this project spanned the period of time during which the Australian Government's Social Media Minimum Age legislation came into effect (10 December 2025). Although the legislation is directly relevant to Australian children and young people, the scope of

this project in relation to digital technology is broader than social media. Additionally, the age of the children and young people who are the focus of this project spans ages younger and older than those affected by the new Minimum Age legislation. Moreover, our project primary data collection was completed prior to the start date of the legislation stipulating a minimum age for access to social media accounts so our findings do not focus on attitudes to, or outcomes from this recent change in access to social media. We nevertheless recognise that the implementation of this new legislation provides a contextual background to the project and the consideration of the findings.

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4. Digital Technology Use

CHAPTER 4

KEY POINTS

Digital technology

- 01 Widespread daily use**
Digital technology use is widespread among children, adolescents, and young adults with daily engagement across multiple platforms.
- 02 Patterns vary by age**
Smart phones and social media (Instagram, TikTok & Snapchat) dominate for adolescents and young adults, while children more often use tablets, gaming, and specialised messaging.
- 03 Gaming peaks in mid-adolescence**
Gaming is common, peaking in mid-adolescence before declining in young adulthood. It offers fun, relaxation, escape, and teamwork but is often recognised as distracting.
- 04 Social media near-universal among young adults**
Social media use increases markedly with age and is nearly universal among young adults. Most users primarily message and view, “like” or react to existing content rather than post. Content is received from both known sources and algorithms.
- 05 Benefits balanced by drawbacks**
Social media and artificial intelligence offer both benefits and drawbacks; users report being entertained, accessing information and diverse content, and forming social connections alongside concerns about time loss, distraction, and exposure to harmful content.

4.1 Chapter Overview and Purpose

This chapter addresses the first aim of this project and explores how Australian children and young people engage with digital technology. The chapter will present data captured from our DigiT survey - a contemporary approach designed and conducted to meet the specific aims of this project - and from pre-existing datasets of Australian children (i.e., the RAW, CATS, and LSAC studies).

We interrogated:

- The types of digital technology platforms and devices used by children and young people.
- The types of content children and young people engage with on digital technologies
- Specific behaviours used on digital technologies by children and young people.
- Frequency of reported use of digital technology platforms, devices, and behaviours.
- Developmental trajectories of use and changing patterns of use from childhood through adolescence and early adulthood.

4.2 Digital Device Use and Activities by Children and Young People

Participants from each survey study used a variety of digital technology devices and activities on a regular basis. Devices included handheld devices, computers/laptops, and common activities spanned video watching, gaming, and use of messaging/chat, social media, artificial intelligence and internet forums.

4.2.1 Handheld Devices

Among DigiT survey respondents the most commonly used devices for both adolescents (89%) and young adults (93%) were smartphones. According to parent-report, children used smartphones to a lesser extent (25%) and more commonly used tablets (60%) compared to adolescents (31%) and young adults (31%). In interviews, children reported high use of tablets, with 80% indicating using tablets regularly and moderate use of smartphones (33% using regularly).

4.2.2 Television

Across LSAC and DigiT samples, regular television (TV) use was common but in the DigiT survey, less so in the older cohorts (adolescents 49%; young adults 45%) than the child cohort (60% parent-report; 89% interview). In LSAC, daily use of TV ranged from 94-99% for participants spanning ages 5 to 16 years (data collected 2004 to 2018). These patterns likely reflect contemporary trends away from broadcast television as the only means of access to televisual type of content.

4.2.3 Video and YouTube

Supporting this contention, data collected more recently in the RAW and DigiT survey cohorts showed that access to video content via the internet was common across all ages. During early adolescence, participants from RAW were spending on average half an hour a day on the video streaming platform YouTube (11-14 years of age), increasing to about one hour per day on average during mid-adolescence (15-17 years of age). Similarly, among DigiT participants,

YouTube was used by 84%, 71%, and 59% of children, adolescents, and young adults, respectively. Indeed, according to screen time data recorded from smartphones/tablets, the YouTube app featured among the top 5 most used apps for all groups (children ranked 1; adolescents ranked 4; young adults ranked 4; see Table 4.1). Additionally, from interviews with children, watching long-form videos was the most common digital technology activity, with almost all children (96%) engaging in this activity.

Table 4.1. *DigiT participants' top five apps based on screen time data recorded on phones/tablets*

Rank	App	n	Weekly Hours of Use Mean (Min - Max)
Children 5-12			
1	YouTube	104	6.1 (0.1 – 46.2)
2	Roblox	71	4.5 (0.1 – 25.1)
3	Website browsers ^a	34	1.9 (0.1 – 17.3)
4	TikTok	27	7.2 (0.2 – 34.7)
5	Messenger Kids	24	1.9 (0.2 – 15.5)
Adolescents 13-17			
1	Instagram	184	5.3 (0.2 – 61.0)
2	Snapchat	170	5.1 (0.1 – 30.0)
3	TikTok	166	7.6 (0.2 – 40.0)
4	YouTube	155	6.3 (0.3 – 77.9)
5	Website browsers ^a	113	2.6 (0.2 – 34.2)
Adults 18-25			
1	Instagram	334	6.0 (0.1 – 40.9)
2	Website browsers ^a	254	4.6 (0.2 – 52.0)
3	TikTok	219	8.4 (0.1 – 73.2)
4	YouTube	189	7.6 (0.1 – 51.6)
5	Messaging apps ^b	158	2.8 (0.2 – 71.0)

Note. Min = minimum, Max = maximum. ^a Website browsers reported are Google Chrome and Safari; ^b For adults 18-25, messaging apps include Message (n=86) and Facebook Messenger (n=72)

4.2.4 Computers and Laptops

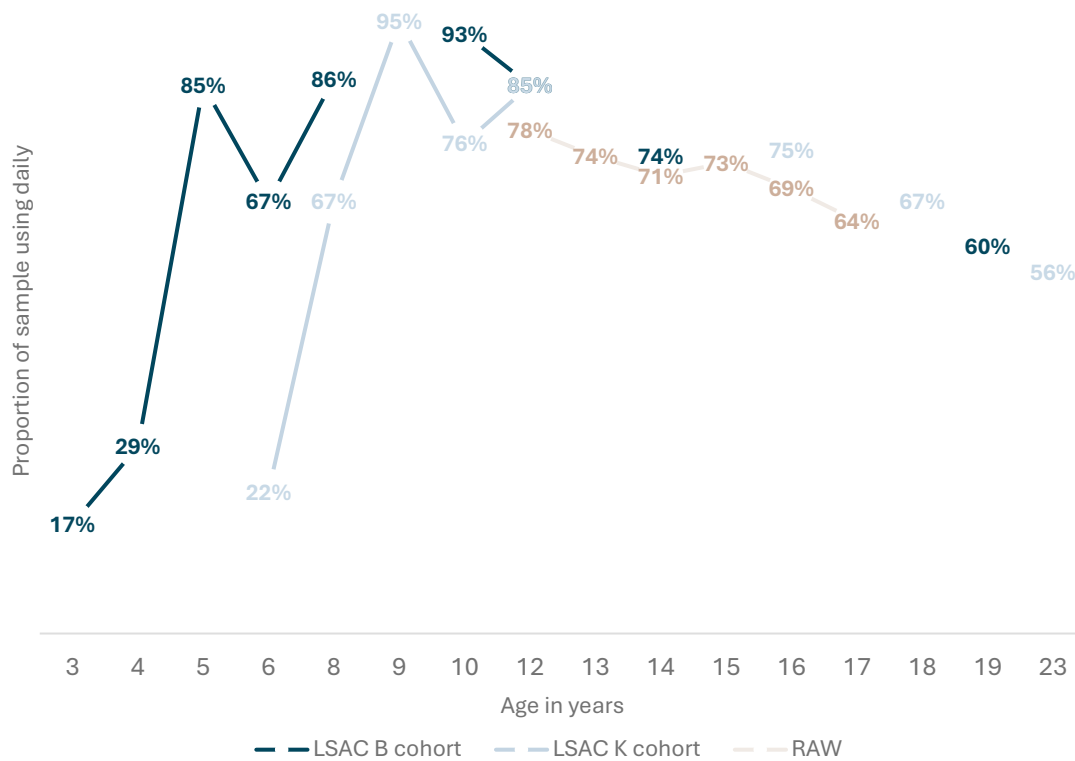
Daily use of computers was moderate to high during childhood for LSAC participants (5-10 years of age 44-98%), whereas in the DigiT survey regular use of laptops by 5-12 year-old children was at a lower level according to parent-report (27%) and moderate from interview report (42%), again perhaps reflecting the higher availability of other devices such as tablets for this cohort. In contrast, DigiT survey adolescents and young adults commonly reported use of laptops, with 76% and 82% respectively reporting being regular users (i.e., used most days in a typical week) of these devices.

4.2.5 Gaming

Electronic gaming, or videogaming (referred to hereafter as gaming), was also commonly used by children and young people across our survey sources. In historically earlier data collected from the LSAC samples, gaming was a popular activity. This was particularly the case for LSAC children, where the majority of 5-12-year-olds engaged in gaming on a daily basis. Daily usage

was observed in slightly lower proportions during the mid-teen years and continued to decline into young adulthood. Similarly, among RAW participants, daily use of gaming was observed in a high proportion of participants, ranging from 78% at age 11 through to 64% at age 17. A clear gender difference in gaming was observed among RAW participants, with higher proportions of boys than girls gaming on a daily basis. The decline in daily gaming observed among the whole sample of RAW participants appeared to be driven to a greater extent by reductions in girls' gaming over time, whereas declines in boys' gaming was to a lesser extent such that proportions of boys gaming on a daily basis remained relatively steady from age 12 to 17. Overall, in both LSAC and RAW, a decline over time in the proportion of the participants engaging in electronic gaming on a daily basis was observed, as shown in Figure 4.1.

Figure 4.1. Proportion of LSAC and RAW participants engaged in daily gaming



Although gaming consoles were used by only about a quarter of participants in the DigiT sample (28% children [parent-report]; 29% adolescents; 26% young adults), gaming was a relatively popular activity, with about half of children (parent-report), adolescents, and young adults gaming regularly (i.e., on most days; see Figure 4.1). From interviews, gaming was the second most common activity reported by children, with 78% engaging with gaming; 50% indicated they used gaming consoles. These reports suggest that gaming is accessed via several different platforms, including online. Indeed, for the DigiT 5-12 child cohort, gaming via the platform Roblox was reportedly among their top 5 used apps (according to screen time) and gaming was the second most common content engaged with on YouTube among participants in the RAW sample. The majority of DigiT participants engaged in gaming for 3 hours or less per day.

Similarly, on average, participants in the RAW sample spent approximately one hour gaming per day, with the greatest time spent gaming occurring at age 15 (1.3 hours per day).

In parent-responses for children, a clear pattern of higher time spent gaming on weekends compared with weekdays emerged in the DigiT sample. For example, on weekdays, 44% of children spent 2 hours or more gaming. On weekends, this increased to 78% of children. In contrast, for young adults, the proportion spending 2 or more hours gaming on weekdays (70%) was somewhat similar to the proportion on weekends (82%). This suggests possible parental mediation of gaming activities of children, whereby use is restricted on school-days relative to weekend days. We note that assessment of time spent on digital technologies for DigiT sample adolescents was collapsed across weekend and weekdays, so a comparison of use is not possible for this group.

Across the three samples, two general patterns in use of gaming were observed. The first is a rise in regular gaming use from childhood, peaking in the mid-teenage years and declining towards young adulthood (as seen in the longitudinal RAW and LSAC samples). The second pattern is that a lower proportion of DigiT sample 13-17-year-old adolescents, whose data were collected in 2025, were gaming regularly (i.e., most days) than same aged adolescents from earlier data collection periods (in RAW, 2018 – 2022 and LSAC, (Baby cohort 2016 – 2018 and Kinder cohort 2012-2018). This may reflect shifting patterns of use where other digital technologies have become more readily available, than in the past decade.

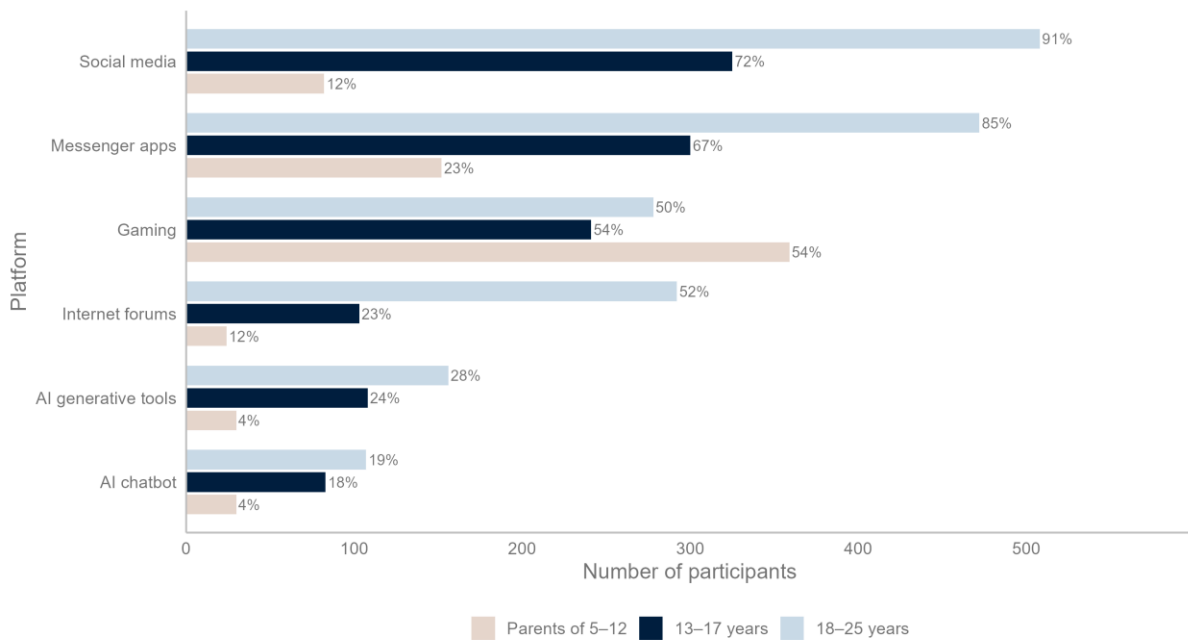
4.2.6 Messaging and Chat

Use of messaging apps was assessed in the RAW and DigiT samples, focusing specifically on use of Snapchat¹ in RAW and messaging and chat more generally in the DigiT survey. The proportion of RAW participants who reported using Snapchat increased steadily with age from 18% at age 11 to 71% at age 17 with similar proportions among girls and boys across these ages.

Data collected more recently in the DigiT survey demonstrates the current popularity of messaging among children and young people. Indeed, messaging apps featured among the top 5 most used apps (according to screen time minutes) for children (Messenger Kids ranked 5), adolescents (Snapchat ranked 2), and young adults (Message/Messenger ranked 5; see Table 4.1 – in section 4.2.3). These data coincide with self- and parent-reported data on digital technologies used on a regular basis (most days), with messaging apps regularly used by high proportions of adolescents and young adults, but to a lesser extent among children, as shown in Figure 4.2. In interviews, child report of messaging app use (51%) was somewhat higher than from parent-report in the survey.

¹ Note. Snapchat is considered both a messaging and social media app, as use of Snapchat is not restricted to messaging and chat.

Figure 4.2. Most used digital technology platforms selected from predefined options by DigiT participants.



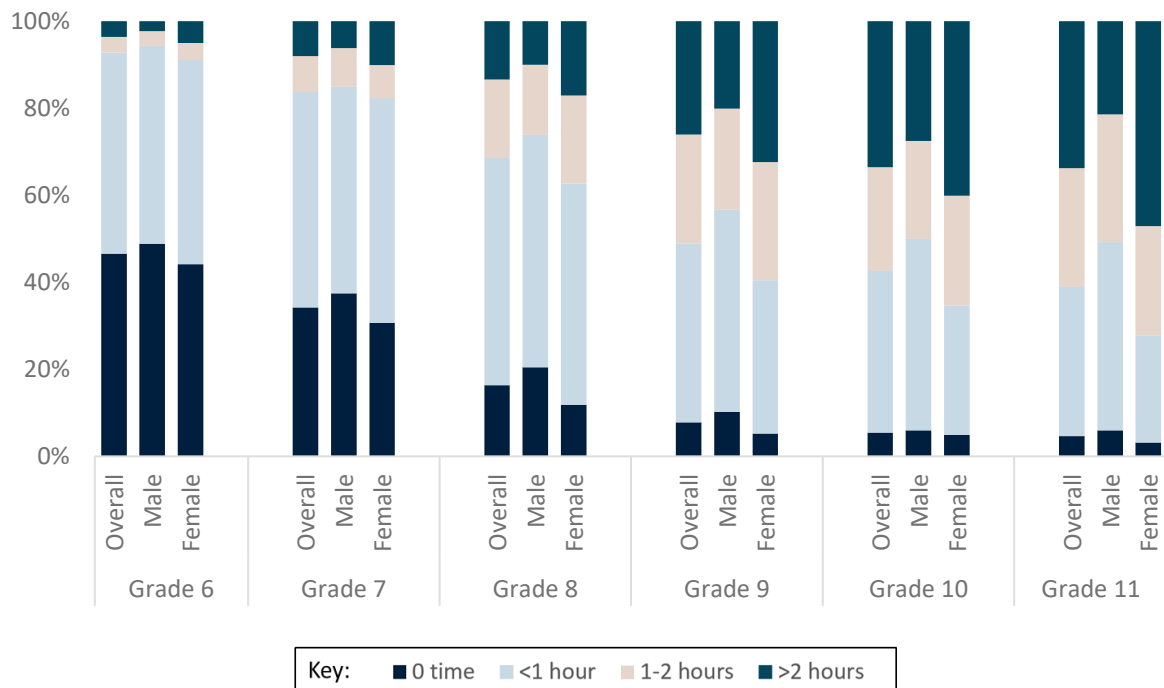
Note. Participants could select multiple platforms

4.2.7 Social media

Data on social media use were available, and assessed, in all four data sources - the new DigiT survey and three existing longitudinal datasets. These consistently showed the popularity of social media use among adolescents and young adults, with lower usage levels among children.

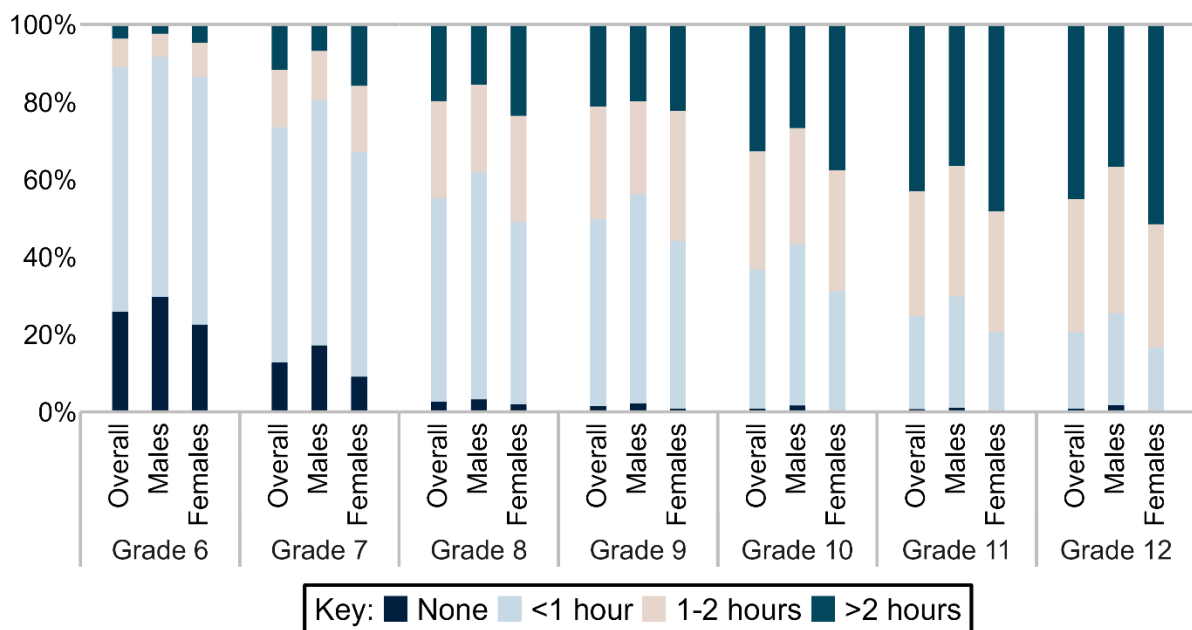
For example, in the DigiT survey, according to device screen time, social media platforms were the top three apps (Instagram, Snapchat, and TikTok) used by adolescents, and the number 1 (Instagram) and number 3 (TikTok) app used by young adults, as shown in Table 4.1. Consistent with screen time use, participants themselves identified their high use of social media, with 72% of adolescents and 91% of young adults reporting using social media regularly (i.e., most days), in contrast to only 12% of 5-12-year-old children. The popularity of and access to smartphone devices, as indicated above, also likely enables regular use of social media given the portability of this technology.

Clear increases in social media use with age were observed within both the RAW and CATS datasets. In the RAW sample, increases in daily time spent on social media from age 11 (mean hours per day = 0.38 ([SD = 0.92]) to 17 (mean hours per day = 1.98 [SD = 1.59]) were apparent, as were increases in the proportion of daily social media users over this time period (see Figure 4.3). Indeed, by age 17, almost all RAW participants (>95%) were using social media on a daily basis. Similar patterns of use by age were also observed for Instagram, Snapchat, and YouTube use in the RAW sample as for general social media use.

Figure 4.3. Hours per day of social media use among RAW participants from grade 6 to grade 11

Note. Participants' mean age was 11.2 years at grade 6 and 16.8 years at grade 11.

Similarly, among participants from the CATS sample, time spent on social media also increased from age 12 to age 18, with considerably higher proportions of both males and females engaging in greater than 2 hours of use per day in late adolescence compared with early and mid-adolescence, as shown in Figure 4.4.

Figure 4.4. Hours per day of social media use among female and male CATS participants from age 12 to 18.

Note. Participants are aged 12 (grade 6) to 18 (grade 12).

Although there was little difference in the proportion of male and female participants from the RAW sample who were not using social media at each wave of data collection, differences were observed between males and females at heavier durations of use. In this manner, greater time spent on social media skewed towards female participants in both the RAW and CATS samples. For example, more females than males were spending more than two hours daily on social media at each time point, although differences were smaller at younger ages.

4.2.8 Artificial Intelligence

Due to the emerging nature of this technology, use of artificial intelligence (AI) was only measured in the DigiT survey (i.e., the study in which data were most recently collected, in 2025). Although AI is an emerging technology, engagement was reflected in adolescent and young adult use patterns, with about a quarter indicating that generative AI tools are among their most frequently used apps (24% adolescents; 28% young adults). Similarly, AI chatbot companions were indicated to be among the most used apps by 17% of adolescents and 19% of young adults. In contrast, use of generative AI and AI chatbot companions was low among children, according to parent-report. For only 5% of children were generative AI or AI companions identified as among their most used digital technology platforms. Similarly low levels of use were indicated in child interviews.

Children who engaged with AI technologies used them for short periods of time, with most of those who used these technologies spending less than half an hour per day² with either generative AI (55% weekday; 72% weekend) or AI companions (67% weekend and weekday). Similarly, among adolescents who used AI, short periods of time was spent with this technology; 65% and 71% of respondents used generative AI and AI companions, respectively, for less than half an hour per day (weekday and weekend use combined). A slightly lower proportion of young adult users of AI spent half an hour or less per day using AI (generative AI 40% weekday, 61% weekend; AI companions 50% weekday, 60% weekend). This pattern of higher time spent with generative AI for young adults than adolescents or children was more pronounced for weekday than weekend use, perhaps reflecting use of this technology for work or study purposes.

4.2.9 Internet Forums

Engagement with internet forums (e.g., Reddit) was also only assessed in the DigiT survey. When asked which digital technologies they used the most, internet forums were indicated to be one of the most used digital technologies by a minority proportion of children (12%) and adolescents (23%), but by about half of young adults (52%). Although overall engagement with internet forums differed across age cohorts, the time spent there was relatively similar. Most participants who used forums did so for an hour or less per day (children 57% weekdays, 57% weekends; adolescents 65% weekdays /weekends [assessment of use did not separate weekdays and weekends for adolescents]; young adults 54% weekdays, 57% weekends). Few users of internet forums reported spending four or more hours per day using this digital technology (children

² ≤30 minutes was the lowest response category in the survey for time spent on digital technologies

22% weekdays, 13% weekends; adolescents 5% weekdays /weekends; young adults 15% weekdays, 14% weekends).

4.2.10 Prevalence of High Engagement with Digital Technology

We explored extensive use (five or more hours per day) of individual digital technologies across the DigiT and LSAC datasets and overall screen time for handheld devices for DigiT participants. Whether based on self- or parent-report data, very few participants spent five or more hours per day using any specific type of digital technology (see Technical Report Chapters 3 and 4 for details). Exceptions to this were observed for gaming (among DigiT and LSAC Kinder cohort participants) and for watching long form videos (among DigiT participants).

A small to moderate proportion of children in the DigiT survey were reported to spend 5 or more hours per day gaming (11% weekday; 19% weekends). Similar levels were seen among adolescents (13% weekday /weekend). Among young adult respondents, rates were higher with 25% and 23% reporting that they spend 5 or more hours per day gaming on weekdays and weekends respectively. Higher rates of long periods of engagement in gaming were observed among LSAC (Kinder cohort) participants. Although at ages 6 and 8, no participants spent 5 or more hours gaming, as participants' age increased, the proportion spending long periods gaming also increased. The highest proportions were observed during the mid-teen years, plateauing in early adulthood (9 years = 27% 9-years-old; 26% 10-years-old; 52% 12-years-old; 52% 16 years-old; 23% 18-years-old; 10% 23 years-old). These levels differed from the rates seen in the LSAC Baby cohort participants, where from age 5 to 14, between 0% and 5% of participants spent five or more hours gaming; increasing to 15% at age 19. The different patterns observed among LSAC cohorts may reflect the changing prominence of gaming over time.

Long periods of time spent watching long-form videos was reported by young adult participants, but not for children or by adolescents, in the DigiT survey. About a quarter of young adults spent 5 or more hours watching long-form videos on weekdays (23%) and weekends (22%). In contrast, only 5% of adolescents and 6% of children spent this much time watching long form videos on weekdays and weekends. Interestingly, among DigiT participants there was very little overlap in high usage of different digital technologies. That is, only 1% of the sample spent 5 or more hours on more than one technology, suggesting highly independent usage patterns across digital technologies.

The DigiT survey also asked participants to provide information about how much time they spend on their handheld device, either a smartphone or tablet. Screen time data indicated that one in five (19%) young adults spent more than eight hours per day on average on their device. The proportions of adolescents and children who spent more than eight hours per day on their device were somewhat similar at 18% and 17% respectively.

4.3 Digital Technology Content, Behaviours, and Experiences

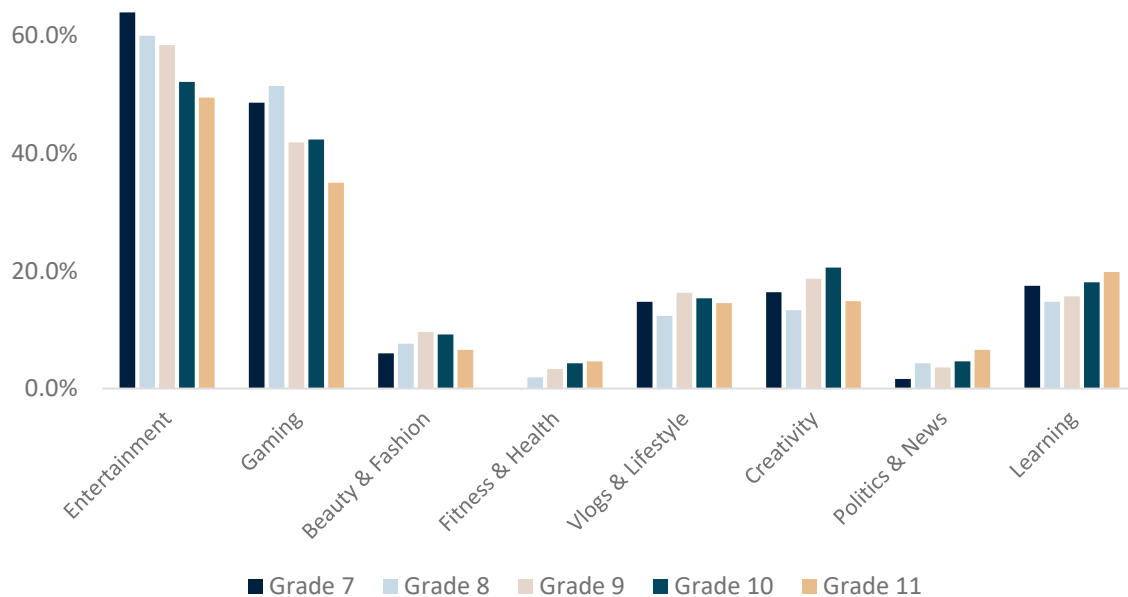
In this section of the report, we explore the type of engagement that characterises children and young people's interactions with digital technology. We present the content children and young people see or are exposed to through digital technology, what they do and how they interact with digital technology, and the purposes or affordances that digital technologies provide for them.

4.3.1 Type of Content and Information Accessed via Digital Technology

4.3.1.1 Video Content on YouTube

In earlier sections of the report (section 4.2.3), our data show that children and young people are regular users of YouTube and spend extensive periods of time-consuming video content. As shown in data from the RAW study, the type of content seen across the YouTube platform varied. RAW participants identified entertainment and gaming as the most common content they engaged with on YouTube (see Figure 4.5). While engagement with this content appeared to decline with age, it remained as more common than content focused, for example, on learning, lifestyle, beauty/fashion, and fitness/health.

Figure 4.5. Types of content that adolescent YouTube users watched across timepoints in the RAW sample



4.3.1.2 Negative Online Experiences

We were also interested in identifying the types of negative content or experiences that young people encounter online. In the LSAC study, exposure to content about ways to be very thin was common for both adolescents (32%; age 14) and young adults (24%; age 18) and exposure to pornography was common for young adults (42%, age 18). Young adults (aged 19 and 23) also commonly reported experiencing seeing unwanted sexual or violent content (21%, 16%, respectively), being contacted by strangers (23%, 20%), and being subject to unwanted online messages (10%, 8%). They also experienced negative interpersonal interactions such as having lies or rumours spread about them (13%, 9%), being left out by others (13%, 9%), being called names by others (10%, 7%), and being ridiculed, insulted, or humiliated because of physical appearance, religion, gender, race, disability, sexual orientation, or political beliefs (6%, 5%). Other less common experiences of a sexual nature included having felt pressure to share sexual or intimate images (3%, 3%), having intimate images or videos posted online without consent

(1%, 2%), or having sexually explicit images or photos posted online (1%, 1%). Further details of negative online experiences are shown in Chapter 3 of the Technical Report.

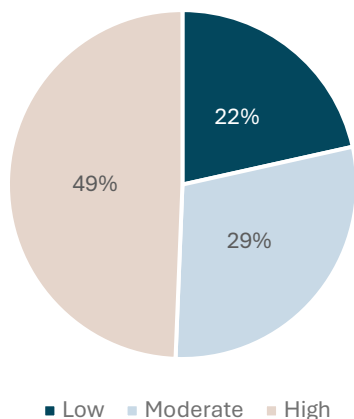
4.3.1.3 Source of Social Media Content

Digital technology users also access content in different ways. We asked participants from the DigiT survey to identify the proportion of social media content they receive from different sources; that is, from people they know and follow, or from recommender systems (i.e., presented by the platform algorithm). We note that content from known or followed people here may also include content received from sources that the child, adolescent, or young adult does not know personally, or interact with directly, but could be someone they have chosen to follow online, such as a celebrity, influencer, sports person, etc.

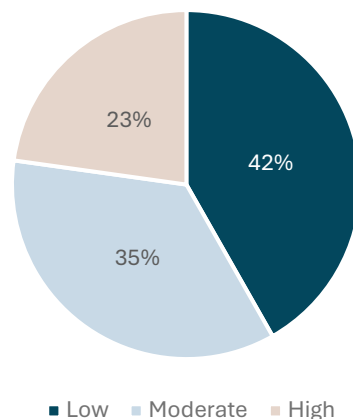
As shown in Figure 4.6a, children tended to see more content from people they know and follow rather than from recommender systems, whereas there was a slight trend in the opposite direction for adults (i.e., somewhat higher proportion of content from recommender systems). The relative pattern for adolescents was neutral, such that they reported seeing a similar proportion of content from people they know or follow and from recommender systems.

Figure 4.6a-b. Frequency with which children and adolescents from the DigiT sample see social media content from people they know and follow and from recommender systems

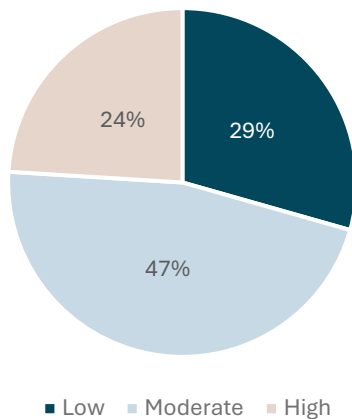
A.1) Children: Followed content



A.2) Children: Recommended content



B.1) Adolescents: Followed content



B.2) Adolescents: Recommended content

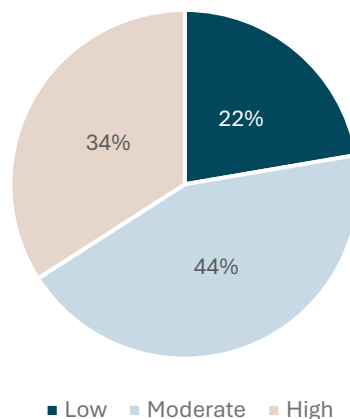
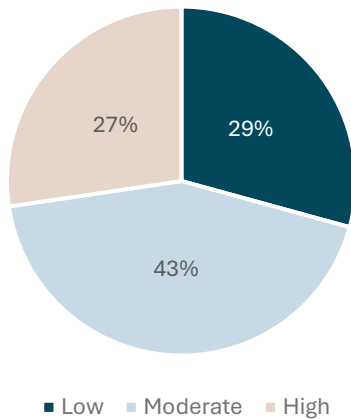
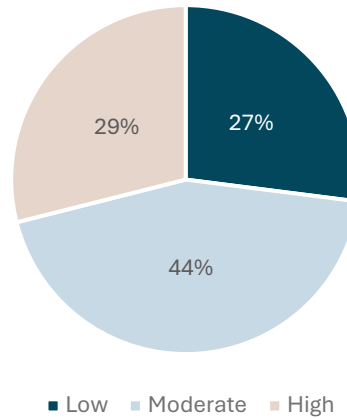


Figure 4.6c. Frequency with which and young adults from the DigiT sample see social media content from people they know and follow and from recommender systems

C.1) Adults: Followed content



C.2) Adults: Recommended content



Note. Low, moderate, and high refer to receiving a low proportion, moderate proportion, and high proportion (respectively) of social media content from the indicated source.

4.3.2 Interactions with Digital Technology

Digital technologies provide varied opportunities for interaction with the technology and with other technology users. We explored different interactions across gaming and social media.

4.3.2.1 Types of Gaming Activities

For gaming, we were interested in the types of games children and young people play, and how and with whom participants engaged in gaming. In the RAW sample, participants reported the extent to which they engaged in gaming with fighting or shooting in them. Exposure to games with fighting or shooting was common at all age points, with approximately 61-81% of RAW participants who engaged in gaming reportedly playing games that contained this type of content.

Participants in the DigiT sample indicated how frequently they played different types of games and in which settings these occurred. As shown in Figures 4.7 to 4.9, few adolescents or young adults reported playing educational games, whereas these types of games were more commonly played by children with parent-report and child interview report showing similar frequencies of use. Across all age groups, gaming via live streaming and chat platforms was uncommon. Similar proportions of participants reported gaming by themselves and with other people, among child-, adolescent-, and young adult cohorts, with gaming with others slightly more common than gaming alone for adolescents.

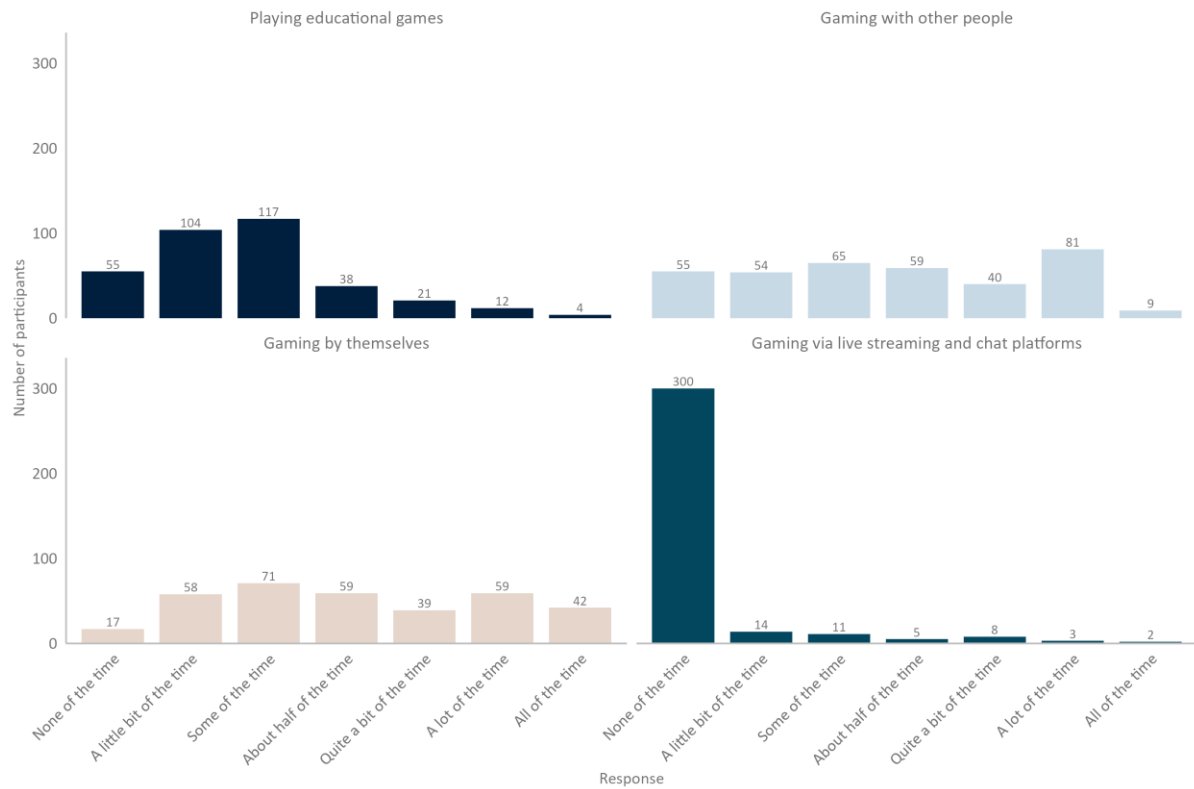
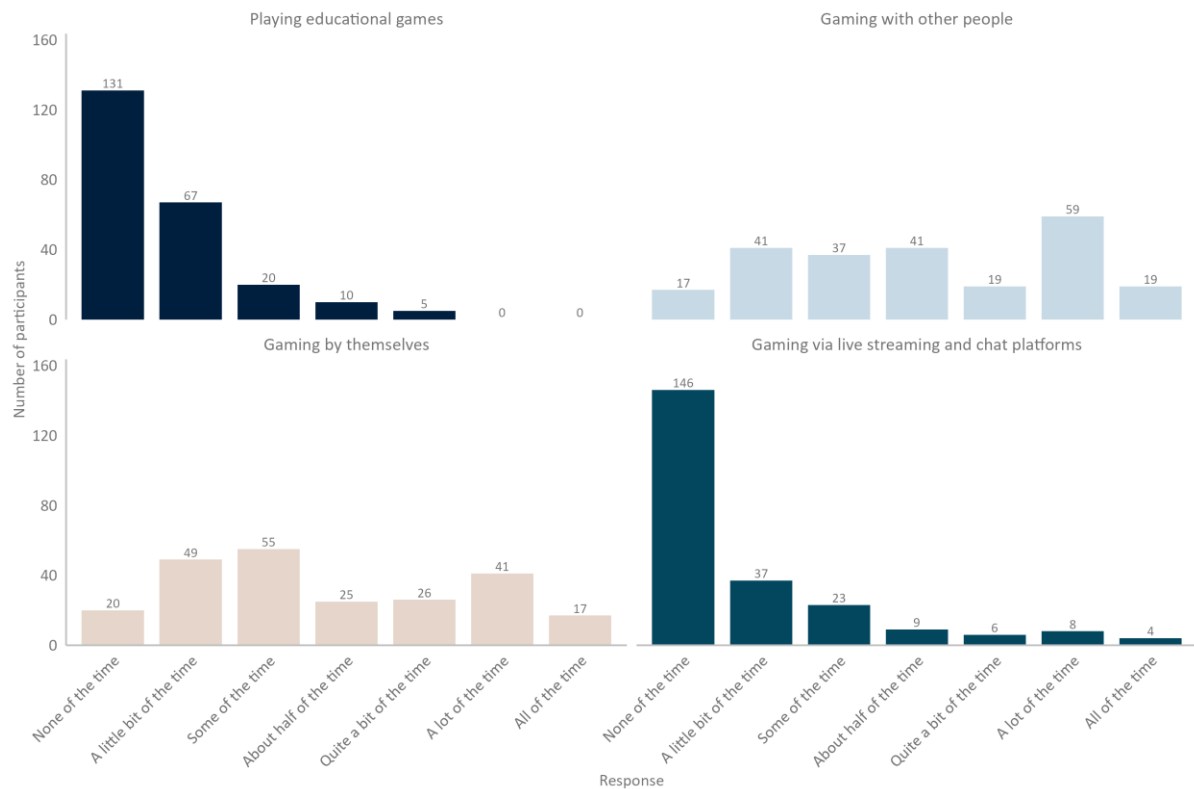
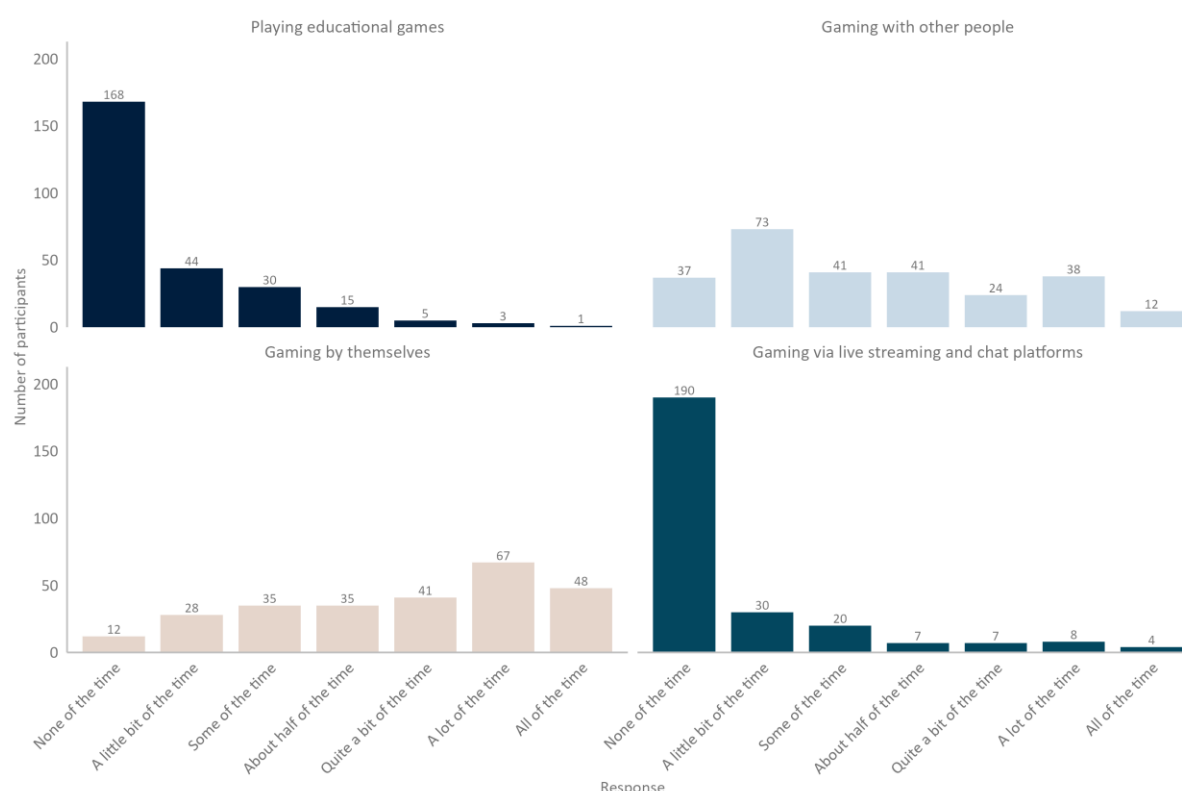
Figure 4.7. Types of gaming activities among children in the DigiT sample**Figure 4.8.** Types of gaming activities among adolescents in the DigiT sample

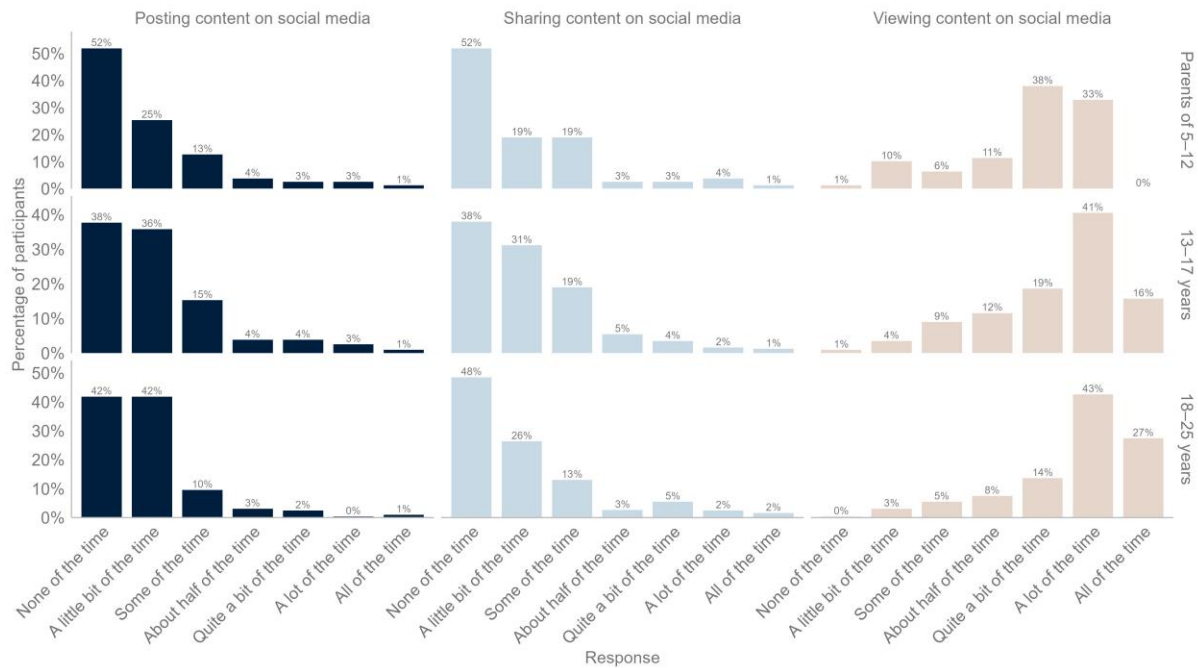
Figure 4.9. Types of gaming activities among young adults in the DigiT sample

4.3.2.2 Social Media Engagement and Interaction

The range of behaviours and interactions that are possible on social media are extensive. We concentrated on understanding public behaviours, such as posting and sharing, and on private behaviours, such as viewing content and directly messaging other users. In the LSAC dataset, participants were asked how frequently they posted or shared content on social media. A moderate proportion (11 – 26%) at ages 14-23 reportedly engaged in these behaviours at least daily, with little change in frequency at different ages. Similarly, in the DigiT sample, posting and sharing occurred at low frequency for children (parent-report [and consistent levels observed from child report in interview]), adolescents, and young adults relative to viewing existing content on social media, as shown in Figure 4.10. For example, among adolescents aged 13-17, a little under three-quarters of respondents indicated that they posted or shared content on social media *none of the time* or *a little bit of the time*. In contrast, a similar proportion (75%) indicated that they viewed existing content on social media *quite a bit*, *a lot*, or *all of the time*.

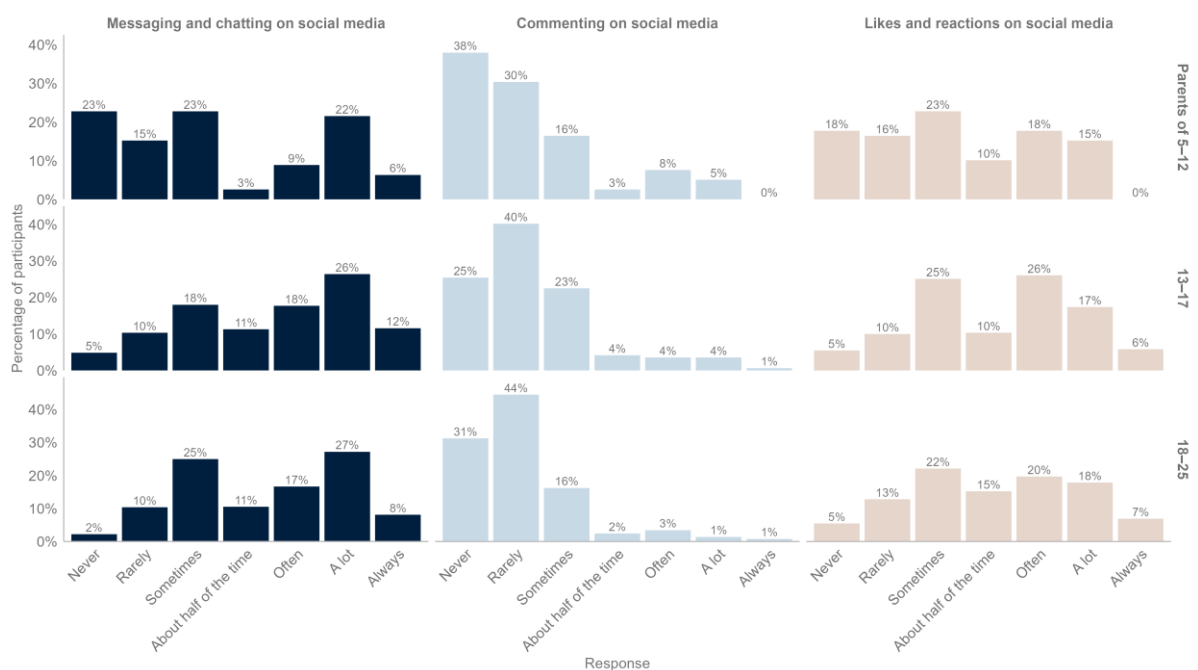
The frequency with which participants in the DigiT sample reported messaging and chatting, commenting, and liking/reacting to social media content was also explored (see Figure 4.11.). For messaging and chatting, a bimodal pattern was observed for all age groups, with peaks around *sometimes* and *a lot*, suggesting participants fall into two general groups; those who message and chat on social media at low or at high frequency. Overall, children tended to engage in messaging and chatting at lower frequency than the older cohorts, a pattern observed in both parent-report (survey) and child report (interview).

Figure 4.10. Reported frequency of posting, sharing, and viewing social media content by age group in the DigiT survey



Across all age groups, we also observed consistency in the frequency of commenting behaviour on social media, whereby this was reported to occur infrequently. There was greater variability within age cohorts in the frequency of use of “likes” and “reactions” on social media. For adolescents and young adults, most use of liking and reacting to content on social media fell between *sometimes* and *a lot*. For children who use social media, a higher proportion *never* “liked” or “reacted” to content on social media.

Figure 4.11. Frequency of messaging/chatting, commenting, and liking/reacting to content on social media by age group in the DigiT survey



These social media usage patterns observed in the LSAC and DigiT datasets suggest that for much of the time that children and young people are spending on social media, they passively view content, engage in low effort responses such as liking or reacting to others' posts, or interact with others via messaging and chat. Contributing content to online spaces via posting or sharing is a relatively infrequent activity for children, adolescents, and young adults.

4.3.2.3 Social Media Photo Activities: Use of Appearance-focused Features

The use of visual-focused social media platforms is very common, particularly among adolescents and young adults (see section 4.2.7), and with the ready availability of handheld devices, such as smartphones with built in cameras, we were interested to explore elements of children and young people's photo posting behaviours. Among participants in the DigiT sample who reported posting photos or videos on social media, we asked how frequently they applied beauty filters – applied to enhance attractiveness, or special effects filters – applied for decoration or fun - prior to posting their content. Of those who post photos or videos to social media, most children (53%, parent-report), adolescents (55%), and young adults (69%) reported not using beauty filters. A slightly lower proportion reported not using special effects filters (39% children, 41% adolescents, 56% adults). Only very few participants reported using either beauty filters (6-10%) or special effects filters (7-19%) more often than not, when posting photos or videos to social media.

4.3.2.4 Social Media Management Behaviours

Adolescent and young adult participants from the LSAC study identified harmful content that they encountered in online spaces, reported above in section 4.3.1.2. Concurrent with this, when aged 18, LSAC participants (Kinder cohort only) were asked to indicate if they engaged in online behaviours that may be perceived as protective. The most commonly reported behaviours used by all participants were “un-tagging” oneself from a post (45%) and deleting posts about oneself (39%). Although these specific actions may be protective, their use may also be motivated by self-presentation interests, that is, removing content perceived to portray oneself unfavourably. Moreover, one in five participants reported having stopped using their social networking account/s (20%) and one in ten having deleted their account/s (13%).

4.3.3 Mechanisms Linking Digital Technology Use and Mental Health

In the initial phase of this project, our consultation process (discussed in Chapter 2 above and in further detail in the Technical Report, Chapter 1) identified a range of potential positive and negative experiences of technology use. These were conceptualised as underlying processes through which digital technology use and positive and negative mental health outcomes may influence one another. We explored experiences of these mechanisms in the DigiT survey which was designed to specifically assess the priority mechanisms established in the consultation process and in the LSAC dataset where online experiences of participants were captured. The full list of positive and negative mechanisms and levels of endorsement by DigiT participants can be found in Chapter 4 of the Technical Report.

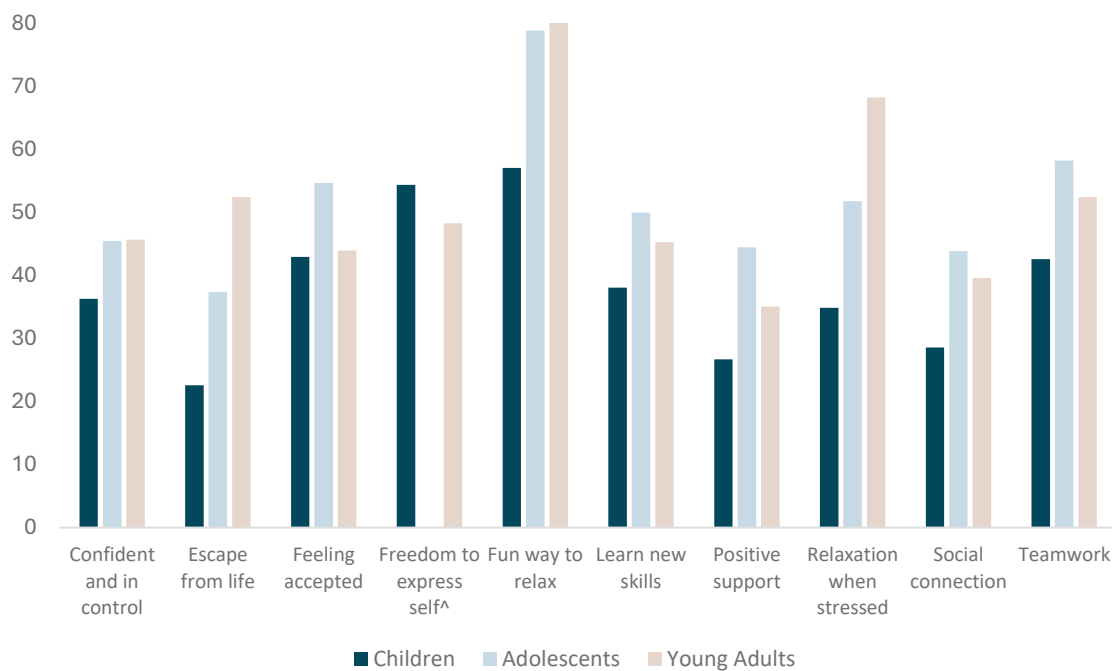
4.3.3.1 Positive Aspects of Engagement with Technology

Gaming

Many mechanisms that were suggested in the consultation period to be linked to positive experiences of gaming (e.g., “Gaming helps my child feel connected with other people”) were endorsed as being “quite” or “very true” for children (through parent-report), and by adolescents, and young adults (self-report). As shown in Figure 4.12, the most strongly endorsed mechanisms related to relaxation; that is, gaming as a fun way to relax, and using gaming to relax when stressed. Gaming was also perceived to be relevant for social connection and personal outcomes, such as feeling confident or expressing oneself.

Clear patterns in levels of endorsement across age groups emerged, with young adults tending to indicate they used gaming for relaxation when stressed or as an escape from life more so than did children or adolescents. Adolescents, rather, tended to more highly endorse mechanisms related to others, such as receiving positive support, feeling accepted, feeling socially connected, and using teamwork when gaming.

Figure 4.12 Percentage of DigiT participants endorsing positive aspects of gaming (mechanisms) as quite or very true for them

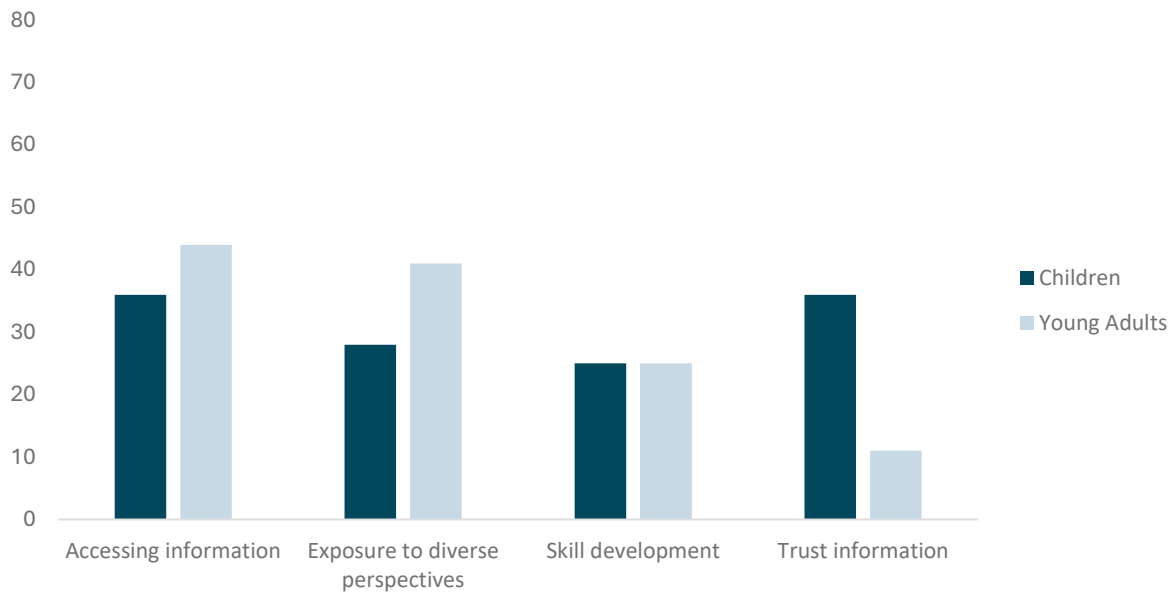


Note. Responses were by parent report for 5-12-year-old children ($n = 335-343$) and self-report for 13-17-year-old adolescents ($n = 211-227$) and 18-25-year-old adults ($n = 265$; sample size depends on responses to specific items) who had indicated they engaged in gaming. Adolescents were not asked about their freedom to express themselves while gaming.

Artificial Intelligence

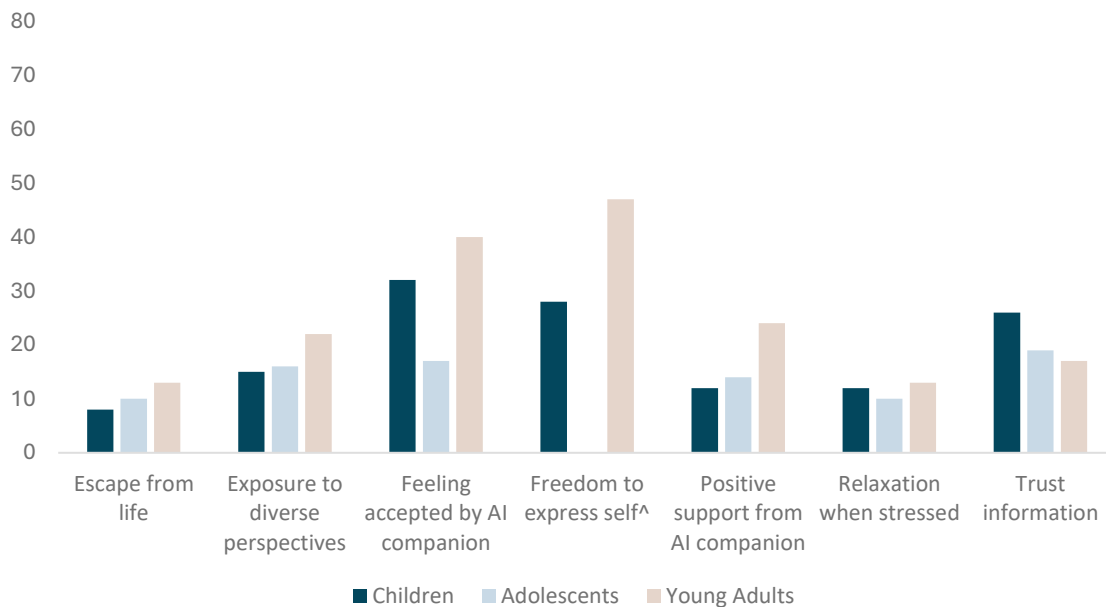
Participants were asked to indicate how true mechanisms linking use of both generative AI and AI companions to positive experiences were for them (e.g., “Using generative AI helps me to develop skills”; “While chatting with AI... I feel accepted for who I am”). Figures 4.13 and 4.14 show

Figure 4.13. Percentage of child and young adult DigiT participants endorsing positive aspects of generative AI (mechanisms) as quite or very true for them



that these mechanisms were endorsed (as being 'quite' or 'very true' for them) by smaller proportions than observed for gaming (above) and social media (below). Although young adults endorsed AI mechanisms more highly than children and adolescents, an exception was observed - young adults were less inclined to trust information from generative AI or an AI companion than the younger groups, suggesting higher digital literacy among the older participants.

Figure 4.14. Percentage of child and young adult DigiT participants endorsing positive aspects of AI companions (mechanisms) as quite or very true for them



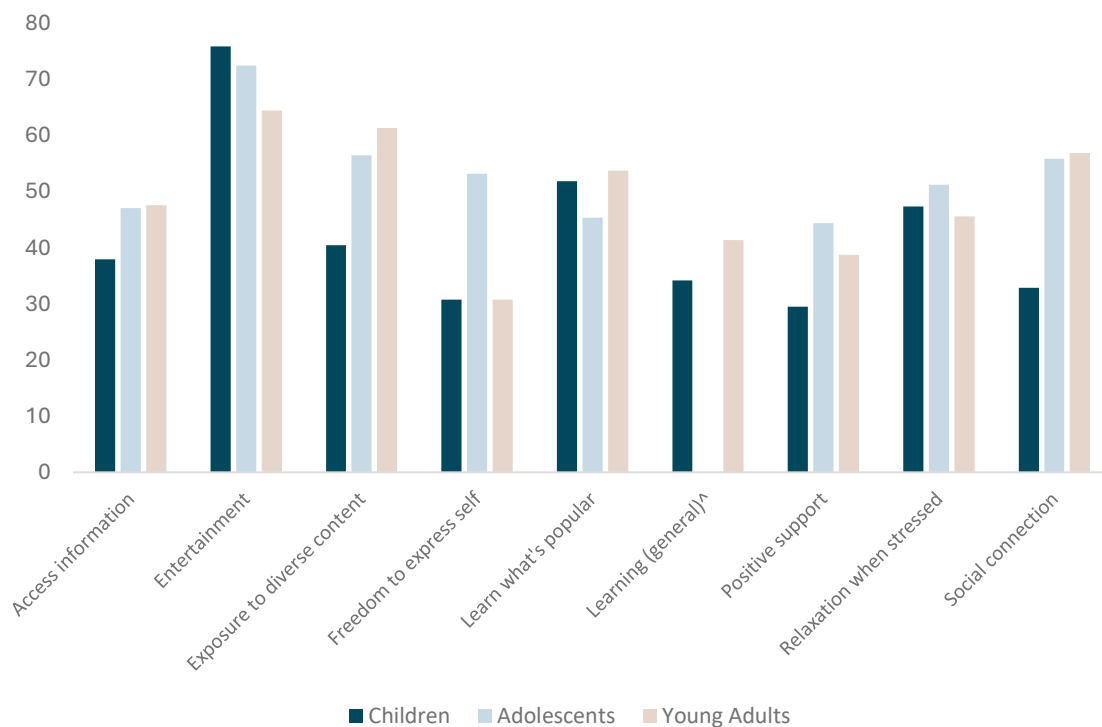
Note. For Tables 4.13 and 4.14, responses were by parent report for 5-12-year-old children ($n = 28-29$ Table 4.13; $n = 23-27$ Table 4.14; sample size depends on responses to specific items) and self-report for 13-17-year-old adolescents ($n = 71-74$ Table 4.13; sample size depends on responses to specific items) and 18-25-year-old adults ($n = 150$ Tables 4.13 and 4.14) who had indicated they used generative AI or AI companions. Adolescents were not asked about generative AI or freedom to express oneself with AI companions.

Social Media

In wave 10 of LSAC data collection, when participants were aged 19 (Baby cohort) and 23 (Kinder cohort) years, data on engagement in various positive social media activities were collected. Participants most strongly endorsed that social media connects them to peers with similar experiences (38% Baby cohort; 35% Kinder cohort) and that they use social media to share interests and hobbies with others (31% Baby cohort; 28% Kinder cohort). Around one in five participants indicated that social media provided them with relief from feeling stressed, worried and/or down (20% Baby cohort; 21% Kinder cohort), and made them feel less alone in those experiences (20% Baby cohort; 19% Kinder cohort). A low proportion of participants used social media to access mental health information or support services (5% Baby cohort; 7% Kinder cohort).

Similar positive experiences, conceptualised as potential mechanisms linking social media use and mental health outcomes (e.g., “When using social media I have come across diverse content – like different ideas, people, or experiences), were recognised among DigiT survey participants. These are described here as the proportion of participants who endorsed the particular aspect of social media as being ‘quite’ or ‘very true’ for them. As shown in Figure 4.15, the most highly endorsed positive experience of social media across all age cohorts was finding social media entertaining. Using social media for social connection, access to information, and learning were also strongly endorsed.

Figure 4.15. Percentage of DigiT participants endorsing positive aspects of social media (mechanisms) as quite or very true for them



Note. Responses were by parent report for 5-12-year-old children ($n = 77-79$, depending on specific items), and self-report for 13-17-year-old adolescents ($n = 306$) and 18-25-year-old adults ($n = 484$) who had indicated they were social media users. ^Adolescents were not asked about their use of social media for general learning.

Although social media was recognised as providing a positive support network, particularly by adolescents and young adults, it was reportedly used to a lesser extent for access to support for mental health or wellbeing among DigiT participants (16.5% children; 22.6% adolescents; 21.5% young adults quite/very true³), perhaps reflecting a lower need for such support among a general population sample. In general, positive aspects of social media use were less strongly endorsed by parent-report for children, than by adolescents and young adults who self-reported on these aspects of social media use.

4.3.3.2 *Negative Aspects of Engagement with Technologies*

Gaming

Few survey items considered as mechanisms linking gaming and mental health as negative experiences (e.g., “I find it hard to take a break from gaming”) were endorsed highly (i.e., ‘quite’ or ‘very true’ for me) by DigiT survey respondents. The most strongly endorsed negative mechanism for all groups was gaming being a distraction from other tasks (29% children, 29% adolescents, 36% young adults) and seeing people attack others when gaming was also endorsed by adolescents (26%) and young adults (34%), but less so for children (8%). About a quarter of (parents of) children (26%) and of adolescents themselves (24%) endorsed finding it difficult to take breaks from gaming which were higher levels of endorsement than reported by young adults (12%).

Potentially highly negative experiences regarding bullying and sleep disruption were reported across all age groups at non-negligible levels. The percentage of DigiT participants reporting any such experiences (i.e., a little/somewhat/quite/very true) ranged from 22-40% for experiencing bullying while gaming, and 34-62% for gaming disrupting sleep.

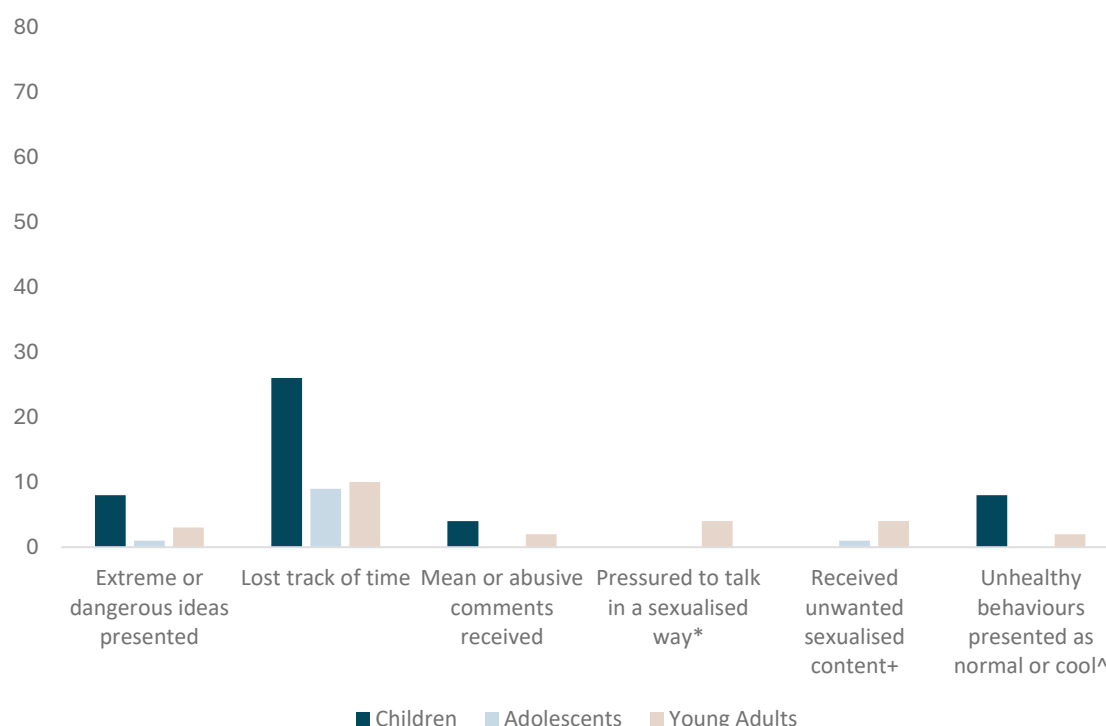
Artificial Intelligence

Similar to responses for gaming, few mechanisms linking use of AI companions to negative experiences were endorsed strongly by children, adolescents, or young adults in the DigiT survey. The only mechanism to be endorsed by 10% or more of participants was loss of time when using an AI companion, which was more highly endorsed by parent-report for children’s experiences than by adolescents and young adults.

Although only few participants endorsed as quite or very true experiences that may be considered harmful when engaging with an AI companion, as shown in Figure 4.16, any experience of these potentially highly negative aspects of engagement with an AI companion were reported at non-negligible levels. For example, the percentage of DigiT participants reporting any such experiences (i.e., a little/somewhat/quite/very true) ranged from 8-13% for experiencing abuse from an AI companion, 18-21% for receiving dangerous ideas, and 4-19% for receiving unwanted sexual content from an AI companion. Note that negative mechanisms for generative AI were not assessed.

³ However, we note that there was a considerably higher proportion of participants who indicated that using social media to support mental health or wellbeing was at least a little true for them (i.e., a little/somewhat/quite/very true); 44% children; 78% adolescents; 77% young adults

Figure 4.16. Percentage of DigiT participants endorsing negative aspects of AI companion use (mechanisms) as quite or very true for them



Note. Responses were by parent report for 5-12-year-old children ($n = 23-27$; sample size depends on responses to specific items) and self-report for 13-17-year-old adolescents ($n = 71-71$; sample size depends on responses to specific items) and 18-25-year-old adults ($n = 150$) who had indicated they used AI companions. *The proportion of children who had received unwanted sexual content from an AI companion and adolescents who had received mean or abusive content was 0%. *Children and adolescents were not asked if they had felt pressured to talk in a sexualised way with AI companions and ^adolescents were not asked if they had come across unhealthy behaviours presented as normal or cool.

Social Media

As shown in Table 4.2, LSAC participants reported on aspects of engagement with social media that may be perceived as negative. Approximately one in six (16-19%) participants reported spending a lot of time thinking about social media or planning to use it and reported using social media to forget their personal problems. One in ten (9-11%) reported unsuccessfully attempting to quit using social media, and a similar proportion (8-15%) of the sample reported that their social media use was negatively impacting their work and study. These negative experiences were consistent across cohorts and time points and suggest that a moderate proportion of older adolescents and young adults recognise that social media has negative impacts on them, necessitating attempted breaks from social media. It was found, however, that these negative experiences were more common for female-born participants than male-born participants, suggesting potential greater risk by sex at birth.

Table 4.2. Proportion of LSAC cohorts who engage in negative social media activities ‘often’ or ‘very often’.

Item	LSAC Baby cohort			LSAC Kinder cohort		
	Age 16	Age 17	Age 19	Age 20	Age 21	Age 23
1. I spend a lot of time thinking about social media or planning to use it	19%	19%	16%	16%	18%	17%
2. I feel I need to continually use more social media	12%	13%	11%	12%	13%	13%
3. I use social media to forget my personal problems ^a	17%	17%	14%	14%	15%	15%
4. I have tried to stop using social media without succeeding	9%	9%	9%	11%	9%	9%
5. I become anxious or agitated if I am prohibited from using social media.	9%	8%	5%	7%	8%	4%
6. I use social media so much that my use has a negative impact on my work/study	13%	15%	9%	12%	11%	8%

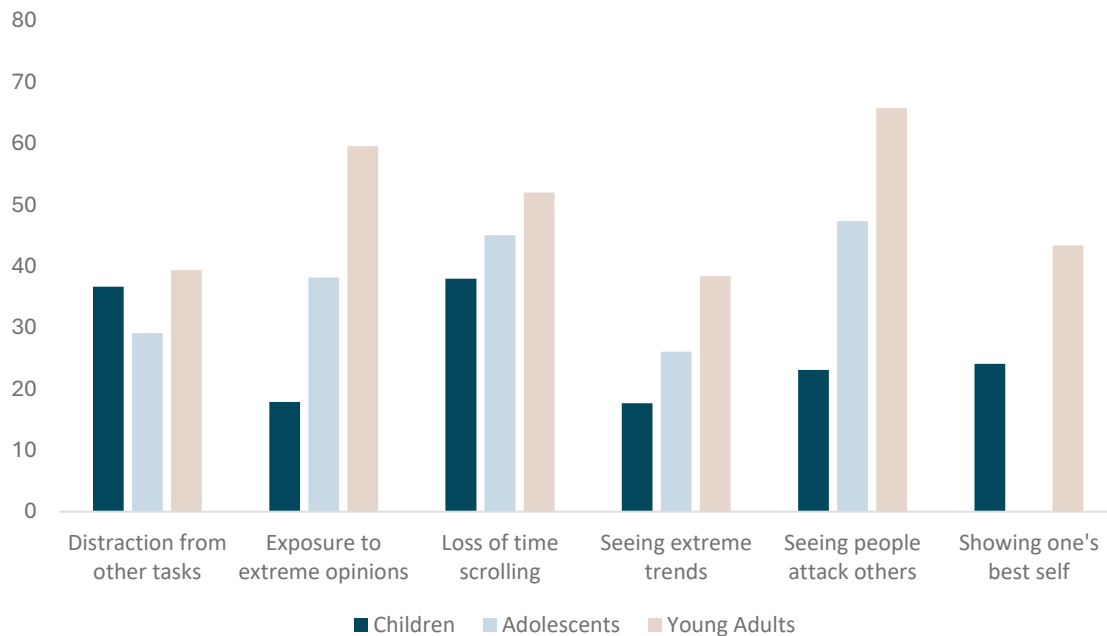
Note. ^aAlthough intended in data collection for LSAC to reflect a negative experience of social media, this item may also be interpreted as social media providing a positive environment in which one may get respite from their problems.

Consistent with the possible intrusion of social media identified by LSAC participants, DigiT survey participants also endorsed that social media could be a distraction from other tasks and that scrolling social media contributed to loss of time (see Figure 4.17 for percentage of participants that endorsed negative social media mechanisms as ‘quite’ or ‘very true’ for them). Other negative aspects of social media that were endorsed by participants were related to negative content and actions that children, adolescents, and young people were exposed to on social media, as shown in Figure 4.17. Clear distinctions between levels of endorsement of negative aspects by children (parent-report) and adolescents and adults were observed. This was particularly the case for negative experiences related to external content or actions by others such as seeing extreme opinions, trends, or others being attacked. This pattern may reflect to a certain extent that children receive more of their social media content from people they know or follow than from the recommender systems, relative to adolescents and adults (see section 4.3.1.3 above) and/or that children, adolescents, and adults show variability in the platforms they use.

Lower endorsement of potentially highly negative aspects of social media as quite or very true by participants was observed. These included experiencing bullying (5–8%; quite/very true), feeling left out (7–9% quite/very true), receiving unwanted sexual content on social media (4–8% quite/very true), and feeling pressure to present oneself in a sexualised way (3% young adults quite/very true [children and adolescents were not asked about this]). However, we identified that potentially highly negative experiences were reported across as being at least a little true for participants at age groups and at non-negligible levels. For example, the percentage of DigiT participants reporting any such experiences (i.e., a little/somewhat/quite/very true) ranged from

30-34% for bullying on social media, 52-75% for social media interfering with sleep, 24% for pressure to present oneself in a sexualised way (young adults only), and 24-42% for receiving unwanted sexual content on social media. Details of the full range of negative experiences are provided in Chapter 4 of the Technical Report.

Figure 4.17. *Percentage of DigiT participants endorsing negative aspects of social media (mechanisms) as quite or very true for them*



Note. Responses were by parent report for 5-12-year-old children ($n = 77-79$, depending on specific items), and self-report for 13-17-year-old adolescents ($n = 306$) and 18-25-year-old adults ($n = 484$) who had indicated they were social media users. Adolescents were not asked about their use of social media to show their best self.

4.4 Chapter Summary

Overall, the findings from this chapter suggest that digital technology use is widespread across childhood, adolescence, and young adulthood, but that patterns of engagement vary considerably according to age, technology type, and the nature of use. Children were more likely to engage with tablets, gaming, YouTube, educational content, and communication with known others, whereas adolescents and young adults increasingly used smartphones, social media, messaging platforms, internet forums, AI tools, and were exposed to algorithmically recommended content. Across technologies, children and young people's engagement was largely passive, with viewing, liking/reacting, and messaging being substantially more common than actively posting, commenting, or creating content.

Across social media, gaming, and AI, positive experiences were widely endorsed and were often rated as quite or very true by children and young people, including experiences relating to entertainment, relaxation, and social connection. Although most children and young people endorsed using digital technologies for learning to some extent, it is unlikely to represent the primary purpose of use for most participants. Social media, in particular, was frequently valued for connection, entertainment, and exposure to diverse ideas, while gaming was commonly associated with relaxation, stress relief, and teamwork.

Negative experiences were also reported across technologies, but these were generally endorsed to some extent rather than being highly endorsed. Adolescents and young adults, more than children, were exposed to harmful or distressing content and negative interpersonal experiences online, including hostile interactions among others, extreme opinions, or appearance-focused content. Some young people also reported finding it difficult to take a break from social media, video games, and AI tools, and endorsed these technologies as distracting them from other tasks. Experiences commonly viewed as key online harms, such as bullying or receiving unwanted sexual content, were reported by a minority of participants and were only rarely described as occurring frequently or being highly characteristic of children and young people's experiences. Similarly, fewer than a quarter of children, adolescents, and young adults reported spending very long periods of time on digital technologies. Nevertheless, this excessive use and these harmful experiences may indicate a group of children and young people particularly in need of support, either in relation to their mental health, as will be explored in the next chapter, or in relation to offline experiences and activities potentially displaced by extensive engagement.

Overall, the findings point to a nuanced picture in which digital technologies provide important opportunities for entertainment, connection, learning, and support, while also exposing some young people to risks and negative experiences. Importantly, the balance of risks and benefits appears to differ according to age, technology type, and patterns of engagement. These findings provide important context for understanding the relationships between digital technology use and mental health, which are explored in the following chapter.

5. Digital Technology Use and Mental Health

CHAPTER 5

KEY POINTS

Digital technology and mental health

- 01 Relationships appear bidirectional**
Digital technology use and mental health are bidirectionally related, with inconsistent longitudinal patterns and variability — some users experience positive, negative, or no change over time. Mental health symptoms more consistently predicted later technology use than the reverse.
- 02 Activities matter more than screen time**
Overall screen time shows little association with mental health, whereas specific platforms and activities show stronger links. Higher social media use most consistently predicts increased depressive or distress symptoms, and among adolescents, appearance-focused behaviours (e.g., beauty filters) are linked to poorer outcomes.
- 03 Effects vary by individual vulnerability**
The impact of digital technology varies by subgroup potential vulnerability factors - gender and sexual identity, neurodivergence, and experiences of bullying. For marginalised groups (e.g., LGBTQA+ and neurodivergent young people), activities such as private messaging can provide identity affirmation and social support.
- 04 Digital technology experiences may also impact mental health**
Mental health is more closely related to experiences of technology use than to screen time alone. Negative mechanisms (e.g., feeling left out, escapism, distraction) and experiences (e.g., harmful content) are consistently linked to poorer mental health, while positive mechanisms (e.g., identity acceptance, social connection) are linked to better mental health. The combination of these experiences may also cancel out (in the case of positive and negative experiences) or amplify mental health impacts.

5.1 Chapter Overview and Purpose

This chapter addresses the second aim of this project by examining the relationship between digital technology use and mental health. The chapter presents data from the three pre-existing longitudinal datasets of Australian children and adolescents (the *Risk to Adolescent Wellbeing Study* [RAW], the *Child to Adolescent Transition Study* [CATS], and the *Longitudinal Study of Australian Children* [LSAC]) to interrogate prospective evidence for the relationship between digital technology and mental health. Complementing this, a synthesis of findings from Australian and international empirical literature examining prospective relationships between digital technology use and mental health is presented. This chapter also presents results from the DigiT survey on cross-sectional relationships between different types of digital technology use, experiences, and mental health in a contemporary and nationally representative sample of Australian children and young people.

Collectively, the Australian longitudinal studies measured a variety of aspects of mental health (anxiety, body dissatisfaction, depression, eating disorders, suicidal ideation, self-harm, and wellbeing) and digital technology use (computers, gaming, social media, messaging/chat, internet forums, artificial intelligence, and TV use, plus measures of experiences while on social media, gaming, and artificial intelligence), enabling rich exploration of the ways in which digital technology and mental health may be causally or concurrently related. Each of these studies included additional variables with which to assess for potential for greater or lesser vulnerability to the effects of digital technology on mental health. Specifically, RAW provided data to assess the extent to which the types of digital platform matter, LSAC included a number of social, behavioural, and emotional wellbeing variables (peer relationship difficulties, social skills, conduct problems, hyperactivity, and emotional problems) that may influence engagement with digital technology, and CATS included measures of gender- and sexual- identity, history of discrimination, and peer victimisation that may also serve as vulnerability factors for engagement with and harms from digital technology use.

The papers included in the synthesis of findings from published studies examined three technology types; social media use, gaming, and messaging/chat. The literature contained all mental health indicators within scope for the project, with the highest concentration for depressed mood, and to a lesser extent anxiety and wellbeing (including self-esteem). Less common mental health indicators were disordered eating, body image, and self-harm or suicide. Effects are examined across age groups of children (5-12-years), adolescents (13-17-years), and young adults (18-25 years).

The DigiT survey further extends this work by enabling examination of cross-sectional associations between digital technology use and mental health across age groups (5-12-year-old children, 13-17-year-old adolescents, and 18-25-year-old adults), between genders, and among key groups with potentially heightened vulnerability (i.e., LGBTQA+ and neurodivergent young people). Moreover, the DigiT survey findings enabled the examination of contemporary technologies, activities, behaviours, and mental health indicators that were not available in the longitudinal datasets. The DigiT survey also enabled a more detailed examination of the mechanisms that may underlie associations between digital technology use and mental health. These include the positive and negative experiences, personal processes, and social interactions

that occur while using different technologies. Examining these mechanisms provides greater insight into how different types of digital technology engagement may be related to mental health at a specific point in time, including experiences that may confer risk or protection.

In this chapter, we detail some broad trends and insights across the studies. Full detailing of findings from each dataset can be found in Chapters 3, 4, and 5 of the Technical Report.

Here, we examine:

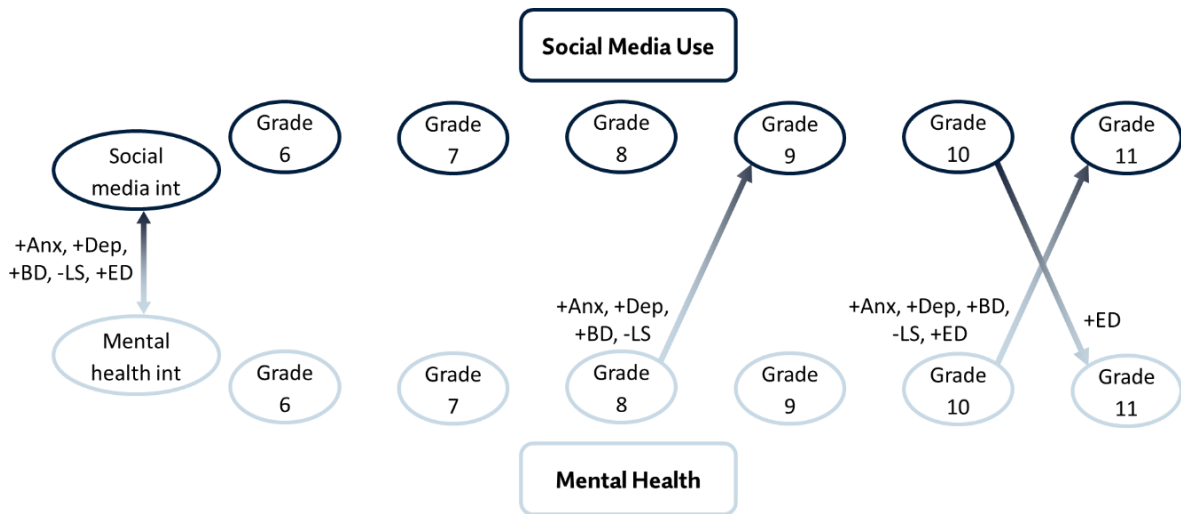
- Bidirectionality in the relationship between digital technology use and mental health, that is:
 - Digital technology use predicting future mental health outcomes, and
 - Mental health symptoms predicting future use of digital technology.
- Vulnerability factors, whereby engagement with digital technology and the relationship between digital technology use and mental health may be stronger or weaker as a function of type of digital platform, and characteristics of the individual (e.g., age, sex, gender identity, sexual-identity, and history of discrimination and peer victimisation).
- Cross-sectional relationships between mental health and several indicators of contemporary digital technology engagement - digital technology use, content, interactions, and behaviours on digital technology, and underlying positive and negative experiences of use (i.e., mechanisms) - in a nationally representative sample of Australian children and young people.

5.2 Prospective Relationships Between Digital Technology Use and Mental Health

Across the three longitudinal datasets, CATS, RAW, and LSAC, only a few of the tested prospective effects linking earlier digital technology use and later mental health, or vice versa, were statistically significant; 57% for CATS, 36% for LSAC, and 12% for RAW. This pattern was repeated in the synthesis of findings from the review of empirical literature, whereby only 35% of effects (in either direction) were statistically significant. The evidence generally suggested a stronger and more consistent effect of mental health predicting increased digital technology use than digital technology use predicting changes in mental health symptom severity.

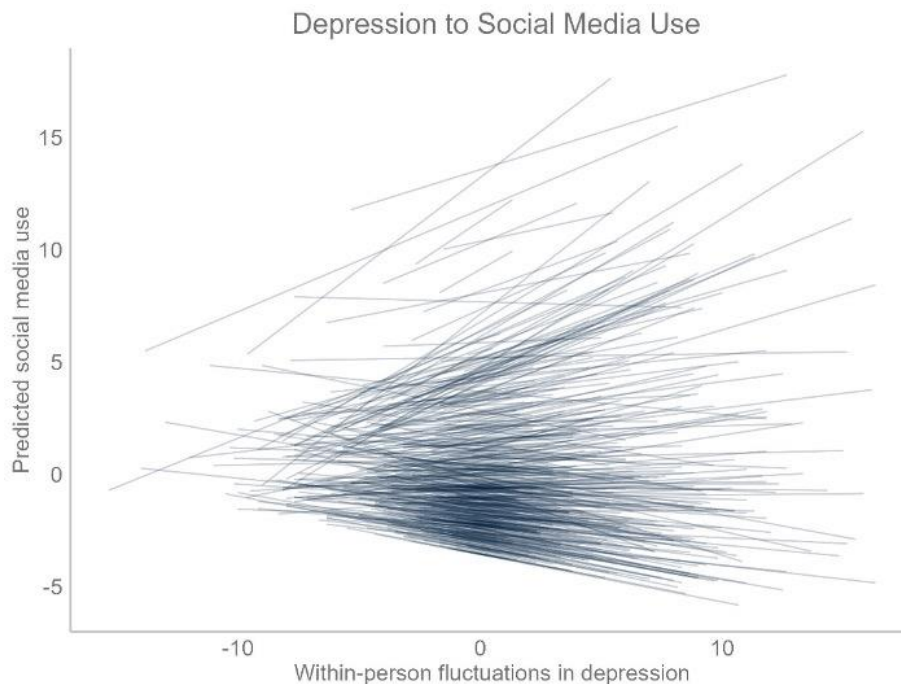
Figure 5.1, which shows a schematic of bidirectional relationships from the RAW dataset, provides a good example of this pattern of effects; showing that for the sample overall: 1) there were more instances of non-significant effects (i.e., absence of connecting lines) than significant effects (i.e., illustrated by the presence of connecting lines); and 2) that more effects tended to flow from mental health (represented at each data wave by the lower portion of the figure) to digital technology use (represented at each data wave by the upper portion of the figure) than flowed from digital technology use to mental health.

Figure 5.1. A visual representation of the relationship between social media use and each mental health outcome in RAW data



Critically, although the patterns of associations between digital technology use and mental health were inconsistent or weak across the three separate datasets, further probing highlighted considerable differences across individuals within these samples in terms of these associations. As shown in Figure 5.2, which illustrates variability across individuals, the RAW dataset found that for some individuals, greater use of social media was associated with positive

Figure 5.2. A visual representation of variability in relationships between digital technology use and mental health



Note. The x-axis represents within-adolescent deviations in scores (person-mean centred). A value of 0 indicates an adolescent's average level, positive values indicate higher-than-usual scores, and negative values indicate lower-than-usual scores. The y-axis shows model-predicted scores. Because predictions are derived from a linear mixed model, some values fall below 0 and can be interpreted as very low predicted levels. Each line represents the predicted relationship for a given adolescent.

changes in mental health (illustrated by downward slopes [from left to right] of lines on Figure 5.2), for others, greater use of social media was associated with negative changes in mental health (upward slopes [from left to right]), and others still showed limited change in mental health at all (flat, horizontal lines). This variability in change in mental health over time is likely attributable to a range of factors, including the sorts of digital technologies individuals engage with, the types of behaviours they exhibit and experiences they encounter on these platforms, and individual factors that may increase or decrease vulnerability to negative mental health effects from digital technology use.

This chapter explores these predictors of variability, separating out: 1) direction of effect (mental health predicting digital technology use vs digital technology use predicting mental health); 2) platform-specific effects (social media, gaming, TV use, and computer use); and 3) personal vulnerability factors including emotional, behavioural, and social development difficulties, sex and age-related differences, and differences that may be tied to belonging to marginalised groups (e.g., due to gender diverse identity, history of bullying and peer victimisation). The specific patterns of relationships across the datasets are outlined below.

5.2.1 Digital Technology Use Predicting Mental Health

5.2.1.1 Social Media

Social media use as predictive of later mental health was examined in the full RAW, CATS, and LSAC datasets, and in a subsample of disadvantaged participants in the CATS dataset, as well as across existing published literature. The outcomes for disadvantaged groups are presented separately to distinguish effects (see 5.2.1.1.1).

In the RAW sample, higher⁴ social media use at age 16 predicted very small increases in eating disorder symptoms at age 17. Social media use did not predict any changes in depression, anxiety, body dissatisfaction, or life satisfaction at any timepoints. In the CATS dataset, across adolescence, higher daily time spent on social media (i.e., > 2 hours versus < 1 hour) was associated with a small increased risk of high depressive symptoms and poor wellbeing at the subsequent annual assessment wave (risk difference of 5 to 6 per 100 people), with larger effects in females than males. Risk differences for anxiety and self-harm were negligible across adolescence. For females, estimated risks for all mental health problems were larger in early adolescence (12 to 13 years) compared to later ages, but no such differences were apparent across age for males. In the LSAC dataset, higher social media use at age 16 (Baby cohort) and at age 20 (Kinder cohort) predicted higher distress at ages 17 and 21, respectively. Social media use did not predict any other mental health or wellbeing outcomes in the LSAC sample. We note that assessment of social media was not introduced into the LSAC protocol until wave 7 for the Kinder cohort when participants were aged 16 and wave 8 for the Baby cohort with participants aged 14. Thus, we did not have capacity to examine relationships at earlier ages.

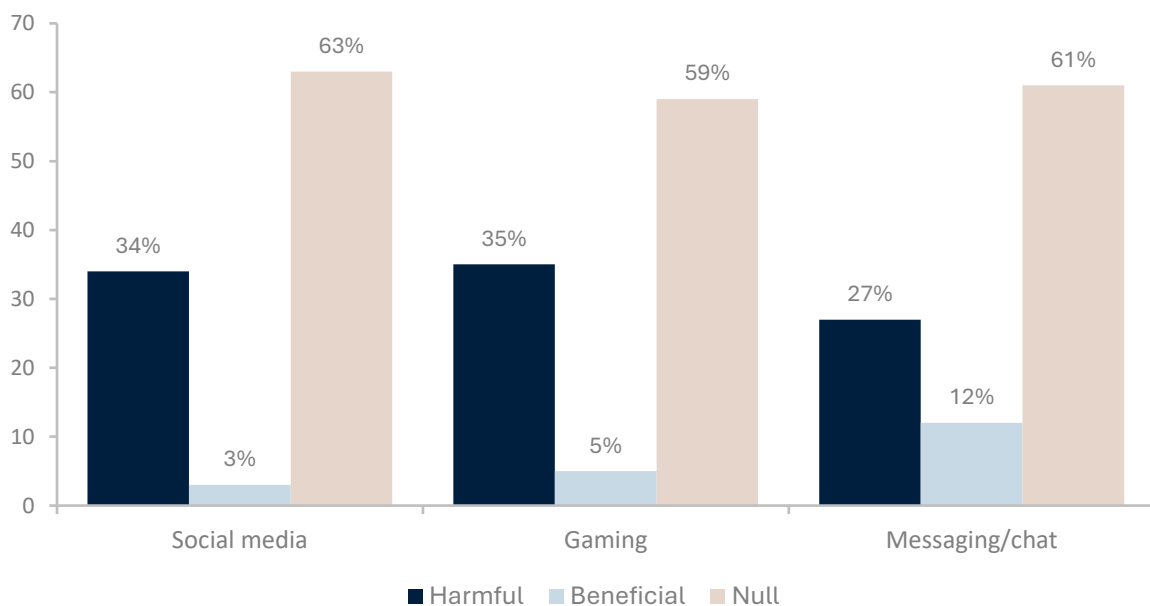
⁴ Longitudinal analyses in the RAW dataset focused on within-person effects to examine if fluctuations in digital technology use (i.e., higher- or lower-than-usual use for an individual) and in mental health (worse-than-usual or better-than-usual mental health for an individual) predict change in the corresponding outcome (mental health and digital technology use, respectively) over time. For example, where we state “higher social media” use here, we are referring to higher-than-usual use at an individual level.

The RAW dataset also enabled investigation of effects of specific types of social media engagement on subsequent mental health. Some similarities to effects for overall social media use were observed. In this regard, higher Instagram use at age 14 was associated with increased anxiety and depression at age 15. Similarly, higher Snapchat use at ages 11 and 14 was associated with subsequently increased body dissatisfaction in the subsequent year. Additionally, higher Snapchat use at age 14 was associated with subsequently increased depression on year later.

We note that other indicators of social media engagement, such as negative experiences of social media were not significantly associated with change in mental health or wellbeing over time in LSAC, with one exception: the number of negative experiences online (as opposed to whether someone experienced any negative experiences online) was predictive of subsequent risk of mental ill-health for both Baby and Kinder cohorts. For every additional type of negative experience, the risk of having a diagnosable level of mental health symptoms at a subsequent timepoint increased by 1.5-2 times, suggesting that the breadth of negative experiences may have a particularly adverse effect on mental health.

Findings from the synthesis of effects from existing empirical literature were relatively consistent with the patterns observed from Australian longitudinal datasets. From 123 included studies, social media use was found to predict subsequent poor mental health in 34% of effects (see Figure 5.3). Only a very small proportion of effects (3%) were observed whereby social media use predicted better mental health at a later timepoint. Overall, the most common outcome from analyses was that social media use did not predict change in mental health over time. The pattern of effects was very similar for children, adolescents, and young adults, differing by one or two percentage points across directions of outcomes.

Figure 5.3 *Proportion of directional and null effects from social media use, gaming, and messaging/chat to mental health outcomes from existing empirical literature*



Note. $n = 123$ studies for social media; $n = 63$ studies for gaming; $n = 11$ studies for messaging/chat. Harmful refers to digital technology use predicting poorer mental health; beneficial refers to digital technology use predicting better mental health; null refers to digital technology use predicting no change in mental health

Where a sufficient number of papers permitted ($n \geq 10$), additional analyses of the existing empirical literature examined associations between social media use and later mental health for individual mental health indicators. For social media use, this was possible for depression, anxiety, wellbeing, and body dissatisfaction/disordered eating. Patterns of findings were relatively similar across different mental health indicators, with prospective associations from social media use to the mental health outcome observed in a slightly higher proportion of effects for depression (35%), followed by body dissatisfaction/disordered eating (31%) and wellbeing (30%), and with the lowest proportion observed for studies examining anxiety outcomes (29%). Further details of analyses of existing literature can be found in the Technical Report, Chapter 2.

5.2.1.1.1 Participants with potential vulnerability

In the CATS dataset, we explored the effects of earlier social media use on later mental health outcomes among potentially disadvantaged groups of adolescents: those identifying as gender or sexually diverse, those who had experienced discrimination (based on language/accent, skin colour, and/or ethnicity/culture), and those who had experienced frequent bullying. These groups are identified as potentially vulnerable or more responsive to the positive and negative effects of digital technologies due to probable distinct experiences with these technologies, arising from contextual factors that shape their needs or responses to digital technology use, rather than inherent characteristics. Complete details of these analyses, including specific comparisons of different levels of social media use, can be found in the Technical Report, Chapter 3.

Among gender/sexually diverse adolescents, higher vs. lower social media use was associated with greater risk for depressive symptoms and self-harm. The increased risk for self-harm was not observed among non-gender/sexually diverse adolescents and the risk for increased depressive symptoms among non-diverse adolescents was less pronounced than for gender/sexually diverse adolescents. Similarly, those exposed to discrimination also showed increased risk for high depressive symptoms and self-harm, with less pronounced risk among the non-discriminated group.

Risk for high anxiety symptoms or poor well-being was not predicted by use of social media among the gender/sexually diverse or discriminated groups. In contrast, among frequently bullied adolescents, there was a pattern of reduced risk for anxiety and poor wellbeing at higher compared with lower levels of social media use. Similarly, reduced self-harm was observed among bullied adolescents who were high social media users. These patterns were not observed among non-bullied adolescents.

Considering findings across all datasets, a mixed pattern for the effect of social media use on mental health indicators emerged. Social media use, including on specific platforms, was most commonly associated with increased risk for depressive or distress symptoms, with these effects observed in each of the RAW, CATS, and LSAC datasets (and of note, depression/ distress was the only mental health indicator assessed in all datasets). Inconsistent effects were revealed for positive mental health, assessed as life satisfaction in RAW, quality of life in LSAC, and wellbeing in CATS. The majority of findings indicated no relationship over time from social

media use to positive mental health outcomes. However, one disparate finding emerged whereby among bullied adolescents, higher social media use was associated with later reduced risk of poor wellbeing (CATS data). Taken together, where significant associations over time from social media use to mental health were observed, these tended to show that higher use was associated with poorer outcomes.

5.2.1.2 Gaming

Gaming and its relationship over time with mental health was examined in the RAW and LSAC datasets. Mixed findings were observed among RAW participants at different timepoints. For instance, higher use of gaming at 14 years of age was found to predict improvements in anxiety and body dissatisfaction at 15 years of age. In contrast, higher gaming at 16 years of age predicted worsening body dissatisfaction and depression one year later.

In the LSAC dataset, gaming predicted mental health outcomes at one timepoint only. At wave 6, when Baby cohort participants were 10 years old, higher engagement in gaming predicted lower quality of life two years later, at age 12.

Synthesis of effects from existing empirical literature regarding gaming use ($n = 63$ studies) were consistent with the mixed findings from the Australian longitudinal datasets. Specifically, 35% of effects demonstrated that gaming use predicted subsequent poorer mental health; these were relatively consistent across age groups (ranging from 36–40% among child, adolescent, and young adult samples). Only for a low proportion of effects (5%) was gaming associated with later better mental health. The most common outcome (59%) was that gaming use did not predict later mental health see (see Figure 5.3).

Additional interrogation of these papers examined associations between gaming and later mental health separately for depression and anxiety outcomes. Gaming use was predominantly associated with no change in depression (58%), with effects demonstrating increases in depression accounting for 36% of findings, and reductions in depression observed in 7% of effects across studies (percentages do not add to 100 due to rounding). The pattern for anxiety diverged somewhat from that seen for depression. The proportion of effects across studies whereby gaming use predicted increased anxiety was 47%, similar to the proportion of effects demonstrating that gaming use was associated with no change in later anxiety (49%). For only 4% of effects was gaming use found to predict later reductions in anxiety.

5.2.1.3 YouTube, Videos, and Television

Findings for the relationships over time between use of YouTube and subsequent mental health were also mixed in the RAW dataset and followed the same pattern as for gaming (outlined above). In this manner, use at younger ages was associated with improved subsequent mental health whereas use at older ages was associated with worsening mental health. Specifically, higher YouTube use at age 15 predicted decreases in anxiety at age 16. At age 16, higher use of YouTube predicted increases in body dissatisfaction at age 17.

Time spent watching videos (DVDs) and TV and their associations over time with mental health outcomes were assessed in the LSAC sample. TV use did not predict later mental health at any timepoint for either of the Baby or Kinder cohorts. DVD use was only included in the LSAC

dataset at some early childhood data collection timepoints and did not predict any mental health outcomes at subsequent assessment waves.

5.2.1.4 Computer Use

Use of computers and the relationship to subsequent mental health was assessed only in the LSAC dataset. Several informative associations were observed, albeit with mixed direction of effects. Higher computer use at age 12 was associated with increased quality of life at age 14 in the Kinder cohort, indicating a positive predictive effect of technology use on mental health. In contrast, higher computer use at ages 14 and 16 were both associated with poorer quality of life in subsequent waves of data collection (i.e., at ages 16 and 18) in this same participant cohort. Consistent with this, also in the Kinder cohort, higher computer use at age 16 was associated with increased distress at 18 years of age.

5.2.1.5 Messaging/Chat

Prospective associations between digital technology use and later mental health outcomes were examined in the existing empirical literature for use of messaging/chat. Only a small number of studies were found that examined this technology ($n = 11$). The proportion of effects indicating that use of messaging/chat was associated with later poorer, better, or no changes in mental health was somewhat more balanced for this technology than for social media or gaming (presented in sections 5.2.1.1 and 5.2.1.2). Across studies, use of messaging/chat was found to predict later poorer mental health in 27% of effects, to predict later better mental health in 12% of effects, and to predict no change in 61% of effects (see Figure 5.3). Among samples of children, 50% of effects fell within the category of digital technology use predicting poorer mental health, among adolescents and young adults this proportion was 30% for both age groups. Due to the small number of papers, age group comparisons are interpreted with caution and examination of effects for individual mental health indicators was not possible.

5.2.2 Mental Health and Vulnerability Factors Predicting Digital Technology Use

The prediction of changes in use of digital technology by earlier mental health symptoms was also examined in the CATS, RAW, and LSAC datasets and in the existing empirical literature. Here, we also consider social, emotional, and behavioural difficulties as potential vulnerability factors that may influence digital technology use due. To aid interpretation and for consistency with section 5.2.1, where the predictive effects of earlier digital technology use on mental health outcomes were described, in this section, we also group findings by digital technology type, rather than mental health construct (although the predictive direction we are exploring is the reverse).

5.2.2.1 Prediction of Social Media Use

In the RAW dataset, all mental health variables predicted subsequent increases in the use of social media, although these effects were concentrated at two age transitions. At ages 14 and 16 higher anxiety, depression, and body dissatisfaction, as well as lower life satisfaction predicted higher social media use at age 15 and at age 17, respectively. In addition, at age 16, higher eating disorder symptoms also predicted higher social media use at age 17.

In the LSAC dataset, increases in social media use were predicted by mental health variables at three time points. At ages 18 and 20, higher distress predicted subsequently increased social media use at ages 20 and 21, respectively, in the Kinder cohort. In addition, in this same cohort, lower quality of life at age 16 predicted increased social media use at age 18.

Analyses of the CATS dataset showed that among adolescents who had high (versus low) depressive symptoms, increased risk of engaging in high social media use (> 2 hours) was observed. This risk was increased in late adolescence compared with early adolescence across males and females. Similarly, among adolescents with poor versus good wellbeing, increased risk for engaging in high social media use was also observed, with the risk slightly higher among females than males.

Among RAW participants, higher anxiety and depression at age 14 predicted increased Instagram use one year later at age 15. In this same cohort, mental health symptoms predicted subsequent Snapchat use at several timepoints. Specifically, higher body dissatisfaction at age 11 and at age 14 predicted increased Snapchat use at ages 12 and 15, respectively. In addition, higher depression at age 14 also predicted increased Snapchat use at age 15.

Examination of existing empirical literature ($n = 52$ studies) found two patterns in the associations from mental health to later social media use dominated effects, as shown in Figure 5.4. First, poor mental health was associated with later increased social media use in 17% of effects and with decreased use in none of the effects (0%). Second, mental health (either good or poor) was associated with no change in social media use in 75% of effects. Good mental health was associated with increased social media use in 4% of effects and with decreased use in 3% of effects. Proportions were similar across age groups (i.e., 14%, 19%, and 16% of effects from poor mental health to increased social media use for children, adolescents, and young adults, respectively).

Separate analyses of the associations between poor mental health and later social media use were conducted for three mental health predictors: depression, anxiety, and body dissatisfaction/disordered eating. Outcomes from these separate analyses were consistent with the effects for all mental health variables combined. Specifically, in 21% of effects, higher depression predicted greater social media use, in 13% of effects higher anxiety predicted greater social media use, and in 15% of effects higher body dissatisfaction/disordered eating predicted later increases in social media use.

In the LSAC dataset, in addition to examining time spent on social media, here we also present prediction of a variety of social media experiences and uses by mental health variables. Higher distress predicted greater frequency of negative experiences on social media across cohorts and at several timepoints. Specifically, higher distress at age 17 (Baby cohort) and at ages 18 and 20 (Kinder cohort) predicted subsequent increased negative experiences on social media at ages 18, 20, and 21, respectively. Interestingly, higher distress also predicted greater frequency of positive experiences on social media, but less consistently so. Specifically, higher distress at age 17 was associated with increased positive experiences on social media at age 18 in the Baby cohort. Quality of life also predicted social media experiences and use in this cohort. Lower quality of life at age 12 predicted increased use of social media for information seeking at age 14 (Baby

cohort) and lower quality of life at age 14 also predicted increased negative experiences on social media at age 16.

In terms of social, emotional, and behavioural difficulties as predictors of digital technology engagement, LSAC data showed that earlier conduct difficulties were positively predictive of later increased social media use from ages 12 to 14 (Baby cohort) and from ages 14 to 16 and 16 to 18 (Kinder cohort). No other social, emotional, and behavioural difficulties were predictive of social media use for the Baby cohort from ages 12 to 14, though conduct difficulties were associated with increases in negative experiences online from ages 14 to 16 and increased seeking of harmful information from ages 12 to 14. Emotional difficulties and lower peer relationship difficulties at age 14 were both predictive of increased reporting of negative experiences on social media by age 16.

For the LSAC Kinder cohort, adolescents with elevated levels of hyperactivity at ages 14 and 16 were more likely to report subsequently increases social media use at ages 16 and 18. Participants in this cohort with elevated peer relationship problems at age 14 showed subsequently decreased social media use at age 16, but no such link between these factors was observed between ages 16 and 18.

Across all datasets, a clear pattern emerged whereby poorer mental health and emotional, behavioural, and social vulnerability factors were associated with increased use of social media over time. In datasets that permitted a more granular evaluation of the links between these factors, some - but not all - indicators of poor mental health were predictive of subsequently increased use of Instagram and Snapchat platforms. In addition, higher distress and poor quality of life predicted greater frequency of encountering both negative and positive experiences online.

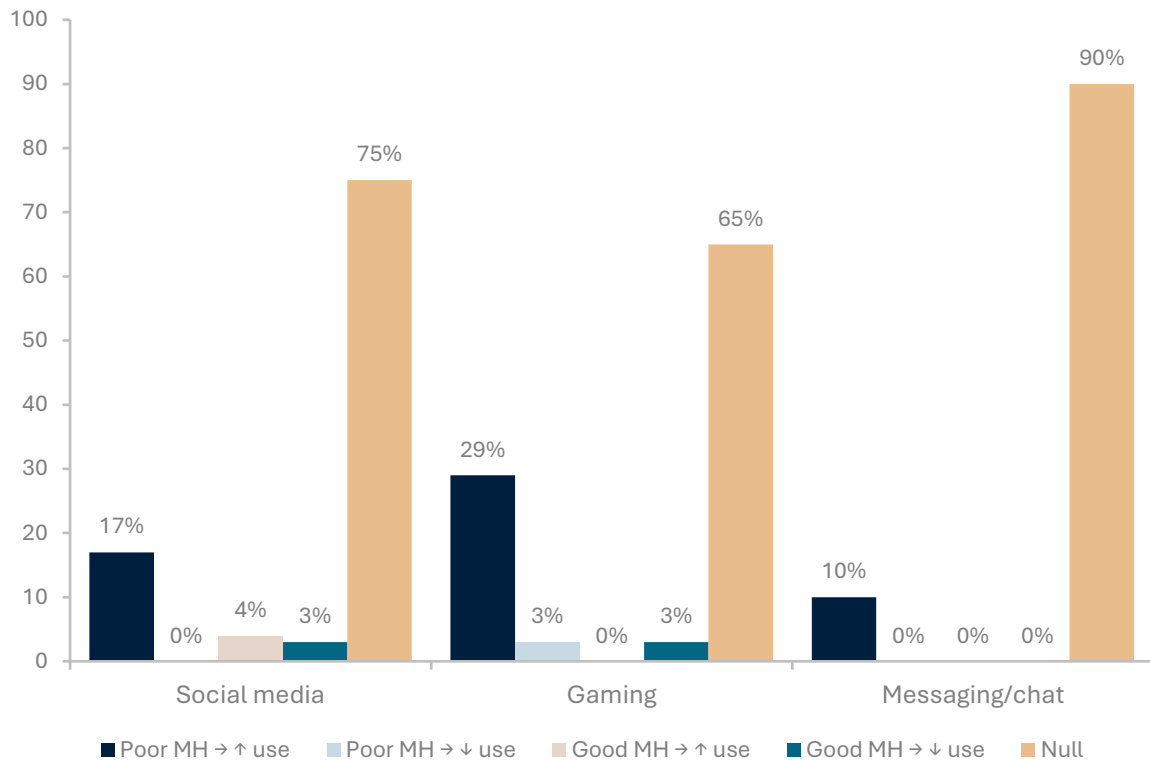
5.2.2.2 Prediction of Gaming

Among RAW participants, none of the included mental health variables predicted change in gaming use over time. In the LSAC dataset, subsequent gaming was predicted by earlier mental health variables at only one timepoint. At age 17, higher distress predicted increased gaming at age 18 in the Baby cohort.

Effects of mental health on later gaming use were synthesised across existing empirical literature ($n = 42$ studies). Where directional effects were observed, the most common pattern was that poor mental health predicted increased gaming use (29%). In contrast, poor mental health predicted decreased gaming in 3% of effects. Good mental health predicted decreased gaming in 3% of effects and no effects were observed (0%) where good mental health predicted increased gaming. Overall, however, the most frequently observed outcome was that mental health did not predict change in later gaming use (65%), as shown in Figure 5.4. An age-related pattern in observations of these proportions was observed; outcomes from poor mental health to increased gaming was observed in a higher proportion of effects among children (37%) than both adolescents (28%), and young adults (19%).

Separate analyses of the associations between poor mental health and later gaming were conducted for two mental health predictors: depression and anxiety. In 31% of effects, higher depression predicted more gaming and in 36% of effects higher anxiety predicted more gaming.

Figure 5.4 Proportion of directional and null effects from mental health outcomes to digital technology use from existing empirical literature



Note. $n = 52$ studies for social media; $n = 42$ studies for gaming; $n = 5$ studies for messaging/chat. Poor MH → ↑ use refers to poorer mental health predicting increased digital technology use predicting; beneficial refers to digital technology use predicting better mental health; null refers to digital technology use predicting no change in mental health

A number of social, emotional, and behavioural difficulties examined in the LSAC dataset were predictive of increased use of gaming over time, albeit with variable effects. For the LSAC Baby cohort, lower social skills were associated with increased gaming from ages 6 to 8. For the Kinder cohort, peer problems were predictive of increased gaming use from ages 7 to 8, 9 to 10, 12 to 14, and 14 to 16. Conduct problems also predicted increased gaming use from ages 4 to 6, as were emotion problems from ages 10 to 12, and hyperactivity problems from ages 16 to 18.

5.2.2.3 Prediction of YouTube, Video, and Television Use

As noted above, use of YouTube was assessed only in the RAW sample, and only one mental health variable predicted subsequent change in use of this technology, and only in the subsample of boys. Here, higher life satisfaction at age 15 predicted increased use of YouTube one year later at age 16. Similarly, in the LSAC sample, only one mental health variable predicted subsequent TV use and only at one time transition. That is, lower quality of life at age 14 predicted increased time spent watching TV at age 16 in the Kinder cohort.

Furthermore, in the Baby cohort of LSAC, conduct problems were found to be prospectively associated with increased TV viewing from ages 8 to 10, 10 to 12, and 12 to 14. For the Kinder cohort, conduct problems at ages 4 and 9 were predictive of increases in TV viewing at ages 6 and 10, and emotional problems at age 14 were predictive of increased TV viewing at age 16, yet emotional problems at age 4 were predictive of reduced TV viewing at age 6, while hyperactivity at ages 4 and 7 were predictive of increased TV viewing at ages 6 and 8.

5.2.2.4 Prediction of Computer Use

In the LSAC sample where computer use was assessed, use of this technology was predicted by only one mental health variable and at only one timepoint. That is, lower quality of life at age 16 predicted increased use of computers at age 18 (Kinder cohort).

For the LSAC Baby cohort, few behavioural, emotional, and social difficulties were predictive of later computer use. Indeed, only peer difficulties at age 10 were predictive of increases in computer use at age 12. In contrast, for the LSAC Kinder cohort, conduct difficulties and hyperactivity at age 16 were associated with subsequent increases in computer use at age 18; while earlier peer relationship difficulties were associated with increased computer use from age 10 to 12 but then predictive of reduced computer use from ages 12 to 14 and 14 to 16.

5.2.2.5 Prediction of Messaging/Chat

Only a small number of studies ($n = 5$) examined mental health variables predicting use of messaging/chat over time. Overall, 90% of effects indicated that mental health did not predict change in later use of messaging/chat. Figure 5.4 shows the distribution of the proportion of effects across different directions of effect; only poor mental health predicted later change in use of messaging/chat, that is an increase in use of that technology in 10% of effects. Among samples of adolescents, 25% of effects were observed where poor mental health predicted increased engagement with messaging/chat. This was the case for 6% of effects in samples of young adults. In no studies with children was mental health examined as a predictor of messaging/chat.

5.3 Cross-sectional Relationships Between Digital Technology Use and Mental Health

The DigiT survey enabled examination of cross-sectional relationships between digital technology use and mental health among a contemporary and representative sample. Here, we explore simple associations between variables within age groups (i.e., 5-12-year-old children, 13-17-year-old adolescents, and 18-25-year-old adults), between genders, and for potentially vulnerable groups (i.e., LGBTQA+ and neurodivergent participants) who may have distinct experiences with digital technology. Our exploration of cross-sectional associations first focuses on time spent on digital technologies as well as specific activities and behaviours and their associations with mental health. Given these relationships have been explored in depth with the longitudinal datasets earlier in this chapter, here we present the cross-sectional associations in brief, and rather focus on novel technologies and mental health indicators represented uniquely within the DigiT survey and not available in the three longitudinal datasets.

We then focus in greater depth on the associations between mechanisms, namely the possible personal and social processes underlying digital technology use and positive and negative

experiences, and mental health indicators. These associations provide greater insights into the ways in which complex experiences of different technologies appear to be related to mental health at a specific point in time. We caution that the associations we present do not suggest that specific uses of digital technology explored here cause increased risk for mental health or directly confer protective benefit; it remains possible that the relationships observed here reflect that mental health states influence particular types of engagement with digital technology (as suggested in the tests of bidirectional association reported above from the three longitudinal datasets), or that these associations may be due to factors other than those assessed or accounted for in the present analyses.

5.3.1 Associations Between Time Spent on Digital Technologies and Mental Health

This section presents cross-sectional associations (i.e., correlations) between digital technology use and mental health indicators. For interpretation of these associations, positive values for correlations with positive mental health variables, such as wellbeing and self-concept clarity, indicate that digital technology use was associated with higher positive mental health. Conversely, for negative mental health indicators, such as depression and loneliness, positive values for correlations indicate that digital technology use was associated with poorer mental health.

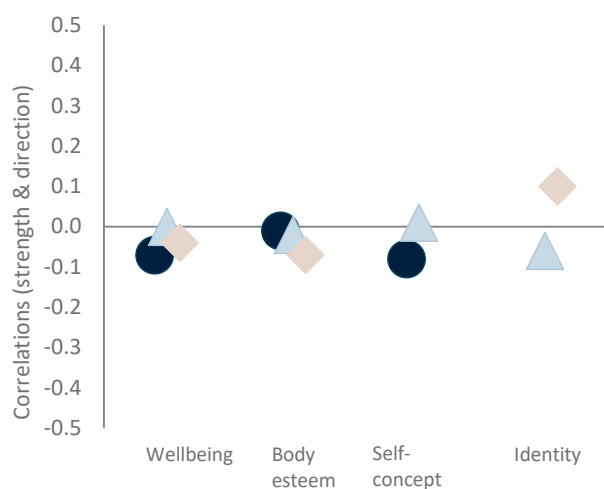
Figure 5.5 presents associations between positive and negative mental health indicators and time spent on digital technology handheld devices (smartphones or tablets) and on specific types of platforms (see Technical Report Chapter 4 for presentation of all correlations including with Facebook, Twitter, internet forums and artificial intelligence tools, and for mental health indicators of general anxiety and aggression). Consistent with analyses in the longitudinal datasets, overall time spent on digital technology devices showed little if any association with mental health among children, adolescents, and young adults. That is, correlations were generally small or negligible.

When use of messaging and gaming apps were explored, stronger associations with mental health indicators were observed, with different patterns evident across the age groups. Use of gaming platforms was associated with higher body esteem among both children and adolescents. Interestingly, however, for adolescents, higher engagement with gaming was also associated with higher depression and social anxiety. Among adolescents, more time spent on messaging apps was also associated with higher eating disorder risk and poorer identity affirmation (i.e., having one's identity accepted). In contrast, for young adults, higher use of messaging apps was related to higher body esteem. Associations between internet forum use and mental health were explored only for young adult participants (due to low numbers of forum users among children and adolescents) whereby higher use was associated with lower depression ($r = -.20, p < .05$) and loneliness ($r = .21, p < .05$).

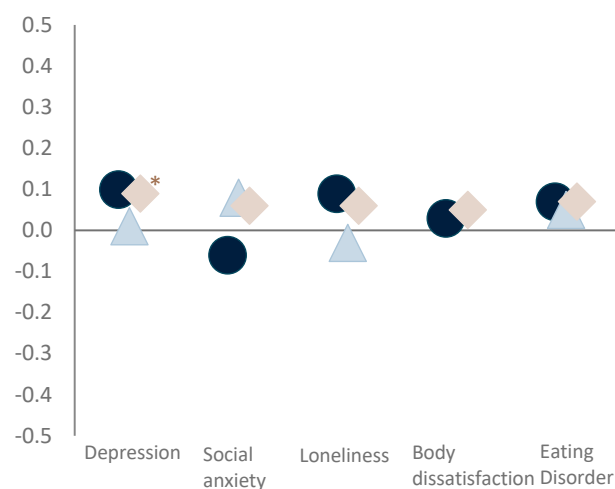
Figure 5.6 presents correlations between the use of specific messaging apps, Instagram and Snapchat and mental health indicators. These show similar patterns among adolescents and young adults, with app use generally unrelated to mental health indicators, with the exception of high Snapchat use being related to high social anxiety among young adults. Additionally, for LGBTQA+ young adults, greater time spent on TikTok was associated with higher LGBTQA+

Figure 5.5 Associations between time spent on digital technology and mental health indicators for children, adolescents, and young adults.

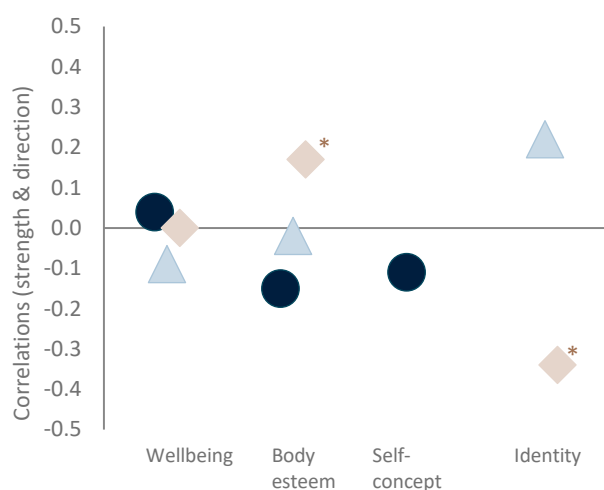
a) Time spent on digital technology and positive MH



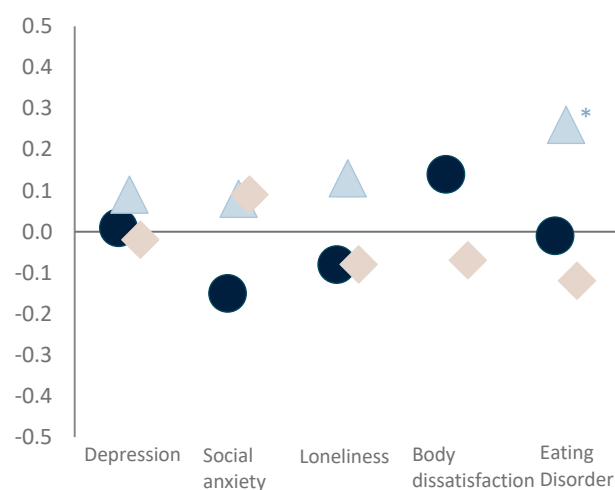
b) Time spent on digital technology & negative MH



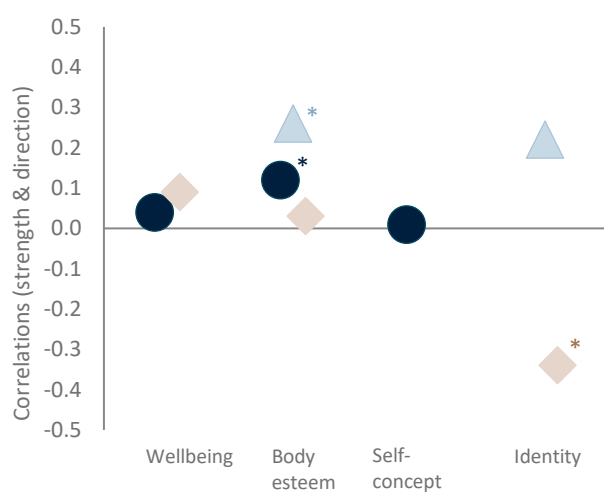
c) Time spent on messaging apps and positive MH



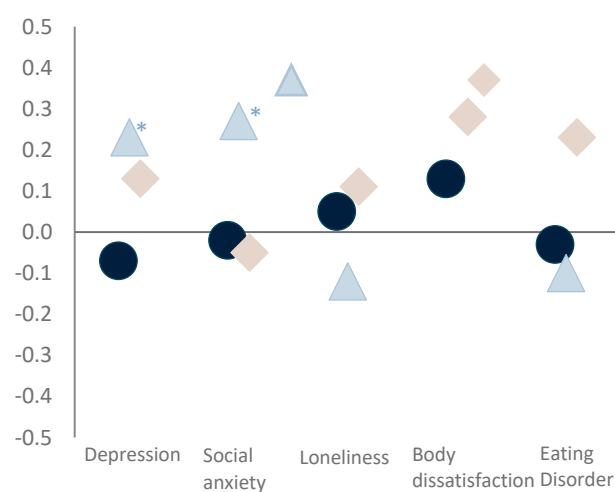
d) Time spent on messaging apps and negative MH



e) Time spent on gaming apps and positive MH



f) Time spent on gaming apps and negative MH

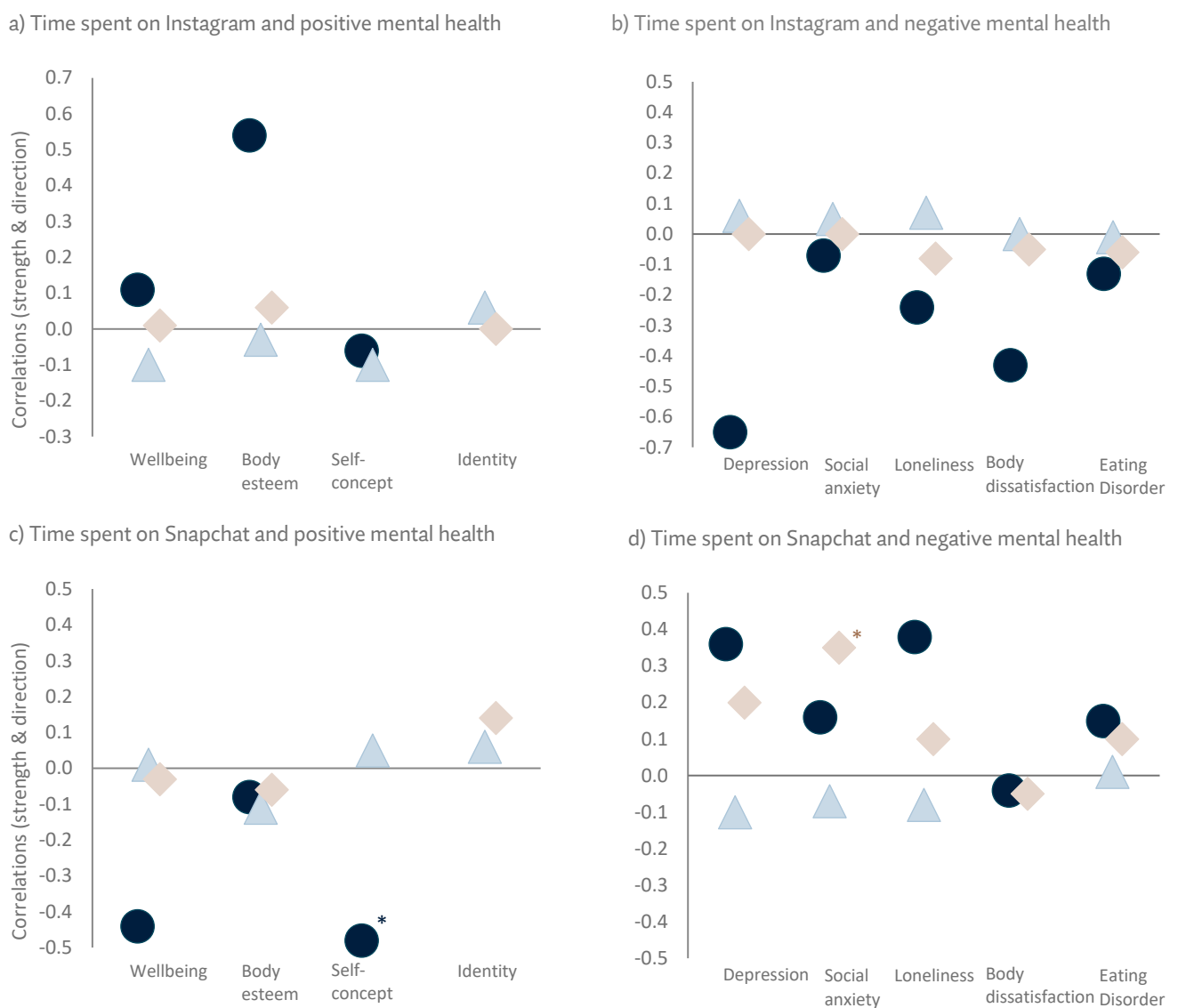


Note. For figure notations, see note to figure on next page.

identity affirmation (assessed only in this group), whereas greater time spent using messaging apps was associated with lower LGBTQA+ identity affirmation among LGBTQA+ young adults. Patterns of associations with mental health appear to differ for these platforms for children. Here, the only statistically significant association was between higher Snapchat use and poorer self-concept clarity. Lack of statistically significant associations for other mental health indicators among children is due perhaps to the small number of children using Instagram and Snapchat.

Further, we observed no differences in strengths or directions of associations between time spent on digital technology and mental health according to gender or neurodivergence among children, adolescents, or young adults.

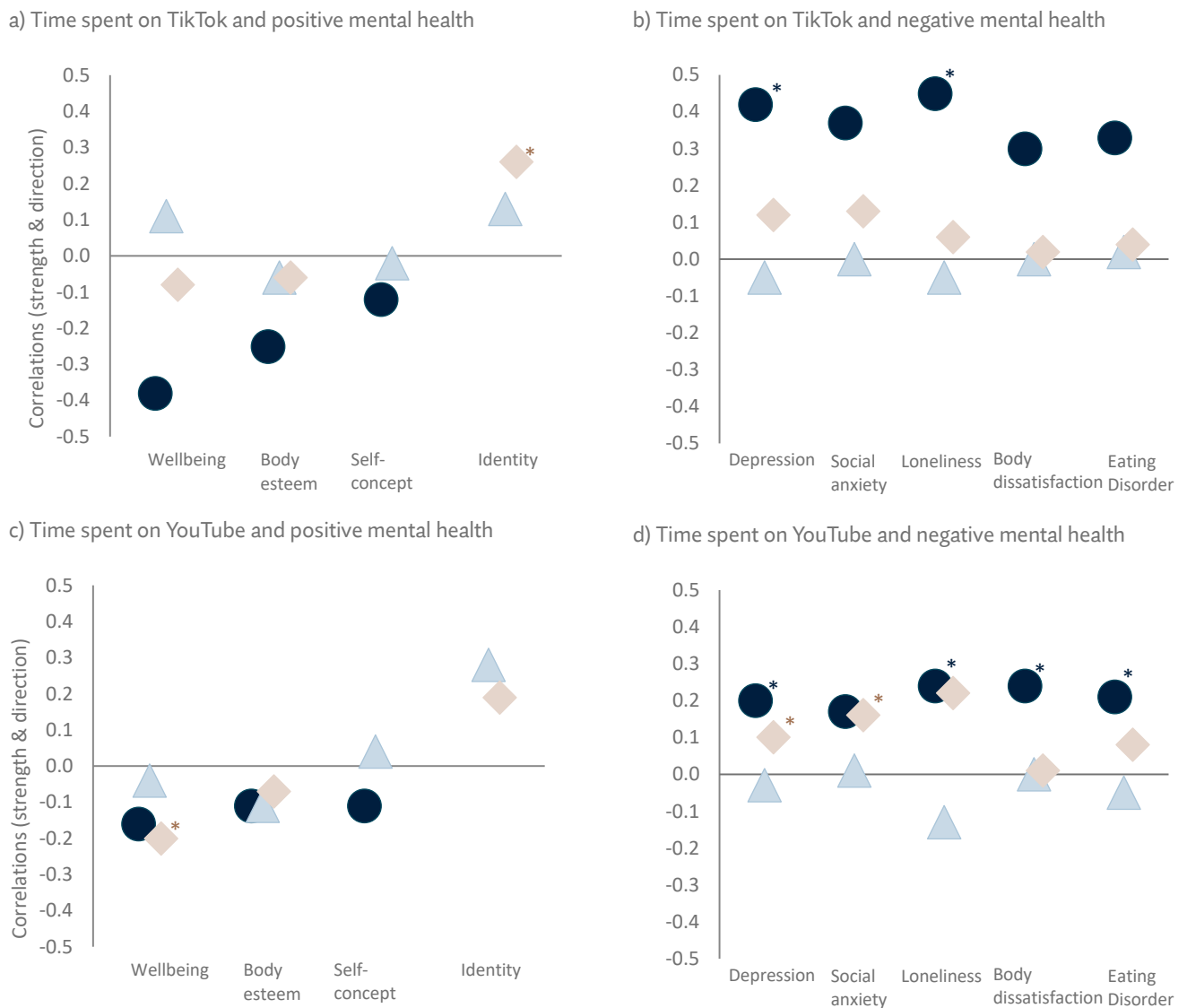
Figure 5.6 Associations between time spent on Instagram and Snapchat and mental health indicators for children, adolescents, and young adults.



Note. ● children; ▲ adolescents; ◆ young adults' * significant correlation at $p < .05$ (two-tailed). Self-concept refers to self-concept clarity; identity refers to identity affirmation; eating disorder refers to eating disorder risk. Self-concept clarity and body dissatisfaction were assessed only in children aged 5–12 (parent report) and adolescents aged 13–17. Identity affirmation was administered only to participants with LGBTQA+ identity. Correlations were not computed for certain pairs of variables where sample size was low or where the measure was not administered to that group.

Figure 5.7 presents the correlations between use of social media video platforms, TikTok and YouTube, and mental health indicators. Similar patterns of association were observed across both platforms for children whereby more time spent watching TikTok or YouTube videos was associated with poorer mental health, particularly for negative indicators thereof. For YouTube, this same pattern was also apparent, but less consistent, among young adults. In addition, higher TikTok use among young adults was associated with higher positive identity affirmation. Among adolescents, neither time spent on TikTok nor YouTube was associated with any positive or negative mental health indicator.

Figure 5.7 Associations between time spent on TikTok and YouTube and mental health indicators for children, adolescents, and young adults.



Note. ● children; ▲ adolescents; ◆ young adults

* significant correlation at $p < .05$ (two-tailed)

Self-concept refers to self-concept clarity; identity refers to identity affirmation; eating disorder refers to eating disorder risk. Self-concept clarity and body dissatisfaction were assessed only in children aged 5–12 (parent report) and adolescents aged 13–17. Identity affirmation was administered only to participants with LGBTQA+ identity. Correlations were not computed for certain pairs of variables where sample size was low or where the measure was not administered to that group.

5.3.2 Digital Technology Content, Interactions, and Behaviours, and Associations with Mental Health

In addition to time spent on digital technologies, we were also interested in the specific content, interactions, and behaviours children and young people engage with on digital technology and how these are related to mental health among DigiT survey participants. A summary of the statistically significant associations for age cohorts, and for gender, LGBTQA+, and neurodivergent subgroups is presented here. Note, subgroup differences are only indicated where significant differences in strength or direction of associations were observed. For brevity, we have not specified each instance where subgroup differences were not found.

5.3.2.1 Viewing Content on Social Media

Viewing content on social media did not correlate with any mental health outcomes for children. However, more time spent viewing content was associated with higher anxiety for adolescents and young adults and also with higher loneliness and body dissatisfaction among young adults. Subgroup differences also emerged with greater passive viewing associated with higher depressive symptoms and lower self-concept clarity among adolescent females, whereas associations were not significant among adolescent males.

5.3.2.2 Responding to Social Media via Likes and Reactions

Similarly to findings for viewing of content, using likes and reactions did not correlate with any mental health indicators for children. Among older participants, more frequently liking or reacting to content were associated with higher depression, social anxiety, and body dissatisfaction for young adults only, with generalised anxiety and greater eating disorder risk for both adolescents and young adults, and with lower body esteem among adolescents only. Subgroup analyses indicated the latter association with body esteem was significant among adolescent females only but was not observed specifically among male adolescents. Additionally, higher use of likes and reactions was associated with lower loneliness among gender diverse young adults, with higher eating disorder risk and higher depression among non-LGBTQA+ young adults but not among their LGBTQA+ peers, and higher depression among males but with lower depression among gender-diverse young adults, albeit the latter was a non-significant association.

5.3.2.3 Commenting on Social Media

Commenting on social media was associated with several mental health indicators for children and for subgroups of adolescents and young adults. For children, higher engagement in commenting was associated with lower wellbeing, and with higher depression, social anxiety, eating disorder risk, and aggression.

Commenting was similarly associated with higher eating disorder risk among adolescents and young adults. For the former age cohort, however, further analysis revealed a more complex pattern of findings, whereby the direction of associations differed by subgroup. That is, more frequent commenting was associated with higher eating disorder risk among non-neurodivergent participants but among non-neurodivergent adolescents the association between more frequent commenting and lower eating disorder risk was non-significant. Additionally, greater engagement in commenting was linked to higher wellbeing among adolescents identifying as neurodivergent but not among non-neurodivergent adolescents. The

direction of association between commenting and wellbeing was negative among adolescent females (i.e., higher commenting linked to poorer wellbeing) and positive among adolescent males (i.e., higher commenting linked to better wellbeing).

For young adults, engaging in more frequent commenting was also associated with higher depression, eating disorder risks, and body dissatisfaction. Again, however, further analysis revealed a somewhat more complex pattern of findings by subgroup. For example, while the overarching pattern of commenting associated with higher depression held true among both male and female subgroups, and specifically among non-LGBTQA+ young adults, it was associated with lower depression among those young adults identifying as gender-diverse. In addition, the direction of association between commenting and generalised anxiety was negative among neurodivergent young adults but this was not the case for non-neurodivergent young adults.

5.3.2.4 Publicly Sharing and Posting on Social Media

A complex range of associations was observed between publicly sharing and posting on social media and mental health indicators for children, adolescents, and adults, as well as for subgroups therein. To simplify presentation of these relationships, a schematic summary of significant associations between sharing and posting on social media and mental health indicators is shown in Figure 5.8 with subgroups presented only where different patterns of findings were apparent.

Several patterns were evident. First, posting was associated multiple indicators of poor mental health (more so than was sharing content), and this was consistently the case for children. Among older participants – adolescents and young adults – where posting on social media was observed to be associated with positive mental health indicators, this was in subgroups, particularly LGBTQA+ adolescents, neurodivergent adolescents, and female adults. In contrast, several relationships between poor mental health indicators and posting social media content were observed for non-LGBTQA+ adolescents and for female adolescents. Second, the mental health indicators most frequently associated with public sharing and posting of social media content across age cohorts and subgroups of participants were depression and eating disorder risk. Here, greater use of sharing and posting were consistently associated with higher depression and higher eating disorder risk. Publicly sharing and posting content on social media was also associated with higher aggression among children (not included in the schematic as it was assessed only among children).

Figure 5.8. Presence or Absence of Significant Relationships between Sharing and Posting on Social Media and Mental Health Indicators among Participant Groups

	Public sharing					Posting									
	Children	Teens	Adults	Male Adults	Gender-diverse Adults	Children	Teens	Female Teens	LGBTQA+ Teens	Non-LGBTQA+ Teens	Neuro-divergent Teens	Non-Neuro-divergent Teens	Adults	Female Adults	Male Adults
Wellbeing (Lower)	✓					✓				✓		✓			✓
Depression (Higher)	✓		✓	✓		✓	✓	✓		✓			✓		✓
General anxiety (Higher)						✓									
Social anxiety (Higher)						✓							✓		
Loneliness (Higher)							✓			✓					✓
Body dissatisfaction (Higher)			✓												
Eating disorder risk (Higher)	✓	✓	✓			✓	✓	✓					✓		
Wellbeing (Higher)									✓		✓			✓	
Loneliness (Lower)														✓	
Depression (Lower)					✓										
Social anxiety (Lower)														✓	

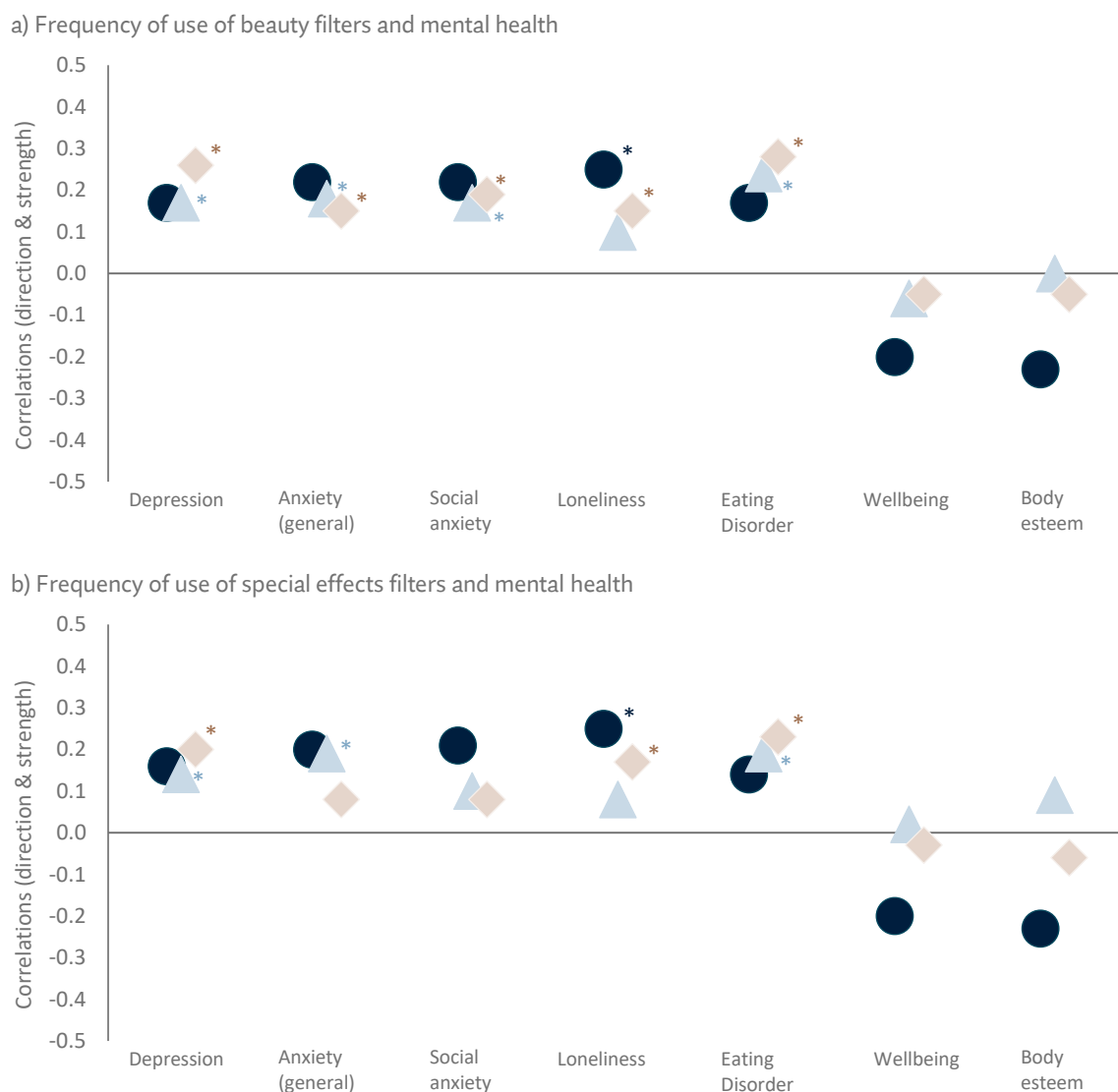
Note. ■ children; ■ adolescents; ■ young adults

✓ indicates the presence of a significant association. Associations between variable pairs and for subgroups of participants that were not observed to be statistically significant were not included in the schematic in order to minimise complexity. The term 'Teens' is used to indicate adolescent participants. Here, and elsewhere in the report referring to gender comparisons among DigiT survey participants, gender diverse refers to participants who identify their gender identity as non-binary or transgender (-man or -woman) or another (non-male or female) identity not specified by the participant, and not accounting for sexual identity. This distinction was made for gender comparisons only. LGBTQA+ refers to participants who identify as having diverse gender and/ or sexuality.

5.3.2.5 Social Media Photo Activities: Use of Appearance-focused Features

Similar patterns of associations between the use of beauty and special effects filters and mental health indicators were revealed in responses to the DigiT survey, including across depression, anxiety, loneliness, and eating disorder risk, albeit with variable specific patterns among children, adolescents, and young adults. These patterns are shown in Figure 5.9 for the full samples across age cohorts and demonstrate that where associations were observed, more frequent use of filters prior to posting photos on social media was associated with poorer mental health. There was no evidence that the use of either beauty or special effects filters was associated with body dissatisfaction or aggression, nor with any positive mental health indicator, in the full samples across age cohorts (see the Technical Report, Chapter 4 for details).

Figure 5.9. Associations between use of Beauty Filters and Special Effects Filters on Social Media Posted Photos and Mental Health Indicators



Note. ● children; ▲ adolescents; ◆ young adults; * significant correlation at $p < .05$ (two-tailed); Positive correlations with negative mental health indicators reflect higher beauty/special effects filter use associated with poorer mental health. Negative correlations with positive mental health indicators reflect higher beauty/special effects filter use associated with poorer mental health.

However, exceptions to the abovementioned general patterns of association were observed among participant subgroups. Among adolescents, beauty filter use was significantly associated with poorer wellbeing among males and among non-neurodivergent participants, whereas among female adolescents this effect with wellbeing was small and positive (though non-significant), and among neurodivergent adolescents using beauty filters was associated with higher wellbeing. In addition, using beauty filters was more strongly associated with higher social anxiety and eating disorder risk and with lower self-concept clarity among non-neurodivergent compared to neurodivergent adolescents. The associations between using beauty filters and body esteem were in opposing directions for female and male adolescents, with beauty filter use linked to higher body esteem for females and lower body esteem for males.

Beauty and special effects filter use was associated with higher wellbeing among young adult males whereas among young adult females and gender diverse young adults use of these technologies was (non-significantly) associated with lower wellbeing. The relationships between beauty filter and special effects filter use and negative mental health indicators (depression and body dissatisfaction) were stronger among non-LGBTQA+ and non-neurodivergent young adults than among their LGBTQA+ and neurodivergent counterparts.

5.3.2.6 Source of Social Media Content

The source from which content is accessed on social media and its associations with mental health indicators was also explored; that is whether content seen on social media originating from known or followed sources or from recommender systems (i.e., trending videos or suggested posts delivered by the app algorithm), is associated with mental health indicators. As shown in Table 5.1, the frequency with which children received content from people they know or follow was not significantly associated with any mental health indicators. In contrast, more frequently seeing content recommended by platform algorithms was associated with higher levels of depression, generalised anxiety, loneliness, and aggression.

Among adolescents, only one association was statistically significant in the full sample but different patterns emerged among subgroups. That is, higher frequency of receiving content from known or followed people was associated with higher social anxiety among adolescents in general. This relationship was also observed among neurodivergent but not among non-neurodivergent adolescents. Additionally, receiving content from known or followed people was associated with some eating disorder risk and depression in different directions and strengths for male and for female adolescents. That is, higher frequency of receiving content from known or followed people was associated with higher eating disorder risk and more depressive symptoms among adolescent females but associations were in the opposite direction among adolescent males.

Among young adults, higher frequency of receiving content from known or followed people was associated with higher wellbeing in the sample in general, and among females specifically, whereas no associations were observed between following content from recommender systems and mental health indicators for this group. Additional exploration in subgroups revealed that receiving content from known or followed people was associated with higher depression among

non-LGBTQA+ participants, but (non-significantly) with lower depression among LGBTQA+ young adults.

Table 5.1. Associations between positive and negative mental health indicators and the source of social media content for full samples across age cohorts.

	Negative Mental Health Indicators					Positive Mental Health Indicators		
	Depression	Generalised anxiety	Social Anxiety	Loneliness	Aggression	Wellbeing	Identity Affirmation	Self-concept Clarity
Content from known / followed people								
Children	0.13	0.18	0.21	0.05	0.16	-0.01	-	-0.09
Adolescents	0.08	0.06	0.11*	0.01	-	0.11	0.25	0.00
Young adults	0.03	-0.01	0.07	-0.03	-	0.15**	0.01	-
Content recommended from apps								
Children	0.34**	0.27*	0.10	0.25*	0.25*	-0.03	-	-0.05
Adolescents	0.09	0.07	0.09	0.10	-	0.03	-0.09	-0.03
Young adults	0.08	0.07	0.02	0.00	-	0.01	-0.04	-

Note. * significant correlation at $p < .05$. ** significant correlation at $p < .01$

Aggression was assessed only in children aged 5–12). Self-concept clarity was assessed only in children aged 5–12 and adolescents aged 13–17. Identity affirmation was administered only to participants who identified as part of the LGBTQA+ community. Correlations were not computed for certain pairs of variables where sample size was low or where the measure was not administered to that group.

5.3.2.7 Private Messaging and Chatting

The use of private messaging/chatting had different patterns of associations with mental health indicators across age cohorts. Among young adults, messaging/chatting was consistently associated with more positive mental health, namely higher wellbeing and body esteem, and with lower loneliness and social anxiety. These favourable patterns were particularly pronounced for vulnerable groups; including that higher use of messaging/chatting was associated with lower loneliness among LGBTQA+ young adults and with lower loneliness and generalised anxiety among neurodivergent young adults.

In contrast, among non-LGBTQA+ young adults but not LGBTQA+ young adults, higher use of messaging/chatting was associated with greater body dissatisfaction. Relationships were also observed in a similar direction for children, whereby higher use of messaging/chatting was associated with poorer wellbeing and lower body esteem.

Associations between messaging/chatting and mental health indicators among adolescents were small to negligible and non-significant. However, here subgroup analyses indicated that greater engagement with messaging/chatting was associated with lower social anxiety among females with the association negligible among male adolescents.

5.3.2.8 Gaming Interactions

Here we outline that the ways in which children, adolescents, and young adults engage with gaming are variably linked with positive and negative mental health indicators across age groups, and across subgroups within age cohorts.

Playing educational games was associated with higher eating disorder risk among adolescents and also among female young adults but with lower eating disorder risk among gender-diverse young adults (and with negligible if any association specifically among male young adults). Among non-LGBTQA+ adolescents, playing educational games was associated with higher wellbeing and lower depression, but among LGBTQA+ adolescents, the inverse was seen – an association with lower wellbeing and higher depression. Additionally, for neurodivergent adolescents, a significant association was observed between playing educational games and higher self-concept clarity whereas for non-neurodivergent adolescents, higher frequency of playing educational games was associated with lower self-concept clarity. Playing educational games was not associated with mental health indicators among children.

For the full sample of children and the full sample of adolescents, solo game playing was not associated with mental health indicators. However, among non-neurodivergent children, solo game playing was linked to higher body dissatisfaction and greater eating disorder risk; a pattern not observed for neurodivergent participants. Moreover, among adults, playing games alone was associated with higher loneliness, higher social anxiety, and higher depression.

Multiplayer gaming was not associated with any mental health indicators among the full samples of children, adolescents, or young adults. Again, however, different patterns were observed by subgroup; here, according to gender. In children, greater frequency of multiplayer gaming was associated with higher body esteem among females but with lower body esteem among males. Similarly, among female young adults, multiplayer gaming was associated with higher wellbeing among female young adults, with lower wellbeing among gender-diverse young adults, and effects were negligible among male young adults.

Game playing via streaming was found to have several associations with mental health indicators among children and adolescents but none among young adult participants. In children, streaming game playing was associated with lower wellbeing, body esteem, and self-concept clarity and with higher loneliness, depression, and body dissatisfaction. Among adolescents, streaming game playing was associated with higher social anxiety and eating disorder risk.

For children, opposing patterns of relationships between streaming game play and mental health indicators were observed for neurodivergent and non-neurodivergent participant subgroups. Greater frequency of streaming game play was associated with higher aggression and lower self-concept clarity among non-neurodivergent children, whereas for neurodivergent children, streaming game play was linked to lower aggression and higher self-concept clarity. In addition, different strengths of relationships between streaming game playing and positive mental health indicators were observed depending on whether adolescents were or were not LGBTQA+, with stronger associations between streaming game playing and lower wellbeing and self-concept clarity among LGBTQA+ adolescents compared to relationships among non-LGBTQA+ adolescents.

5.3.2.9 Summary of Mental Health Associations Across Digital Technology Content, Interactions, and Behaviours

Overall, these findings from DigiT survey participants indicate that among 5–12-year-old children, more active and public forms of social media use, particularly posting and commenting, showed the greatest association with poorer mental health outcomes, whilst more passive or private behaviours, such as viewing content, show comparatively fewer associations with poor mental health indicators. The source of social media content also appeared relevant, with viewing algorithm-recommended material showing a notably broader range of associations with negative mental health indicators than content from known or followed accounts. It is important to note, however, that the small number of parents reporting any social media use for their children in this age group limits our confidence in the conclusions that can be drawn here, and so these patterns should be interpreted with caution and considered as avenues requiring further investigation.

The findings for 13–17-year-old adolescents highlight that social media appearance-focused behaviours, particularly beauty filter use, show the most consistent associations with poorer mental health outcomes across the adolescent cohort as a whole. However, subgroup analyses revealed that the direction of associations differed meaningfully by gender, neurodivergence, and LGBTQA+ identity, whereby behaviours such as posting and commenting showed a neutral or even more positive pattern among LGBTQA+ and neurodivergent participants compared with their non-LGBTQA+ and non-neurodivergent peers.

Associations between social media engagement and mental health indicators for 18–25 year old adults reveal interesting patterns differentiating passive and active forms of social media engagement. Overall, relatively passive behaviours, such as passive viewing and using simple likes/reactions, tended to show more consistent negative associations with mental health indicators, whereas public behaviours, such as posting or commenting, showed a more mixed pattern, whereby the direction and strength of associations varied by subgroup. Hence, the findings for young adults highlight the importance of considering both the type of behaviour and the subgroup in question. Whilst private messaging stood out as consistently beneficial, particularly for the mental health of potentially marginalised groups, more public- and appearance-focused behaviours tended to be linked with more negative mental health indicators, especially for non-LGBTQA+ and non-neurodivergent participants. The source of content also appeared to matter, with engagement with material from personally known or followed sources showing a relatively consistent pattern of association with positive mental health indicators (compared to engagement with material recommended by in-app algorithms).

Overall, levels of engagement with different gaming types - playing educational games, single-player-, or multiplayer games, or gaming via live streaming - showed limited evidence of associations with mental health indicators. Streaming games showed the most consistent evidence of association with poorer mental health, particularly among children and LGBTQA+ adolescents, whilst other gaming types showed more limited or mixed associations that varied meaningfully by gender, LGBTQA+ identity, and neurodivergence.

5.3.3 Associations Between Mechanisms Underlying Positive and Negative Experiences of Digital Technology and Mental Health

The final cross-sectional analyses from the DigiT survey data collected for children, adolescents, and young adults explored associations between mechanisms underlying positive and negative experiences of social media, gaming, and artificial intelligence (AI) use and mental health indicators. This section presents an overview of findings across these analyses, with full details of correlations, subgroup differences, and decision tree analyses reported in Chapter 4 of the Technical Report.

5.3.3.1 Negative Mechanisms

Consistent findings across the three participant groups (children, adolescents, and young adults) were that harmful and disruptive digital technology experiences, such as feeling left out, being distracted by social media, using social media as an escape, and compulsive use, were associated with poorer mental health outcomes. Consequently, several mechanisms may potentially be considered universal negative mechanisms. These included feeling left out, distraction from tasks, escapism, relaxation-driven use, unwanted sexual content, and compulsive or time-consuming patterns of use, each discussed in turn below.

Feeling left out was one of the mechanisms most consistently related to poorer mental health, with stronger endorsement of feeling left out while using digital technology correlating with poorer mental health among all age groups for almost all of the positive and negative mental health indicators (88% of associations tested). This was the case across both social media and gaming mechanisms, noting that this mechanism was not assessed for AI use as it was not considered relevant.

Distraction from other tasks when gaming and using social media was associated with almost all positive and negative mental health indicators for children and young adults, and for more than half of the indicators for adolescents. The pattern of findings showed that higher endorsement of social media and gaming as being distracting was associated with higher negative mental health and lower positive mental health. Among adolescents, associations with negative mental health indicators were more consistently observed than positive indicators.

The escapism mechanism, that is, using digital technology as an escape or to zone out, was conceptualised in the consultation phase as a potentially positive mechanism underlying experiences with digital technology, particularly for gaming. However, the pattern of cross-sectional associations suggests several possible interpretations. Across all age cohorts, and in both parent-and child-report for children, higher endorsement of escapism (i.e., social media/gaming/chatting with an AI companion “offers me an escape from my life”) was associated with several negative mental health indicators, such as higher depression, generalised anxiety, social anxiety, loneliness, body dissatisfaction, and eating disorder risk as well as with positive mental health indicators including lower wellbeing and body esteem.

A parallel pattern emerged for relaxation-driven use. Endorsing digital technology use (social media, gaming, and AI companions) to relax or take a break when stressed was associated with a range of poor mental health indicators (higher negative mental health and lower positive mental health) across age cohorts. These findings are notable given that escapism and relaxation are

often discussed as potential benefits of gaming and digital technology use, supporting stress relief and emotional regulation. The present cross-sectional associations may not support the simplistic framing of escapism and relaxation from stress as producing beneficial outcomes but instead raise the possibility that mental health experiences may drive certain kinds of use of digital technologies.

Unwanted sexual contact experienced while using social media or chatting with AI companions was also consistently associated with poorer mental health. The associations were particularly strong for children who experienced unwanted sexual content while chatting with an AI companion. Although associations were slightly weaker between receiving unwanted sexual content on social media and mental health indicators for children, the pattern showed strong consistency; that is, this experience was significantly correlated with all mental health variables (except for body esteem). As a reminder, this pattern of findings specifically for children should be interpreted with caution, given the small number of children reportedly using AI companions in our DigiT survey sample.

5.3.3.2 Positive Mechanisms

In contrast, fewer mechanisms were observed to be universally positive across digital technology types and age cohorts. In particular, among children, no positive social media mechanisms were significantly associated with any mental health outcomes.

Links between positive mechanisms and mental health were somewhat more evident in the context of gaming among children (parent-report and child interviews), though these remained selective in scope. From parent-report, identity acceptance was associated with higher wellbeing, body esteem, and self-concept clarity, whilst teamwork and positive support were each linked to higher wellbeing, lower loneliness, lower aggression, and higher self-concept clarity. In a divergent result, the positive support mechanism was also related to higher eating disorder risk. From child-report in interviews, perceiving gaming as a fun way to relax was linked with lower anxiety, and having a sense of community belonging when gaming was linked with higher wellbeing and with lower loneliness and aggression. In contrast, associations from parent-report data on children revealed community belonging to be linked to poorer mental health outcomes across several indicators: depression, social anxiety, body dissatisfaction, and eating disorder risk.

Among adolescents and young adults, some significant associations were observed. Feeling accepted on social media was associated with higher wellbeing and lower depression, anxiety, and loneliness for adolescents and young adults. Similarly, feeling accepted as oneself while gaming was also associated with lower loneliness among adolescents. In light of these consistent relationships, identity acceptance appears to be a primary positive mechanism in terms of cross-sectional relationships with mental health indicators among contemporary adolescents and young adults.

In the young adult cohort, identity-affirming (i.e., feeling accepted on social media) and socially supportive mechanisms showed the broadest and most consistent relationships with positive mental health. Feeling accepted on social media was associated with all nine tested outcomes, being positively linked to wellbeing and body esteem, and negatively linked to depression,

anxiety, loneliness, and eating disorder risk. These represented the most extensive pattern of associations for mechanisms across all age cohorts. Positive support and social connection mechanisms were also associated with a similar range of positive and negative mental health indicators among young adults.

5.3.3.3 Variation in associations by gender, LGBTQA+ identity, and neurodivergence

In addition to examining the associations between mechanisms and mental health across age groups, we also explored whether these associations differed according to subgroup, that is, gender diversity, LGBTQA+ identity, and neurodivergent status. Here we describe key patterns and provide some exemplars of these patterns. Full details of associations for all mechanisms across digital technology types and for all mental health indicators among subgroups can be found in the Technical Report, Chapter 4.

Across all digital technology types and associations of mechanisms with mental health, many subgroup differences were observed, indicating that the same mechanism is not related to mental health in the same way across subgroups. For example, loss of time scrolling on social media was associated with higher loneliness and higher social anxiety among non-LGBTQA+ and non-neurodivergent young adults, but this mechanism was not associated with any mental health indicator among LGBTQA+ or neurodivergent young adults. Among children, using gaming as a fun way to relax was associated with lower depression among girls but higher depression among boys. Moreover, some mechanisms that may, on face value, appear positive were associated with both poorer and better mental health indicators across subgroups. For example, teamwork while gaming was associated with lower loneliness for girls, lower social anxiety for neurodivergent adolescents, but higher depression among female young adults.

A clear pattern was revealed that associations between digital technology mechanisms and poorer mental health tended to be observed more so among non-LGBTQA+ and non-neurodivergent adolescents and young adults than their LGBTQA+ or neurodivergent peers. This was particularly the case across social media and gaming. This is not to say that digital technology mechanisms were unassociated with poorer mental health among LGBTQA+ or neurodivergent adolescents and young adults, rather the associations either occurred for fewer mechanisms and fewer mental health indicators or were found to be weaker for these subgroups. These cross-sectional findings are inconsistent with longitudinal findings reported above (section 5.2.1.1.1) whereby social media use was observed to predict more pronounced risk for later depressive symptoms and self-harm among gender/sexually diverse adolescents relative to non-gender/sexually diverse adolescents. Thus, concurrent links between digital technology experiences and mental health may not translate to greater or lesser risks over time and thus these cross-sectional results should be interpreted with caution.

Among LGBTQA+ and neurodivergent subgroups, identity-affirming mechanisms were uniquely associated with better mental health. Feeling accepted, freedom of expressing oneself, and identity-affirming connection while using digital technology were consistently associated with better mental health for LGBTQA+, neurodivergent, and (for some outcomes), gender diverse users. These mechanisms were either weakly, or not associated with mental health for other subgroups.

For gender-diverse young adults, associations between social media mechanisms and mental health outcomes were amplified in both directions. That is, for this subgroup of participants both stronger associations between mechanisms and poorer mental health, and stronger associations between mechanisms and better mental health, were observed relative to those among male and female young adults. Mechanisms associated with poorer mental health (particularly depression) include compulsive checking and loss of time scrolling social media, escapism, and social media influencing one's self-image. Mechanisms associated with better mental health (i.e., higher wellbeing, lower anxiety and eating disorder risk) include use of social media for entertainment and freedom of expression on social media.

Considering gender differences between males and females, for some technologies and some mechanisms, associations with poorer mental health were more prominent among females, whereas other digital technology mechanisms were more prominently associated with poorer mental health for males. For instance, among male adolescent social media users, mechanisms such as experiencing bullying, comparing with others, and perceiving that others had perfect lives on social media were associated with lower body esteem, wellbeing, and self-concept clarity. Associations between these same mechanisms and mental health indicators were negligible among female adolescents. For children, some consistency in the direction of associations between gaming mechanisms and poorer mental health was observed between girls and boys, but in some instances the associations were stronger among girls than boys (i.e., bullying while gaming, sleep disruption and body dissatisfaction, eating disorder risk). For adults using gaming, distinct gender patterns were observed with some mechanisms (i.e., experiencing bullying, difficulty taking breaks, being upset when unable to game, and sleep disruption) associated with poorer mental health among male young adults, but associations were either weak or not observed for female young adults. For the latter subgroup, using gaming to relax and engaging in teamwork were associated with poorer mental health indicators, whereas these associations were not observed in male young adults.

For LGBTQA+ adolescents, mechanisms related to one type of digital technology use stand out as being more consistently related to poorer mental health than for other types of digital technology use. Mechanisms related to AI companion use showed stronger associations with mental health outcomes in this subgroup, whereas social media and gaming mechanisms displayed few comparable associations when contrasted with non-LGBTQA+ peers or other adolescent subgroups. For example, exposure to extreme or dangerous ideas, or to unwanted sexual content while chatting with an AI companion was associated with lower wellbeing and self-concept clarity, as well as and higher levels of social anxiety for LGBTQA+ adolescents.

Among neurodivergent children and adolescents, experiences (mechanisms) of use of two digital technology types were observed to have distinct patterns of relationships with mental health. For neurodivergent children, a pattern of consistent associations between gaming mechanisms and poorer mental health was observed. Almost all gaming use mechanisms were associated with poorer mental health among neurodivergent children, particularly depression, anxiety, and eating disorder risk. Only learning new skills while gaming was associated with a better mental health (lower aggression; note that subgroup analyses were not explored for mechanisms for other types of digital technologies due to low usage among children). For

neurodivergent adolescents, a pattern of consistent associations between AI companion mechanisms and better mental health was observed. Several mechanisms were associated with lower depression in this subgroup. These were exposure to diverse content, escapism, forming a strong bond with an AI companion, and seeking relaxation when stressed, and interestingly, exposure to extreme or dangerous ideas. Relationships between these mechanisms and better mental health were not observed in other subgroups of adolescents.

These findings demonstrate the highly nuanced pattern of associations between mechanisms underlying positive and negative experiences of digital technology use and mental health indicators for different subgroups of users. Such findings suggest that differences in the roles of digital technology mechanisms can be obscured if they are treated as universal, rather than taking account of the specific needs of subgroups at different ages, and how these relate to different digital technologies.

5.3.3.4 Combination of Mechanisms

In this section we move from presentation of individual relationships between positive and negative mechanisms and mental health outcomes to reporting on analyses that map the *combination* of mechanisms underlying digital technology use that differentiate low from high scores for mental health outcomes (using decision tree analysis). These analyses were completed separately for digital technology type and age group where sufficient numbers of DigiT survey participants used the particular digital technology. This was the case for social media use for adolescents and young adults, for gaming for all three cohorts, and for generative AI for adults. The analyses were not conducted separately for participants according to gender diversity or LGBTQA+ identity or neurodivergent status because there were not enough participants for these to be conducted separately.

Social Media

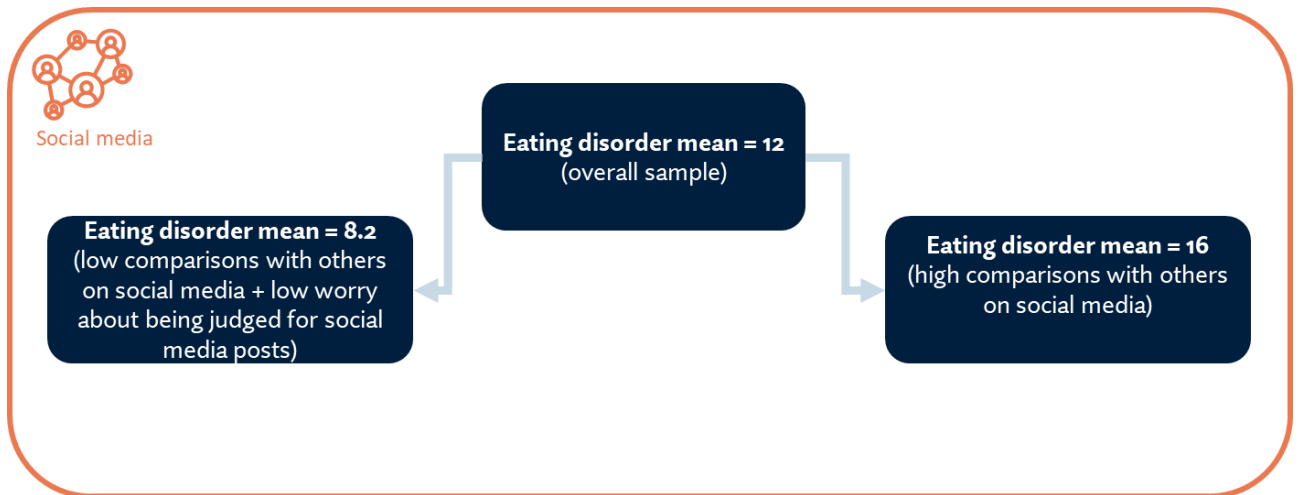
Among social media users, five mechanisms were commonly observed to differentiate high and low mental health scores across several mental health outcomes. Both adolescents and young adults with poorer mental health experienced the following on social media: 1) worrying about being judged for social media posts, 2) comparing oneself to others on social media, 3) social media interfering with sleep, and 4) receiving unwanted contact or content of a sexual nature. Additionally, young adults who endorsed having a positive support network on social media to a lower extent had poorer mental health than young adults with greater endorsement of such support.

Interestingly, with the exception of having a positive support from network on social media, the other mechanisms identified here as commonly related to mental health outcomes were not ones that were endorsed to a high extent for a majority of participants (see Sections 4.2.3.1 and 4.2.3.2). This suggests that although these experiences are not common among young people, when they are experienced, they are important predictors for mental health.

Other mechanisms were also identified as important for individual mental health outcomes, as shown in schematics of outcome from the decision tree analysis for adolescents for eating disorders and for young adults for wellbeing in Figure 5.10 and Figure 5.11, respectively. In this example for adolescents, the mean score for eating disorders for the overall sample was 12. For

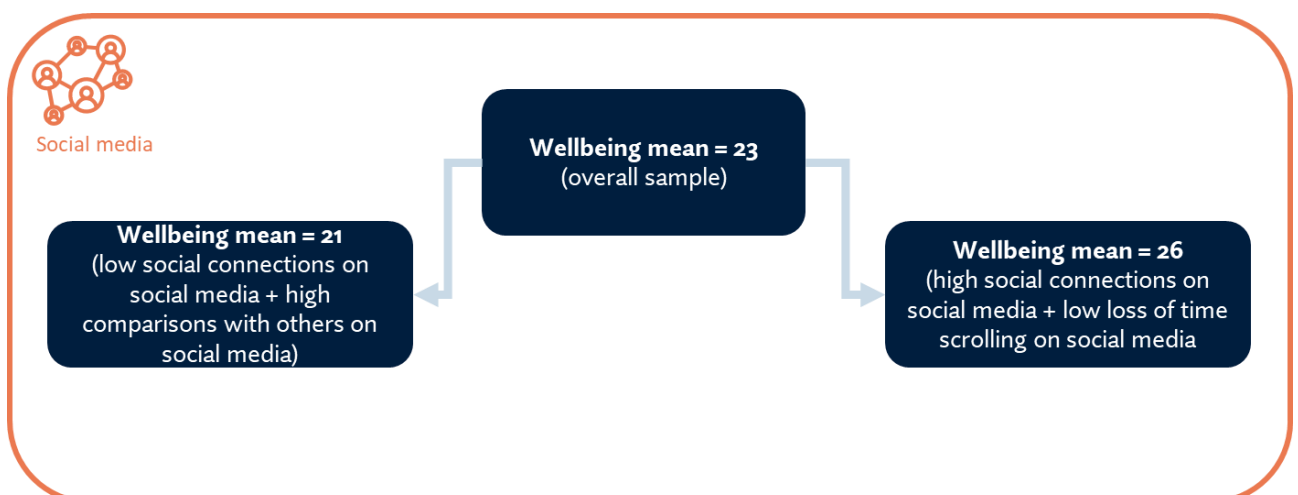
those who identified strongly as comparing themselves with others on social media, their eating disorder mean score was 16. This was significantly different from the eating disorder mean score of 8.2 for those who did not tend to compare themselves with others on social media and did not worry about being judged by others for their social media posts.

Figure 5.10 Schematic of decision tree analysis for social media mechanisms related to low and high scores for eating disorders among adolescents



Examining wellbeing among adults, as shown in Figure 5.11, the mean wellbeing score for the overall sample was 23. For those who identified themselves as having high social connections on social media and did not experience loss of time scrolling on social media, their mean score for wellbeing was 26. This was significantly higher than the mean wellbeing score of 21 for those who had low social connections on social media and identified strongly as comparing themselves with others on social media.

Figure 5.11 Schematic of decision tree analysis for social media mechanisms related to low and high scores for wellbeing among adults

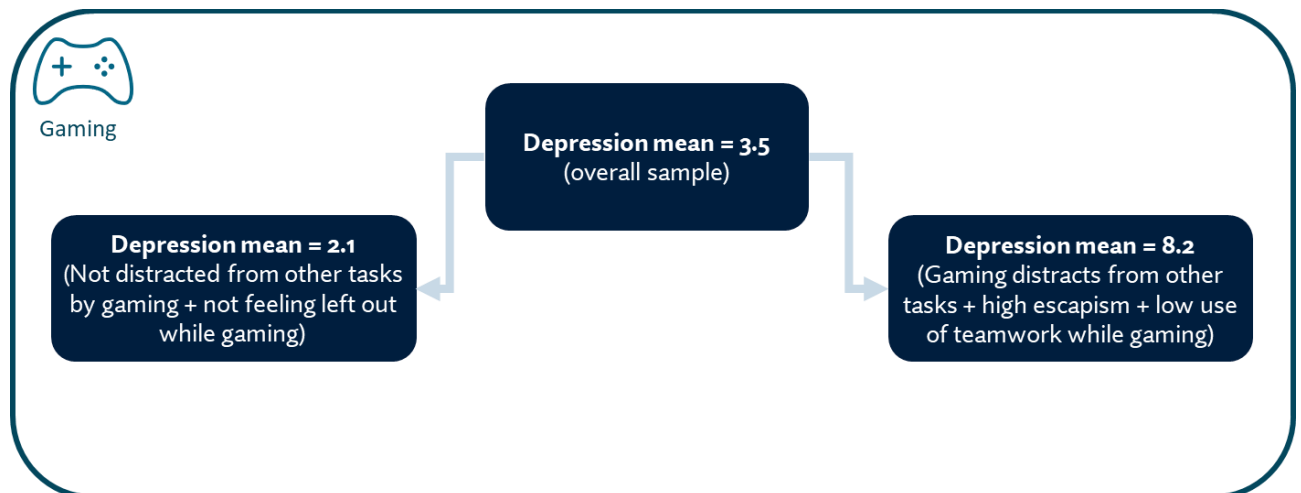


Gaming

Among participants who engaged in gaming, five mechanisms were also commonly observed to differentiate high from low scores across several mental health variables. For all participant groups in the DigiT survey, poorer mental health was commonly observed to occur among those who perceived that gaming distracts them from doing other things in their life. Among both adolescents and young adults, having been bullied while gaming was associated with poorer mental health outcomes. For children specifically, experiencing the following while gaming differentiated better mental health from poorer mental health: 1) learning new skills through gaming, and 2) using teamwork when gaming with others. In addition, being upset when they cannot spend time gaming was associated with poorer mental health for children.

Figure 5.12 shows an example schematic of the decision tree analysis for the combined associations between gaming mechanisms and depression for children. The mean depression score for the overall sample of children was 3.5. Among children for whom gaming distracts them from other tasks and offers them an escape from their life and do not tend to use teamwork when gaming with others, their mean depression score was 8.2. This was significantly higher than the mean depression score of 2.1 for children who were not distracted from other tasks while gaming and did not feel left out or ignored while gaming.

Figure 5.12 Schematic of decision tree analysis for gaming mechanisms related to low and high scores for depression among children



Social Media and Gaming

Among all mechanisms, feeling left out and escapism were the mechanisms most commonly observed to distinguish low from high scores on mental health outcomes across social media and gaming. These were feeling left out and escapism. For children, adolescents, and young adults, those who felt left out or ignored when using social media/gaming and who used social media/gaming as an escape from life had significantly poorer mental health than participants who did not endorse these mechanisms. An example of the ways in which these mechanisms differentiate scores for mental health variables is described above for children and gaming.

Generative Artificial Intelligence

Decision tree analyses examining the combination of mechanisms underlying generative AI use associated with mental health were conducted only with the young adult group. Four mechanisms were assessed, and one mechanism was found to commonly differentiate low from high scores for mental health variables. This was using generative AI to access important information and resources, whereby a greater tendency to do this was associated with better mental health.

Summary of the Association of the Combination of Mechanisms with Mental Health

Overall, the decision tree analyses suggest that combinations of mechanisms underlying positive and negative experiences of social media, gaming, and artificial intelligence (AI) may be particularly important for experiences of poor and good mental health among children, adolescents, and young adults. Moreover, some mechanisms, such as using digital technology to escape from life and feeling left out or ignored while using digital technology were consistently observed to be associated with mental health outcomes. These findings suggest that in some instances, negative and positive experiences may aggregate to amplify the relationship between digital technology use and mental health, whereas in other instances, the effects of negative and positive experiences may cancel one another out such that a relationship between digital technology use and mental health cannot be observed through a simple correlation. Full details of the identification of the combination of mechanisms that differentiate low from high mental health scores can be found in Chapter 4 of the Technical Report.

5.4 Chapter Summary

This chapter examines the relationship between digital technology use and mental health in children and young people, drawing on three existing Australian longitudinal datasets and a contemporary cross-sectional survey, as well as existing Australian and international literature of prospective data. Overall, the relationship is bidirectional and inconsistent. Bidirectional relationships revealed that where time spent on digital technology predicts subsequent mental health, the valence of the effect is negative, that is, higher digital technology use is found to predict increased poor mental health at a later timepoint. Similarly, where mental health predicts later technology use, this is typically that poorer mental health predicts increased technology use. Moreover, findings from Australian datasets revealed that mental health symptoms more reliably predict later technology use than the reverse.

Inconsistency in the relationship between digital technology use and mental health reflects that many of the examined relationships revealed null findings, that is, neither digital technology nor mental health predicted later change in the opposing variables. Thus, screen time appears to show little association with mental health, although when effects are observed, they consistently show that greater technology use predicts poorer mental health. Similarly, the reverse direction effects, when apparent, show that poorer mental health predicts higher use of digital technology. Longitudinal analyses suggest that the type of platform used has greater relevance for the relationship with mental health than screen time. Social media use most consistently predicted increased depressive and distress symptoms, with appearance-focused behaviours and platforms such as Instagram and Snapchat particularly implicated among adolescents. Effects varied substantially by subgroups of our overall samples, suggesting varying

vulnerability or responsiveness to digital technology - including age, gender diversity, sexual identity, neurodivergence, and exposure to bullying or discrimination.

Cross-sectional findings reinforce these observations and suggest that the type of activities undertaken on digital technology and the experiences of use matter more than screen time. Certain activities such as public forms of engagement with digital technology, use of appearance-altering features, and engaging with algorithm-delivered content rather than content from known people were more strongly related to mental health than other activities. Underlying mechanisms that reflect the positive and negative user experiences may be particularly important. Negative experiences such as feeling left out, escapism, distraction, social comparison, sleep disruption, and unwanted sexual contact were consistently linked to poorer mental health, while positive mechanisms such as identity acceptance, social support, and meaningful connection were linked to better outcomes. However, these were not consistent across subgroups with distinct patterns emerging according to gender diversity, LGBTQA+ identity, neurodivergence, and age.

Ultimately, it appears that the nature of the experience with digital technology may explain links between use and mental health for children and young people. The findings from this chapter indicate that the relationship between digital technology and mental health is highly contextual, shaped by who is using technology, what they do on it, and how they experience that use. In the next chapter, we explore existing legislative and policy approaches that aim to regulate digital technology use and support the mental health of children and young people and consider how these may translate the insights derived here into action.

6. Legislative and Policy Review

CHAPTER 6

KEY POINTS

Regulatory approaches

- 01 Content moderation dominates; design-level regulation is emerging**
 All jurisdictions rely primarily on regulating *what* is posted. UK "safety by design" duties, EU-style systemic risk assessments, and Australian proposals to address "dark patterns" signal a shift toward regulating *how* platforms are designed, reflecting recognition that mental health harms stem as much from platform architecture as from content.
- 02 Age-based restrictions are politically popular but contested**
 Australia is the first to ban under-16s from social media; the UK mandates age assurance for high-risk content; effectiveness, privacy, proportionality, and exclusion (from beneficial spaces) concerns remain unresolved.
- 03 International shift toward platform responsibility**
 Growing convergence in Australia and internationally on placing responsibility for children's online safety on platforms, not users or parents. The UK leads with its statutory duty-of-care model; Australia is moving in the same direction via proposed duty-of-care reforms; Canada's equivalent bill lapsed; New Zealand remains reactive and reliant on voluntary codes.
- 04 Mental health is addressed mostly indirectly**
 Laws target specific harm (bullying, exploitation, self-harm content) rather than mental health directly. The UK framework is the most explicit in linking platform regulation to children's mental health; Australia's proposed reforms would add mental health, self-harm/suicide, and disordered eating as explicit harm categories.
- 05 Evidence base for effectiveness is limited and weak**
 Few studies have directly evaluated such laws, focusing on compliance and usage rather than mental health outcomes. AI moderation lacks sensitivity, age verification is easily circumvented, and school phone-ban findings are inconsistent.

6.1 Chapter Overview and Purpose

This chapter presents a comparative analysis of how Australia and three comparable jurisdictions, the United Kingdom (UK), Canada, and New Zealand,⁵ use law and policy in efforts to maximise the benefits and minimise the harms of digital technology use on the mental health of children and young people. Novel approaches from other jurisdictions are also briefly noted.

The role of this chapter is to provide a clear, comparative account of the current legal and policy landscape for the regulation of digital technologies in Australia and other countries. In this chapter, we limit the focus to government-led regulatory responses that play a direct role in regulating children and young people's engagement with digital technologies, especially where those responses are intended to protect mental health and wellbeing either directly, or indirectly as a result of addressing other concrete categories of harm (e.g., cyberbullying). It is recognised that risk arises when a child engages with or is exposed to potentially harmful content, experiences or is targeted by potentially harmful contact, witnesses, participants in, or is a victim of potentially harmful conduct, or is party to or exploited by a potentially harmful contract (CO:RE, n.d.). Mental health risk can result from any of these types of harm.

In line with the broader goals of this report, we seek to explore government responses that promote benefits and prevent harms to mental health but recognise that law and policy often focus more on preventing harm than actively promoting benefits. Our comparison also briefly touches on ongoing proposals and evaluations of current frameworks, including shifts towards duty-of-care models and controversies surrounding the effectiveness and privacy implications of age verification technologies.

Findings from this review will be considered alongside outcomes from studies presented earlier in this report. In particular, we identify areas of need for legislation that are not presently accounted for in the current Australian approach. This will contribute to the foundation for policy-related recommendations made in Chapter 7.

To address the aim of this review, we explore:

- The types of action engaged in by government in the Australian context.
- The ways in which the Australian approaches are similar to or different from approaches of other comparable jurisdictions.
- The outcomes, including unintended consequences, of implementation of the legislative and policy responses.

6.2 Scope of Legislative and Policy Responses under Review

The chapter outlines and compares major laws, policies, and regulatory frameworks (up to mid-June 2025) that shape how digital platforms operate, how children access online services, products, and platforms, and how harms are addressed.

The review appraises laws and policies that are commonly applied across jurisdictions and that have promise in providing the strongest levels of protections for children and young people. To

⁵ See the Methods chapter in this report and the Technical Report, Chapter 5 for an elaborated justification of choice of comparator jurisdictions.

determine the approaches that would be in scope for in-depth comparison across jurisdictions, we initially examined major government inquiries into children and young people's use of digital technology (e.g. Australian Competition and Consumer Commission, 2025); Fraser, 2024; Woodhouse, 2025). Therein, we identified three main areas of government action as in scope for review: 1) platform regulation including content moderation; 2) age-based verification and restriction, and 3) design-focused or systems regulation.

Platform regulation refers to the laws, standards, and codes that place obligations on digital platforms. Content moderation falls within this domain and refers to requirements to monitor, and remove, restrict, and disrupt access to defined types of harmful content. In addition to duties to moderate content, regulations also place obligations on platforms to assess risks to children, provide reporting tools, or meet transparency requirements.

Age-based restrictions and prohibitions are measures that restrict access to platforms, services, technologies, or content based on age. The aim is usually to protect children and young people from harmful or inappropriate material (such as pornography, gambling, or addictive design features) or to comply with age-based restrictions in consumer or child-safety law. These include social media bans, age verification laws or rules requiring digital platforms, websites, or online services to check and confirm the age of their users before granting access to certain content, features, or services, or location-based restrictions (such as phone bans in schools).

A less common focus of governments is what we refer to as design or systems regulation. This approach has various names, such as 'functionality or feature regulation', and describes interventions restricting or redesigning specific features (like push notifications or algorithms that maximise engagement). An Australian proposal, for example, has recommended steps to regulate 'dark patterns'; that is, 'manipulative' or 'persuasive' design features that prompt children and young people into harmful or addictive engagement (Online Safety Act [Cth] Review, p53). Design or systems regulation amounts to a shift away from regulating speech or content alone towards regulating the infrastructure of interaction that shapes users' online experiences and is included in this review as it shows promise and appears in prominent law reform proposals.

In short, content moderation targets what is posted; age-verification mechanisms regulate who may access particular content, features, technologies, or services; and design or systems regulation addresses how platforms are built and operate, shaping the infrastructure of online interaction.

Governments seek to achieve policy aims in two main ways: 1) *placing duties and compliance expectations on industry actors* (described above) and 2) *empowering regulators to take action*. Independent regulatory bodies may be empowered to investigate platform actions, enforce regulations to compel change, and impose penalties for breaches. These diverse areas of government action are implemented through institutional mechanisms, typically regulatory and statutory bodies, such as online safety or communications regulators, which are empowered with roles in oversight, standard-setting, compliance, complaints handling, and public education. Policy responses may be categorised as sitting on a spectrum of 'soft' to 'hard' regulation depending on the level of authoritative force they have (Blomqvist, 2022; Hagemann et al., 2018).

'Soft' approaches include education, guidance, voluntary codes, and information campaigns.

'Hard' approaches include enforceable legal duties, penalties, mandatory age restrictions, and content takedown powers.

6.3 Regulatory Approaches used in Australia and Internationally

This section presents Australian legislation and policies in comparison with approaches of other relevant jurisdictions. Table 6.1 compares regulatory frameworks and models that outline which bodies have responsibility and enforcement authority, and relevant compliance mechanisms.

The scope of regulation compares the technologies covered, the ways in which harmful content is defined, and mental health outcomes under consideration. The third broad area of comparison is the ways in which access to platforms and exposure to content is controlled, considering key mechanisms such as age- and place-based restrictions or verifications. Finally, future directions and an overall summary are presented.

Table 6.1. *International Comparison of Online Safety Legislation and Policy Approaches across Australia, United Kingdom, Canada, and New Zealand*

Topic / Approach	Australia	United Kingdom	Canada	New Zealand
Key Legislation / Framework	<i>Online Safety Act 2021</i> (Cth), amended by <i>Online Safety Amendment (Social Media Minimum Age) Act 2024</i> . Co-regulatory model overseen by the eSafety Commissioner.	<i>Online Safety Act 2023</i> (UK). Commenced 26 October 2023. Regulatory functions conferred on 'Ofcom' (Office of Communications).	No comprehensive cross-platform online safety regime. Relevant elements include <i>Broadcasting Act 1991</i> (largely excludes social media), mandatory internet service provider reporting obligations (2011), and <i>Online News Act 2023</i> .	No dedicated online safety law. Relevant legislation includes <i>Harmful Digital Communications Act 2015</i> (NZ). Aotearoa NZ Code of Practice for Online Safety and Harms is voluntary. ⁶
Regulatory Model	Co-regulatory: platforms must comply with legal obligations and regulator directions; industry sectors develop codes; regulator (the eSafety Commissioner) can impose enforceable standards where codes are inadequate.	Statutory duty-of-care model: regulated services must identify, mitigate and manage risks of illegal content and content harmful to children; services must be safe by design, transparent and accountable, and protect users' rights to freedom of expression and privacy. Ofcom has broad enforcement powers.	Fragmented and sector-specific. No unified regulatory model. Bill C-63 (2024) proposed a UK-style duty-of-care model but lapsed. Canada is in a transitional/unsettled state regarding reform in this area.	Light-touch, reactive. Relies on post-hoc remedies, voluntary codes, and general media regulation. No proactive platform duties. Proposed co-regulatory reforms were abandoned in 2024.

⁶ Social media platforms or online intermediaries are not directly regulated; classification schemes and voluntary codes are drawn upon to support children and young people's digital safety.

Topic / Approach	Australia	United Kingdom	Canada	New Zealand
Duties / Compliance Model	Mix of enforceable and non-enforceable mechanisms: takedown/removal (complaint- or regulator-triggered), registered industry codes (written by industry), regulator-set industry standards (written by the regulator), and 'basic online safety expectations' ⁷ (transparency reporting, user complaints, child safety risk assessments, safer defaults, best-interests-of-child approach).	Statutory safety duties (safe by design, transparent, accountable). Services must assess risks and take proportionate measures. Higher standards for children. Transparency and record-keeping obligations for both services and Ofcom.	No general platform compliance model currently. Mandatory internet service provider reporting for child sexual abuse material. Bill C-63 proposed digital safety plans, reporting, and a Digital Safety Commission; not enacted.	Complaints and takedown processes under Harmful Digital Communications Act 2015. Voluntary industry code (Aotearoa NZ Code of Practice). No proactive systemic obligations on platforms.
Scope: Services Covered	Broad: social media services, direct messaging, multiplayer gaming, content delivery/access, search engines, app stores, hosting services, and some equipment/service providers.	Regulated internet services generally; heightened obligations for services likely to be accessed by children (i.e. those that can be accessed by children and attract significant child users).	<i>Broadcasting Act</i> covers broadcast media but largely excludes social media. Bill C-63 would have imposed duties on large social media services, but did not pass.	<i>Harmful Digital Communications Act 2015</i> covers specific online behaviours (harassment, threats, non-consensual intimate images). No broad platform-level regulation.

⁷ In consideration of children's safety, these responsibilities set expectations for required steps to protect users and reduce children's exposure to harmful content. These enable reporting and complaints by users and set expectations for responses to regulator requests and investigations. Compliance is incentivised through enforceable obligations to provide transparency reports to the eSafety Commissioner on how expectations are being met.

Topic / Approach	Australia	United Kingdom	Canada	New Zealand
Harmful Content Categories	Cyberbullying (especially targeting children), non-consensual intimate images, abhorrent violent material, and classification-restricted material (including pornographic/high-impact adult content). Instruction/promotion of self-harm and disordered eating historically absent but now being added under proposed reforms.	Expressly includes content promoting suicide/self-harm, eating disorders, harmful substance use, depression, and body/appearance stigma. Suicide/self-harm and eating disorder content are 'primary priorities'. ⁸	Bill C-63 proposed to cover suicide/eating-disorder promotion, bullying, hate speech, violent extremism, non-consensual intimate images, and child sexual content. Not enacted. Current law focuses on criminal content (especially child sexual exploitation material).	Harmful Digital Communications Act addresses harassment, threats, and non-consensual intimate image sharing. No systematic framework for mental-health-relevant content harms (e.g. self-harm, eating disorders).
Mental Health and Wellbeing Focus	Historically limited. Strong emphasis on content moderation. Proposed reforms (OSA (Cth) Review, 2024) recommend adding harms to mental health and wellbeing, self-harm/suicide promotion, and disordered eating as explicit harm categories.	Most explicit of the jurisdictions reviewed. Key harmful content categories are directly linked to mental health (suicide/self-harm, eating disorders, body image, depression). Framework explicitly links platform regulation to children's mental health and wellbeing.	Bill C-63 would have explicitly covered protection of 'children's physical and mental health'. Not enacted. Existing law does not systematically address mental health risks from platform design or content; focuses instead on criminal content (especially child exploitation material) and competition issues.	Not systematically addressed. Current law does not engage with systemic risks to children's mental health from platform design, algorithms, or content exposure.

⁸ Harmful substance and cyberbullying are 'priorities'; depression and body stigma are 'non-designated' harms.

Topic / Approach	Australia	United Kingdom	Canada	New Zealand
Age Differentiation	Many rules applied universally; child-specific provisions added. Specific measures include: stronger cyberbullying powers where a child is targeted; obligations and mechanisms to keep children away from restricted material; social media account ban for under-16s (separate provision).	All services must conduct children's access assessments. Services likely accessed by children must also conduct children's risk assessments and take proportionate safety measures. Different age groups within childhood explicitly considered. Proportionate measures must be transparent, consistently applied, and taken across all areas of the service.	No general age-differentiated platform obligations in current law.	No age-differentiated platform obligations.
Age-Based Access Restrictions	Social media services prohibited from allowing users under 16 to hold accounts (<i>Online Safety Amendment (Social Media Minimum Age) Act 2024</i>). Australia is the first jurisdiction to legislate a social media age ban.	No general social media age ban. Age verification or estimation required for a service to conclude it cannot be accessed by children. ⁹ Ofcom advises that services without highly effective age assurance are in scope of children's safety duties.	No enacted age-based social media restrictions.	No enacted age-based restrictions. Members' Bill (2025) proposes prohibiting social media for under-16s (modelled on Australia), but lacks Coalition support and has not progressed.

⁹ Services that are not likely to be accessed by children must review their status by conducting children's access assessments annually and upon relevant changes to the service or its use by children or evidence of reduced effectiveness of the age verification or estimation used.

Topic / Approach	Australia	United Kingdom	Canada	New Zealand
Age Verification / Estimation	Implicit in the under-16 social media account ban (platforms must verify/estimate age to comply). The OSA (Cth) does not prescribe a specific age-assurance technology.	Age verification or estimation is required for a service to determine it cannot be accessed by children. It is an expressly permitted (but not mandatory) proportionate measure for user-to-user services that are likely accessed by children.	Bill S-209 proposed mandatory age-verification or estimation for online pornographic content, with offences for making content available to young people without prescribed measures. Not enacted.	No age-verification or estimation requirements in current law.
Location Restrictions (Schools / Physical Settings)	Not addressed in the OSA (Cth). State-level policies restrict mobile phone use in schools, but no national legislative framework.	February 2024: Department of Education issued non-statutory guidance recommending schools in England prohibit mobile phone use during the school day. Flexible implementation by schools; no formal monitoring programme yet established despite 2024 recommendations (House of Commons Education Committee) to do so.	No national framework. Some provincial policies on mobile phone use in schools exist.	April 2024: State and state-integrated schools required to have a policy prohibiting mobile phone use in schools.
Reform Direction	OSA (Cth) Review (October 2024) proposed 67 changes - shifting from content-category approach to a broad, singular	Ongoing implementation and debate. Discussions include: raising digital consent age from 13 to 16; parental access rights	Bill C-63 (2024) proposed comprehensive UK-style reforms to promote online safety and protect children's	Safer Online Services and Media Platforms review (2021–2024) proposed a co-regulatory framework

Topic / Approach	Australia	United Kingdom	Canada	New Zealand
	duty-of-care model ¹⁰ (i.e., systems-based); expanded harm categories (mental health, self-harm/suicide, disordered eating); alignment with UK/EU approaches; and overarching approach to capture issues like dark patterns ¹¹ otherwise missed by a specific duty approach.	to children's accounts; privacy risks of age-verification; over-removal of lawful content. Debates inform active implementation phase of Online Safety Act 2023 (UK).	physical and mental health but lapsed. Narrower Bill C-412 (2024) focused on children's digital safety via court-based remedies. No settled reform pathway. Policy direction remains contested.	modelled on Australia; abandoned April 2024. New Parliamentary Inquiry into online harms to young people commenced 2025. No legislative model has yet emerged.
Overall Regulatory Position	Active and evolving. Established national regulator (the eSafety Commissioner). Landmark under-16 social media ban enacted. Statutory review proposes shift to duty-of-care model. Moving towards stronger, more integrated platform governance.	Comprehensive and leading. Duty-of-care model in force. Strongest explicit linkage to children's mental health. Age assurance requirements operationalised. Active regulatory implementation and public debate underway.	Transitional and unsettled. Existing law limited to criminal content and sector-specific regulation. Proposed comprehensive reforms lapsed. Canada sits between older content-specific approaches and an unimplemented integrated platform-governance model.	Cautious and comparatively light-touch. Sits at the softer end of the regulatory spectrum. Reform efforts abandoned; new inquiry underway. Limited direct engagement with systemic risks to children's mental health and wellbeing.

Note. See the Technical Report, Chapter 5, for full reference to legislative and policy documents from which specific regulatory approaches are drawn. A brief bibliography is provided in Appendix B of this report

¹⁰ Underpinned by a list of major harms to young people including to mental health, and instruction or promotion of harmful practices, i.e., self-harm/suicide and disordered eating.

¹¹ Dark patterns are design features in digital services that deliberately steer or pressure users into behaviours they might not otherwise choose, such as excessive use, data sharing or risky engagement, in ways that can contribute to online harms.

6.3.1 Notable approaches elsewhere

Several jurisdictions illustrate alternative or more experimental approaches. The European Union Digital Services Act introduces a systemic risk-based model, including risks to children's wellbeing. In the United States, state-based laws focus on age-appropriate design and limiting addictive features. France's mandatory, privacy-preserving age verification for pornography sites represents the strongest national age-assurance regime currently in force. Similarly, in China, a strict 'minor mode' regime mandates device-level restrictions and daily screen time caps for children. Notably, a very recently proposed new law on Artificial Intelligence (AI) anthropomorphism, titled 'Interim Measures for the Administration of Humanized Interactive Services Based on AI', has a provision requiring 'minor mode' features when services are provided to minors, which includes parental consent (Office of the Central Cyberspace Affairs Commission, 2025).

These examples demonstrate the wide spectrum of regulatory intensity, from light-touch guidance to highly interventionist controls.

6.4 Summary and Comparative Insights

Drawing together the national analyses of regulations from Australia, UK, Canada, and New Zealand (see Table 6.1), alongside notable approaches elsewhere, we observed a set of reasonably consistent patterns across jurisdictions in how governments respond to concerns about possible impacts of engagement with digital technologies on the mental health of children and young people.

Shifting responsibility to platforms

Across jurisdictions, there is growing convergence for the idea that responsibility for children's online safety should rest primarily with platform providers rather than individual users or parents alone. The UK has the most developed expression of this approach, embedding detailed statutory duties, risk assessments and transparency obligations. Australia is moving towards this through proposed duty-of-care reforms, and in its age-verification scheme, while Canada has articulated but not implemented a comparable model. New Zealand, by contrast, remains reliant on complaints-based remedies and voluntary codes. The result is a spectrum from strong, enforceable platform duties (UK) to largely reactive and voluntary arrangements (New Zealand).

Importance of regulatory capacity

Relatedly, the review highlights the central role of institutional design and regulatory capacity. Jurisdictions with well-resourced, specialist regulators (such as Australia's eSafety Commissioner and the UK's Ofcom) have capacity to combine standard-setting, enforcement, complaints handling, and public education in more integrated ways than jurisdictions relying primarily on industry self-regulation or general legal remedies.

Predominant focus on harm mitigation rather than benefit promotion

Most legal and policy interventions focus on mitigating harms – particularly exposure to harmful content, cyberbullying, and sexual exploitation – rather than actively promoting positive digital experiences. Benefits such as connection, creativity, learning and support are often acknowledged in policy rhetoric – and were observed in data in this report whereby use of some

digital technologies predicted subsequent improvement in mental health (see section 5.2.2) and users cited these benefits being derived from gaming, artificial intelligence, and social media (see section 5.3.3.2 in this report) - they are rarely explicitly addressed in legislation. Where benefit promotion does occur, it is more commonly pursued through education, media literacy and guidance rather than enforceable legal duties, though there may be ways to incentivise platform providers being optimised to bring about such benefits.

Content moderation remains dominant, but system-level regulation is emerging

Content moderation is the dominant regulatory strategy across all jurisdictions. All jurisdictions examined rely, to varying degrees, on laws and regulatory frameworks that seek to limit children's exposure to harmful content or interactions, such as cyberbullying, sexual exploitation material, and, increasingly, content promoting self-injury and/or eating disorders. Our analyses demonstrating the negative effects of such exposure (see section 5.2.1.1 above) would reinforce the ongoing need for such approaches. However, there is substantial variation in how harmful content is defined (i.e., mental health relevant harms are explicitly included by Australian and UK approaches but not specified in New Zealand approaches), which services are regulated (i.e., online services including social media and messaging addressed in specific legislation in Australia and the UK; those services are touched on in general broadcast media legislation in Canada and New Zealand), in what circumstances 'harder restrictions apply', and whether responsibility is placed primarily on platform providers or on regulators with direct intervention powers.

Additionally, there is increasing recognition of the limits of content moderation, particularly in addressing cumulative or design-driven harms. Emerging reforms – such as UK 'safety by design' duties, EU-style systemic risk assessments, and Australian proposals to address 'dark patterns' and digital duty of care requirements – signal a gradual shift towards system-level or design-focused regulation. This shift reflects concern that harms to mental health and wellbeing are shaped as much by platform architecture and incentives as by discrete items of content. A number of findings from our cross-sectional survey support this view; most notably, where we found that receiving content from algorithms is associated with poorer mental health in children and design features such as in-built beauty filters being related to poor mental health in adolescents (see sections 5.3.2.5 and 5.3.2.6 in this report).

Age-based restrictions are politically salient but contested

Age-based restrictions, including social media bans and age-verification requirements, are a recurring feature across jurisdictions and are receiving increasing government attention, particularly in relation to social media access and pornographic content.

At the time of writing, Australia has implemented the most robust of all such measures: a social media under-16 restriction. The UK mandates age assurance for specific high-risk content such as that relating to suicide, self-harm, and eating disorders. Canada and New Zealand are considering narrower measures (i.e., current legislation in Canada focuses primarily on criminal content such as child sexual exploitation material rather than systemic risks to mental health) or proposed similar measures (i.e., proposed New Zealand legislation for age-based restriction to social media). These approaches are politically attractive even as they raise unresolved concerns

about effectiveness, proportionality, and privacy, and potential for unintended consequences (e.g., the exclusion of children from beneficial online spaces). Those seeking to address such concerns will follow the outcomes of Australia's approach closely. Evidence of the impact of these approaches on mental health outcomes remains limited, though the Australian scheme operates on an implicit assumption that delaying access to social media will be beneficial to young people's mental health.

Design-focused or systems-based regulation is less developed

Regulation to restrict or compel redesign of specific features of digital technology are less well developed across all jurisdictions. However, this is emerging as a significant area of reform interest. Recent law reform proposals, particularly in Australia, the UK, and the EU, indicate a potential shift towards regulating platform design features, risk management processes, and underlying systems that shape user behaviour, rather than focusing solely on individual pieces of content. This approach, which is seen as more capable of addressing cumulative and structural harms, including those relevant to mental health and wellbeing, has been discussed and supported by civil bodies including Reset.Tech Australia, The Victorian Bar, and the Law Society of NSW (in the Law Council of Australia submission) (Statutory Review of the Online Safety Act (Review), Recommendation 4).

Mental health is addressed indirectly

Mental health and wellbeing are usually addressed in law and policy indirectly, through categories of harm and risk. In this manner, laws tend to focus on preventing specific harms – such as bullying, exploitation, or self-injury, or exposure to pro-eating disorder content – that are believed to affect children and young people's mental health. However, promoting mental wellbeing and preventing mental ill-health are increasingly forming part of the explicit rationale for legal and policy responses to regulating digital technologies for young people (House of Commons Education Committee, 2024, May 25, pp. 11-13; Parliament of Australia, 2024; paras. 3.120-3.202). Given the empirical evidence presented in this report linking a range of positive and negative experiences of digital technology use to mental health outcomes (see section 5.3.3 above), explicit attention to mental health as a potential outcome of digital technology engagement is warranted.

Limited evidence on outcomes and effectiveness

Across all jurisdictions, there is a notable lack of robust evaluation of whether laws and policies have indeed improved children and young people's mental health and wellbeing or meaningfully changed platform practices in that regard. Most regimes are new or still being implemented, and available evidence focuses more on *compliance activity* than outcomes. As a result, claims about effectiveness often rest on assumptions rather than demonstrated impacts.

Challenges and unintended consequences of regulation

Questions arise regarding the capacity of platforms to meet their obligations. Are their technology capabilities sufficient to meet a particular duty, such as age verification or estimation? Will platforms make the right decisions about content classification regarding harm and will restriction of content be appropriate? Similarly, questions regarding the capacity of regulators to make complex judgements about harm, so as to facilitate appropriate classification of content and sufficiently monitor platform behaviour have also been raised.

Several potential unintended consequences are also noted across jurisdictions, including concerns about over-removal of lawful content, reduced access to peer support or health information, privacy risks associated with age-verification technologies, and the disproportionate impact of restrictions on marginalised groups. The latter concern is borne out by findings from our empirical analyses for LGBTQA+ children and young people and for neurodivergent children and young people whereby digital technology use was frequently found to be linked to positive experiences for these groups relative to their non-LGBTQA+ and non-neurodivergent peers (see section 5.3.3.3 above). At the same time, some positive effects, such as improved platform transparency and greater institutional attention to child safety, are beginning to emerge.

6.5 Empirical Support for Law and Policy Changes

In this section we examined the extent to which the law and policy interventions have been evaluated in published empirical literature, and the focus of and outcomes from such evaluation. The rapid scoping review found that only four studies directly evaluated the impact of specific legislative or policy measures designed to improve children or young people's mental health in the context of digital technology use. These evaluated online gaming restrictions in South Korea and China ($n = 3$) and advertising restrictions in the UK ($n = 1$). The outcomes of these studies focused more so on compliance with the laws and impact on digital technology use rather than mental health outcomes. Overall, these revealed small changes in digital technology use but also problems with compliance, particularly for advertising restrictions. Sleep outcomes were not impacted in the one study in which this variable was examined.

In addition, 20 other studies were identified that did not directly evaluate specific laws, rather, these additional studies varied in their approach to evaluating regulatory measures including exploring the technical feasibility of mechanisms that legislation mandates (i.e., content moderation and age verification), impact of restricted use of technology in specific environments (e.g., schools or universities), and perceptions of general social media-related laws).

In regard to technical feasibility, while AI-driven content moderation can be efficient, it lacks sensitivity in differentiating harms from benign content. This lack of sensitivity is also exposed by observations of adaptations by online users in the way in which they present harmful content (e.g., lexical variants in pro-eating disorder content to evade moderation). Implementation of age verification was found to be ineffective, with platforms relying on low reliability methods such as self-declaration which are easily circumvented.

Bans on use of digital technology in schools and universities received the greatest attention in the literature and some papers assessed impacts on mental health and relevant experiences, with inconsistent findings. For example, one study found a reduction in distress following restrictions on use of mobile phones in schools, yet others found no effect of similar restrictions on mental health outcomes, bullying, academic engagement, or sense of belonging.

Overall, the evidence base for the effects of regulation of digital technology use on children and young people is limited and provides little conclusive evidence as to the outcomes of regulation. Moreover, evaluation fails to assess impact on mental health and instead relies on proxies such

as change in usage of digital technology as indicators of the effects of legislation and regulation change. Future efforts would benefit from multiple approaches to assess impact. Further detail from the scoping review can be found in the Technical Report, Chapter 5.

6.6 Chapter Summary

This Legislative and Policy Review shows that Australian and international governments are actively experimenting with different regulatory tools to shape children and young people's digital experiences. While approaches vary, there is a shared recognition that unregulated digital environments can pose risks to mental health and wellbeing, and that law and policy have a role to play in addressing those risks while preserving benefits.

Taken together, these findings suggest a gradual international shift away from narrow, content-based regulation as the sole, or main regulatory approach, towards inclusion of broader, system-level approaches that place greater responsibility on platform providers, supported by stronger regulatory oversight. The adoption of both approaches is seen as complementary to improving the safety of digital environments. At the same time, the evidence base for evaluating the effectiveness and any unintended consequences of these approaches is limited and uneven, which we address in the rapid review (for more detail, see the Technical Report, Chapter 5).

The comparative analysis provides a foundation for considering how Australian policy might evolve, informed by international experience, emerging evidence, and ongoing debates about rights, effectiveness, and proportionality. Taken together, the comparative analysis suggests a clear international trend towards stronger platform governance, but with substantial variation in regulatory aim, coherence and enforceability. Evidence gaps and unresolved tensions and possible trade-offs – between protection and participation, safety and privacy, harm mitigation and benefit promotion – remain central challenges for policymakers.

From an Australian perspective, the comparative review points towards a gradual shift from a predominantly content-based, reactive model towards clearer, system-level duties on platforms approach, supported by stronger expectations around risk assessment, design choices, and accountability. Accordingly, future Australian reform is likely to turn less on expanding takedown powers and more on clarifying enforceable platform duties, the scope of regulator oversight, and the evidentiary basis for design-focused interventions aimed at children and young people.

Australia is neither a global outlier nor a laggard. Its co-regulatory model, strong content-moderation powers, and well-resourced specialist regulator place it broadly in line with the UK and emerging EU approaches to platform governance. Australia has been proactive in some areas, particularly in establishing a dedicated online safety regulator with extensive enforcement powers and moving early on age-based restrictions. However, Australia is not a clear leader in system-level or design-focused regulation and its privacy reforms remain behind those of jurisdictions like the UK and EU. The comparative analysis suggests that the next phase of reform should involve convergence with international trends, particularly in clarifying enforceable platform duties such as the extent of duty-of-care that encompasses reasonable steps to prevent harm, strengthening risk-assessment and safety-by-design expectations, and embedding clearer mechanisms for accountability and review.

7. Summary of Findings and Implications

This research project generated a comprehensive evidence base on how children, adolescents, and young adults engage with digital technologies, the positive and negative implications of these experiences for mental health, and the policy and legislative approaches being used internationally to enhance benefits and reduce harms of digital technology for children, adolescents, and young adults.

Children and young people were engaged as active contributors in determining the scope of the project and the digital technologies, experiences, and mental health outcomes examined to ensure the research reflects their lived experiences, priorities, and perspectives. To strengthen understanding of directionality, mechanisms, and population differences, the project integrates findings across longitudinal, qualitative, cross-sectional, and policy analyses. In doing so, the project addresses important gaps in the existing evidence base, including limited understanding of digital technology engagement in childhood, the overreliance on cross-sectional research, and insufficient attention to positive digital experiences and outcomes.

Consistent with this approach, the recommendations presented throughout this chapter are informed by multiple forms of evidence and span interconnected thematic areas, reflecting the need for coordinated action across individual, social, educational, platform, and policy levels. The recommendations also recognise the importance of considering digital experiences within broader offline contexts and relationships, rather than viewing digital technology use in isolation. At the same time, important evidence gaps remain, particularly given the rapidly evolving nature of digital technologies, and several recommendations highlight priorities for future research and ongoing evaluation.

7.1 Digital Technology Use

The overall pattern of findings from this mixed-methods evaluation suggests that digital technology use is widespread across childhood, adolescence, and young adulthood, but that the types of technologies used vary by age, and the ways technologies are used, and the experiences associated with their use varies by both age and technology type. In short, use of digital technology by children and young people reflects both the content (i.e., the type of content/experiences/platform) and context (i.e., age). Smartphone and social media use increase markedly across adolescence, whereas children are likely to use tablets and engage with gaming and YouTube. Gaming tends to peak in mid-adolescence and then declines in young adulthood, while social media use increases steadily with age and becomes almost universal by late adolescence.

Across technologies, there was evidence of developmental shifts in the content and activities young people engaged with. Children tended to use more entertainment, gaming, educational content, and communication with known others, whereas adolescents and young adults increasingly engaged with social media, messaging, AI tools, internet forums, and algorithmically recommended content. Young adults appeared more likely than children to receive content through recommender systems rather than from people they know and follow.

The findings also suggest that children and young people use digital technologies in largely passive or non-creative ways. Across social media, viewing content, liking/reacting, and messaging were much more common than actively posting or sharing content publicly. Commenting was also uncommon across age groups. This indicates that much of young people's digital engagement involves consuming and reacting to content rather than actively creating content.

Across gaming, social media, and AI, positive experiences were more commonly endorsed than negative experiences. Participants frequently described technologies as entertaining, relaxing, socially connecting, and helpful for accessing information or learning. Social media was particularly valued for entertainment, social connection, and exposure to diverse ideas, while gaming was associated with relaxation, stress relief, and connection with others. AI was used less frequently but was still perceived by some young people as helpful for learning, skill development, and companionship.

At the same time, there were recurring concerns across technologies. Social media and gaming were both commonly described as distracting, time consuming, and difficult to stop using. Adolescents and young adults, more than children, were exposed to negative or harmful content, including extreme opinions, hostile interactions, pornography, violent content, and material promoting thin-ideal body image. Negative interpersonal experiences online, such as being excluded or insulted, or being contacted by strangers, were also relatively common among older adolescents and young adults. However, more severe harms, such as sexual coercion, non-consensual image sharing, and persistent bullying, were reported by only a small minority of participants as occurring frequently.

Overall, the findings point to a nuanced picture in which digital technologies play an important role in the everyday lives of children and young people. The data suggest that these technologies provide substantial opportunities for entertainment, connection, and support, but also expose some young people to harmful content, problematic use patterns, and negative social experiences. Importantly, the balance of risks and benefits appears to differ by age, technology type, and the way technologies are used.

7.2 Relationship between Digital Technology Use and Mental Health

Examination of the three Australian longitudinal datasets accessed and analysed for this report produced relatively congruent findings. Analyses revealed inconsistent effects of time spent on digital technologies on subsequent mental health outcomes. Generally, where effects were present, they were typically small and negative, such that digital technology use predicted poorer subsequent mental health, although some exceptions to the direction of effect were observed.

Several patterns emerged that can inform future research and recommendations for improving digital environments and experiences for users. Most notably, bidirectional relationships were evident between digital technology use and mental health, although these differed depending on the type of technology and aspect of mental health examined. That is, there was more evidence suggesting that poor mental health may drive increases in time spent on digital technology, specifically social media, than evidence for the reverse (i.e., that digital technology, including social media use, predicts later increases in mental health concerns). This provides

important context for cross-sectional research, in which findings of correlations between social media use and poor mental health are often interpreted as evidence for social media harm, when in fact such correlations may instead reflect that those with greater mental health concerns choose to spend more time on social media than to engage in other activities. Indeed, in our cross-sectional analyses we found consistent links between poorer mental health and use of a variety of digital technologies for ‘escaping from life’ and seeking relaxation when stressed.

The content and experiences available within digital platforms are highly diverse. More consistent patterns were observed here concerning analyses of links between specific digital platforms and mental health indicators, rather than those considering time spent on screens or social media, more generally. For example, cyclical patterns emerged between increasing digital technology use and deteriorating mental health when examining image-based platforms, such as Instagram and Snapchat, although the effects are small. Specifically, higher mental health concerns predicted increasing use of those image-based platforms, which in turn predicted increased mental health concerns. Mixed results were found for YouTube and video games, with use predicting better and worse mental health at different time points. These results highlight the importance of focusing on more granular experiences within digital technologies, which may afford both harms and benefits for mental health.

Few subgroup differences were observed in the patterns of relationships over time, according to sex, gender or sexual identity, and among those who reported experiences of discrimination and peer victimisation. However, females and those who experienced discrimination and victimisation were generally greater users of technology and reported more mental health concerns overall. Although not observed universally across different aspects of mental health, in the CATS dataset, effects over time tended to be stronger for females than for males.

Additionally, among adolescents who may be characterised as having some form of vulnerability – such as discrimination or victimisation – effects of social media on mental health were intensified relative to adolescents who were not considered to be vulnerable. The presence of effects also varied by mental health outcome. Furthermore, greater social, behavioural, and emotional difficulties were predictive of increased use of technology over time. However, effects were inconsistent across type of difficulty and type of digital technology use, and at some age transitions, lower difficulties predicted later increases in use of digital technologies.

Some age-related patterns emerged, suggesting potential windows of developmental sensitivity to negative impacts of digital technology use on mental health. These were observed in early adolescence whereby increased use of image-based platforms was associated with subsequent increased poor mental health and in mid-adolescence whereby use of a broader range of platforms (e.g., social media, YouTube, and video games) predicted later poorer mental health. However, these age effects were inconsistent across datasets, possibly reflecting differences in assessment of use of these platforms. Nevertheless, inconsistent effects should be interpreted with caution. Future research examining the specific activities young people engage in within these technologies may help specify consistency in developmental periods of risk and benefit.

Cross-sectional analyses of new data collected for this report from a contemporary, nationally representative sample of children, adolescents and young adults, provided insights into the different types of engagement and positive and negative experiences of digital technology use

that may contribute to mental health outcomes, or account for how and why mental health experiences might predict changes in subsequent digital technology use. Specific platforms, and behaviours and activities while using digital technology, were associated with positive and negative mental health more strongly than others. Similar to the diverse relationships between digital technology use and mental health across digital platforms observed in the longitudinal datasets, associations between digital technology use and mental health indicators in the cross-sectional data were platform dependent; with more negative associations observed for time spent on Snapchat, TikTok, and YouTube than other platforms. While messaging via digital technology was associated with positive mental health indicators for young adults, this was not observed for children and adolescents. In addition, we found that behaviours that users may view as fun (or at worst, as innocuous), such as using filter effects on photos, can be associated with poor mental health for many who use these features. The source of content – whether from known/followed accounts or as recommended via platform algorithms – also appeared to be relevant to mental health outcomes with algorithm-delivered content linked to displacement effects (such as sleep loss and distraction) and for children, content from this source was associated with poor mental health. Posting content on social media was cross-sectionally associated with several negative mental health indicators in the overall sample, although associations with positive mental health were observed for specific subgroups, including LGBTQA+ adolescents and female young adults.

We identified experiences that were universally associated with poor mental health. These included feeling left out, distraction from tasks, escapism, relaxation-driven use, social comparison, unwanted sexual content, and compulsive or time-consuming use patterns. Such experiences were considered universal due to consistent associations across age groups with a range of negative mental health indicators. On the other hand, having one's identity accepted while using digital technologies was consistently associated with positive mental health for all age groups, even if less consistently so across digital technology types.

Taken together, these findings highlight the high degree of complexity that characterises the relationship between digital technology use and mental health. We present evidence that the type of platform and the specific experiences that users have matter more than simply the time spent on digital technologies, and that some marginalised subgroups within the population may be at greater risk of ill-effects on mental health from social media use. This evidence underscores both potential harms and benefits, and indicates the need to disentangle the directions of effects over time and to consider the diverse content and experiences young people encounter within digital environments, to fully understand this complex relationship.

7.3 Legislative and Policy Responses

The legislation and policy review observed that much of the action taken by Australian and international legislators to maximise benefits and minimise harms of digital technology use on children and young people focuses on content moderation and increasingly also on restriction of access to digital spaces. These approaches attempt to remove harmful content from, or prevent access to, online environments. Data presented in Chapter 5 of this report suggests that there is some content and some experiences that may be universally harmful to children and young people, such as online bullying and exposure to unwanted sexual content. Content

moderation and restriction of access to spaces where such experiences are likely, therefore seems an appropriate response in those cases. However, in other instances, content that is aversive or harmful to one group of users may not be so for others. Thus, careful consideration of the application of content moderation and age restriction in the 'grey' areas when determining which content and which platforms are 'harmful' is required.

In addition, relying only on content moderation or restricting access does not address other issues associated with digital technology use. These issues can arise from the very design of the platforms and the features that the technology offers. This is particularly the case with persuasive or addictive design. For example, in our cross-sectional survey, we found that receiving content from algorithms was associated with poorer mental health in children and design features such as in-built beauty filters were related to poor mental health in adolescents (see sections 5.3.2.5 and 5.3.2.6 in this report). While design or systems regulation is needed and is gaining momentum, development of this approach is relatively recent. Strengthening this regulation alongside content moderation and access limits is therefore important to ensure regulation of the infrastructure of digital technology that shapes users' experiences.

Additionally, strong regulatory capacity is essential to ensure an integrated response to digital and online environments. Regulators must have sufficient capacity at all points along the continuum - from standard setting to enforcement - to support holistic and responsive approaches that move beyond reliance on industry self-regulation. Importantly, there must be strong consequences for non-compliance (e.g., substantive fines) for technology platforms to ensure the regulations are properly upheld. Further, well-funded independent evaluations of these policies for compliance and impact on mental health are critical to ensure they are effective and do not cause unintended harm.

7.4. Implications and Recommendations

The overarching theme to arise from this project is that of complexity. Patterns of digital technology use reflect variability across users, according to age and personal characteristics such as potential vulnerability or marginalisation. Digital technology usage also differs according to device, platform type, affordances, and low effort (e.g., browsing, liking) versus creative (e.g., posting, commenting) engagement. Consequently, the relationships between digital technology use and mental health outcomes are also complex, varying by user and across platforms. Complexity is also reflected in the potential for digital technology to predict subsequent mental health outcomes, for mental health to predict changes in the subsequent use of digital technologies, and moreover, in the potential for cyclical effects where patterns of relationship may be reinforced over time. Although relationships between digital technology use and mental health observed in this report typically reflect that higher technology use is associated with poorer mental health, as is often assumed, our data show that this is not always the case. For some users, on some platforms, and at some time points, digital technology and mental health are linked in positive ways. It is therefore essential that any recommendations arising from this report account for the multiple layers of complexity inherent to the question of the link between digital technology use and mental health outcomes.

Figure 7.1 demonstrates the ways in which these multiple layers inform principles that underpin our proposed recommendations. The *Core* principle addresses measurement and conceptualisation of use; the *Caution* principle addresses how cause and effect is interpreted; *Equity* addresses who is affected; *Platform* addresses the technological features and design settings that impact outcomes, and where responsibility sits for harm reduction; and *Systems* addresses where responses need to happen. These principles do not sit in isolation but intersect across different domains of action, that is, they inform actions at the policy and regulation, technology platform, and social, family, education, and mental health care levels. Guided by these intersecting principles, in the next section, we outline implications that arise from evidence presented in the earlier chapters of the report and the recommendations we pose in response to these implications. In addition, Appendix C provides a summary of evidence that informs each recommendation.

Figure 7.1 *Principles underpinning evidence-based recommendations*

Recommendation Principles

Core

Move beyond screen time as the primary measure – focus on the quality, context, type of content, and nature of engagement, not simply duration of use

Caution

Recognise bidirectional relationships: poor mental health often drives increased digital technology, not just the reverse. Reducing use alone will not address underlying distress

Equity

Tailor responses by age, gender, LGBTQA+ identity, and neurodivergence – universal approaches are insufficient for the diverse population of children and young people

Technology

Platform design, algorithms, and defaults are not neutral – features such as recommender systems, persuasive design, and appearance-altering tools shape mental health outcomes for children and young people; responsibility for harm reduction must sit with technology providers, not just individual users or families

Systems

Coordinate action across technology, school, family, community, mental health care, research, and policy levels simultaneously – siloed responses will be insufficient

7.4.1 From User Burden to Platform Accountability

Addictive or persuasive design features of digital technology were identified in the project consultation as among the top 5 priorities for inclusion in the research due to their potential to influence mental health. These include algorithm-delivered content, endless/infinite scroll, and

reward systems that are designed to maximise user engagement and retention. Our empirical findings showed that the experience of such features, including loss of time (i.e., scrolling social media, using an AI companion), being distracted from other tasks, compulsive checking, and escapism were linked to poorer mental health. Coupled with this, design features that retain users on platforms and deliver algorithmically derived content potentially intensify the likelihood that users will be exposed to harmful content, whereby such exposure was found to increase risk for later poor mental health. Taken together, these findings stress the need to shift responsibility for moderating use from just the individual user (and/or their parents) to placing responsibility on technology platforms to provide safer digital environments through a safety-by-design approach encompassed under a duty-of-care obligation that explicitly attends to mental health impacts of digital technology use. Further reinforcing this, the review of Australian and international legislative and policy responses underscored the need for regulatory controls to move from voluntary measures to mandatory rules and for sufficient capacity to be vested in regulators to set standards, enforce obligations, and impose consequences for non-compliance.

Recommendation 1: Mandate safety-by-design obligations - within a duty-of-care model that explicitly focuses on reducing any harm to mental health - that require technology providers to build safer environments in ways that shift safety responsibilities onto platforms not individuals.

Recommendation 2: Ensure regulators (e.g., the eSafety Commissioner) have sufficient powers¹² to set safety-by-design expectations, establish clear mechanisms for accountability and review, and impose enforceable standards.

7.4.2 Designing Safer Digital Environments

A key implication arising from the project is that content moderation alone is unlikely to be sufficient to address harms in digital environments. While evidence-informed content moderation approaches (i.e., regulation of digital content informed by empirical data) are important, particularly for identifying harmful or “grey area” content, the findings suggest that the design of digital platforms and technologies themselves may contribute to everyday harms, including compulsive engagement, distraction, and repeated exposure to potentially harmful material via recommender systems. These findings support the importance of “safety-by-design” approaches that place greater responsibility on technology providers to create safer digital environments from the outset, rather than relying primarily on users to manage risks themselves. This is particularly important given that children, young people, and parents may not always recognise harms associated with seemingly innocuous digital experiences or platform features. The findings also suggest that such approaches should extend to emerging technologies, including AI-enabled platforms and systems accessible to children and young people.

¹² This may include the need for regulatory powers to be coherent with and complement other relevant regulators domestically or internationally, who have intersecting legislative requirements or who may also be responsible for enforcing associated standards of practice (such as Office of the Australian Information Commissioner [OAIC]).

Recommendation 3: Improve implementation of evidence-informed content moderation (i.e., harmful content identification informed by empirical evidence) approaches, guided by relevant mental health, developmental, and digital technology experts and end users, to better identify and address harmful and “grey area” content across digital platforms, including emerging technologies and AI-enabled systems accessible to children and young people.

Recommendation 4: Introduce safety-by-design approaches that greatly reduce or even prohibit features encouraging compulsive or excessive engagement, increase transparency regarding algorithms, recommender systems, and platform design, and provide users with greater control over their digital experiences.

4.1: Algorithmic content should be specifically regulated to minimise amplification of delivery of extreme or harmful content and to limit recommender-system content exposure for children and adolescents. Redesign of these systems could be oriented to prioritise content from known and followed contacts.

4.2: Integrate friction and pause features as default design settings to interrupt compulsive use and prevent excessive engagement.

4.3: Platforms should be required to provide an evidence of harm assessment for design features prior to release, rather than waiting for accumulation of evidence of harm.

4.4: Require meaningful data transparency and access to platform data by regulators and researchers to support monitoring and evaluation of effects of digital technologies and their features on user behaviour and mental health. Require data transparency for users to ensure simple access to their own usage data (in interpretable format).

7.4.3 Preparing for Emerging Technologies

The findings also highlight the importance of proactively responding to rapidly evolving technologies and digital environments. Emerging technologies, including artificial intelligence, may introduce new risks, opportunities, and forms of engagement that are not yet well understood. Indeed, our findings signal that use of AI companion chatbots and poor mental health are linked but this requires further exploration. While the evidence base for AI impacts is burgeoning, there are enough concerns to warrant application of checks and balances now to ensure safe use of AI chatbot companions as a service. The rapid pace of technological change means that evidence gaps are likely to persist and evolve over time. Lessons from emergence and evolution of previous digital technologies suggest that there is value in considering the potential positive and negative effects of emerging technologies early, before harms become entrenched and difficult to address. Continued monitoring, longitudinal and experimental research, and adaptive policy approaches will therefore be essential for understanding the impacts of emerging technologies on children and young people’s mental health and wellbeing.

Recommendation 5: Establish ongoing monitoring and research into emerging technologies accessible to children and young people, including artificial intelligence, to better understand their potential positive and negative effects on mental health, and prioritise longitudinal, experimental, and other robust research designs to strengthen understanding of the causal mechanisms, experiences, and affordances through which these technologies may influence outcomes.

Recommendation 6: Extend child safety, platform accountability, and safety-by-design approaches to emerging technologies from the outset, rather than responding only after harms emerge.

Recommendation 7: Consideration should be given to regulating (and/or introducing checks and balances) AI chatbot companions as a service or therapeutic device to ensure safety, in light of potential for distress-driven engagement (i.e., AI companions used as quasi-therapeutic tools).

7.4.4 Moving Beyond Simplistic Conceptualisations of Digital Technology Use

The findings from this project highlight the complexity of the relationships between digital technology use and the mental health of children and young people. Overall, the evidence suggests that simplistic conceptualisations of digital technology use, particularly those focused primarily on time spent online, are insufficient for understanding how digital technologies may contribute to both positive and negative mental health outcomes. Rather, the effects of digital technology use appear to depend on the technologies and platforms being used, the activities undertaken, the content encountered, the social context in which engagement occurs, and the individual characteristics and vulnerabilities of users. Importantly, harms were evident across varying levels of use, suggesting that exposure to risk is not limited to heavy users alone. At the same time, young people consistently described a range of positive digital experiences, including social connection, entertainment, identity exploration, emotional support, creativity, and access to information and communities. These findings suggest that policy and intervention responses should move beyond narrow screen time approaches and instead focus on understanding and shaping the quality, context, and nature of digital engagement.

Recommendation 8: Move beyond simplistic screen time approaches in policy, education, public messaging, and research, that equate less time using technology to better mental health outcomes. Instead, focus on the nature, context, and mechanisms of digital engagement, including the platforms, features, and experiences that may independently or in combination contribute to positive and negative outcomes for children and young people.

Recommendation 9: Support the development of safer and more positive digital environments by not only reducing exposure to harms, but also promoting digital experiences that foster meaningful social connection, learning, creativity, identity development, genuine self-expression, and support acceptance of authentic self-identity.

7.4.5 Recognising Complexity and Bidirectional Relationships

The findings of this report also reinforce the importance of recognising the bidirectional and cyclical relationships between digital technology use and mental health. While some forms of digital engagement may contribute to poorer mental health outcomes for some young people, mental health difficulties may also shape how and why young people engage with digital technologies. For example, children and young people may use digital technologies to cope with stress, loneliness, boredom, or emotional distress. As such, digital technology use may sometimes reflect attempts to manage pre-existing difficulties rather than functioning solely as their cause. These considerations highlight the need for caution when interpreting correlational evidence and public discourse regarding digital technology and mental health, particularly where

causal conclusions are drawn from cross-sectional data. Failing to recognise the bidirectional nature of these relationships risks oversimplifying the issue and directing interventions toward reducing technology use alone, without addressing the broader factors driving harmful or distress-driven engagement. More broadly, improving children and young people's mental health and wellbeing may itself reduce problematic or harmful forms of digital engagement.

Recommendation 10: Interpret associations between digital technology use and mental health cautiously, such that associations from cross-sectional data are not exclusively relied on for decision making (i.e., in policy, education, public messaging, and intervention development).

Recommendation 11: Integrate digital technology considerations into broader youth mental health strategies and interventions, recognising that harmful (i.e., signalled by distraction from other activities, compulsive engagement, loss of time, sleep disruption) or distress-driven digital engagement may itself be a signal that a young person is struggling with their mental health. Responses should address underlying drivers of harmful engagement, such as loneliness, stress, emotional distress, and social disconnection, rather than focusing solely on reducing technology use.

Recommendation 12: Invest in offline social connection and recreation opportunities for children and young people to support multiple pathways for development of positive mental health. This should also include ensuring access to a range of viable, non-digital options for managing distress, rather than relying on technology as the primary means of coping.

Recommendation 13: Support access to connected online spaces for LGBTQA+ and neurodivergent children and young people, particularly where offline spaces may not be safe or supportive for these groups, and ensure they are co-designed with these groups to best meet their needs and are well utilised.

7.4.6 Supporting Young People with Diverse Identities and Across Developmental Stages

The links between digital technology experiences and mental health among LGBTQA+ and neurodivergent children and young people were unique. Although these links suggest some specific benefits from digital technology use, such as identity affirmation and access to diverse content, amplified negative impacts on mental health were also observed. Consequently, the digital environment and associated supports need to be curated to reflect unique needs of marginalised and potentially vulnerable groups. The project findings further demonstrate that digital technology use evolves across developmental stages. As children move into adolescence and young adulthood, digital engagement becomes increasingly social, interactive, and less mediated by parents and caregivers. These changes provide important opportunities for connection, identity development, learning, and self-expression, but also increase exposure to harmful content, social pressures, cyberbullying, social comparison, and other risks. These findings suggest that universal or one-size-fits-all responses to support appropriate digital technology use are unlikely to be sufficient. Instead, supports, education, and safeguards should reflect developmental differences in autonomy, social engagement, vulnerability, and patterns of technology use. Prevention and early intervention approaches that strengthen coping skills, emotion regulation, and resilience prior to engagement with highly social and less regulated

online environments may be particularly important. Similarly, support responses should consider the differing experiences and vulnerabilities of demographic groups, including gender diverse, LGBTQA+, and neurodivergent young people.

Recommendation 14: Develop age-appropriate supports, education, and safeguards that reflect developmental differences in children and young people's digital technology use, including the increasing social, interactive, and independent nature of engagement across adolescence and young adulthood.

Recommendation 15: Strengthen mental health, coping skills, digital literacy, and resilience before young people enter highly social and less regulated digital environments, while also supporting parents and caregivers to adapt guidance and support as children develop increasing independence online.

Recommendation 16: Ensure supports, interventions (e.g., clinical, psychosocial, and prevention programs), and digital environments are responsive to the differing experiences and vulnerabilities and strengths of diverse groups, including gender diverse, LGBTQA+, and neurodivergent children and young people.

7.4.7 Coordinated, Systems-Level Responses

Importantly, the findings of this project suggest that responses to digital technology-related harms should not focus solely on the digital environment itself. Rather, digital technology use is embedded within broader social, educational, family, community, and policy contexts, and responses are therefore most effective when coordinated across these systems. For example, if restrictions on digital technology use reduce opportunities for social connection, entertainment, or exposure to diverse perspectives, coordinated efforts should also seek to provide alternative opportunities for connection, recreation, creativity, and support outside digital environments. Similarly, strengthening mental health, social connection, coping skills, and opportunities for meaningful engagement beyond digital spaces may reduce reliance on harmful or distress-driven digital engagement. These findings therefore support coordinated, multisystem approaches that move beyond focusing solely on individual responsibility and instead address the broader systems, environments, and technological features shaping children and young people's digital experiences.

Recommendation 17: Adopt coordinated, multisystem approaches spanning mental health, education, families, communities, industry, and regulation that balance harm minimisation with preserving opportunities for social connection, identity exploration, creativity, learning, and support within digital environments.

Recommendation 18: Involve children and young people and those with diverse identities in ongoing consultation and co-design processes to ensure policies, interventions, and digital environments reflect their lived experiences, priorities, and needs.

Recommendation 19: Embed ongoing evaluation and continuous review into policy and intervention responses to ensure they remain effective and responsive to evolving technologies and patterns of use.

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9. Appendices

Appendix A. Finalised List of Included Constructs

Digital Technologies	Notes for Specific Cohorts
Phones (handheld, portable device)	Tablets particularly relevant for 5-12 year olds
Social media - general	
Social media - image based (still and video)	
Long form video	
Short form video	
Gaming	Educational games particularly relevant for 5-12 year olds
Messenger systems/apps	
Artificial intelligence	
Type of content engaged with (e.g., idealised) & viewing versus creating content	
Interest-based forums (e.g., Discord, Reddit)	Particularly relevant for 13-17 year olds and neurodivergent and LGBTQA+ groups

Features (of Digital Technologies)	Notes for Specific Cohorts
Chat/messaging	
Addictive/persuasive design, e.g., reward systems, infinite scroll, automatic scrolling	
Algorithms	
Advertising	
Likes (dislikes/reactions)	Less relevant for 5-12 year olds
Comments	Less relevant for 5-12 year olds
Sharing	Less relevant for 5-12 year olds
Posting	Less relevant for 5-12 year olds
Beauty filters/appearance editing	
Filters for fun	

Affordances	Notes for Specific Cohorts
Access (e.g., information, resources, social connection)	
Initiating and generating actions (e.g., content creation, uploading content)	
Sharing and disseminating information developed by others	
Interacting (e.g., social connection, competition)	
Self-presentation, including representation and anonymity	
Performance	

Positive Mental Health Experiences	Notes for Specific Cohorts
Wellbeing and life satisfaction	

Positive mood and positive emotions (e.g., joy)	
Identity	
Self-esteem	
Body appreciation	

Negative Mental Health Experiences	Notes for Specific Cohorts
Loneliness and isolation	
Anxiety	
Body dissatisfaction	
Depressed mood	
Self harm, suicidal ideation, and hopelessness	
Eating disorders and disordered eating	
Aggression and anger	Particularly relevant for 5-12 year olds

Mechanisms	Notes for Specific Cohorts
Social support, connection, and social capital	
Social comparison	
Displacement of other activities/processes (e.g., sleep)	
Hateful content (e.g., passive <i>exposure</i> , personally directed violence, harassment, and abuse, discrimination and marginalisation, harmful gendered beliefs)	
Exposure to beneficial content (e.g., diversity)	
Bullying/cyberbullying, exclusion, and ostracism	
Access to support and resources	
Misinformation	
Discovery and exploration	
Idealised content and internalisation of ideals	
Constant connection (e.g., doom scrolling, checking, monitoring, pickups)	
Pressure (e.g., peer pressure; pressure to be active; and to keep up with trends)	
Social norms and group subcultures	
Self-expression and creativity	
Fear of negative evaluation	
Acceptance and validation	Particularly relevant for LGBTQA+ young people
Polarisation (e.g., echo chambers, group mentality)	
Fear of missing out	
Fun, entertainment, humour, play	
Coping strategies, relaxing, de-stressing, escape, distraction, procrastination	
Skill development	Particularly for 10-12 year olds
Accessibility (e.g., for disability or other needs)	Particularly relevant for neurodivergent young people

Sexualisation, sexual behaviours, and sexual harm	
Addiction	

Positive Mental Health Experiences	Notes for Specific Cohorts
Wellbeing and life satisfaction	
Positive mood and positive emotions (e.g., joy)	
Identity	
Self-esteem	
Body appreciation	

Negative Mental Health Experiences	Notes for Specific Cohorts
Loneliness and isolation	
Anxiety	
Body dissatisfaction	
Depressed mood	
Self harm, suicidal ideation, and hopelessness	
Eating disorders and disordered eating	
Aggression and anger	Particularly relevant for 5-12 year olds

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Appendix C. Recommendations, Associated Evidence, and Potential Outcomes from Recommendation Implementation

This table presents the report's recommendations alongside summaries of the evidence informing each one and the potential outcomes of implementing them. Recommendations are of two key types. **Direct recommendations** propose modifications to the digital technology environment that are likely to influence mental health directly; these are indicated in the table. **Enabling recommendations**, also indicated, are required to support and facilitate those direct effects. For changes to the digital technology environment to be effective and to influence mental health, the direct recommendations must be accompanied by enabling recommendations.

For direct recommendations, we also identify potential outcomes for mental health. We differentiate between recommendations that **will most likely improve mental health** and recommendations that **may improve mental health**. Recommendations that will most likely improve mental health are those for which established evidence is available to support the predicted outcome and recommendations that may improve mental health are those for which a growing, but not yet established, evidence base is available to support the predicted outcome.

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
From User Burden to Platform Accountability			
Recommendation 01 Mandate safety-by-design Mandate safety-by-design obligations - within a duty-of-care model that explicitly focuses on reducing any harm to mental health - that require technology providers to build safer environments in ways that	• §6.3 Mental health an indirect target of current legislative and policy responses (see also Table 6.1). • §5.2.1 Digital technology use predicts later poorer mental health across age groups (although effects are inconsistent in longitudinal models); suggests need to explicitly attend to mental health in duty-of-care model. • Technical Report Consultation participants reported that oversight and content moderation are ineffective (see Technical Report, Chapter 1, Table 1.4); safer environments rather than reliance on reactive actions are required.	Implementation of mandated safety-by-design that focuses on reducing harm to mental health as an explicit outcome, will restrict or modify digital features ¹³ to ensure safer digital technology architecture. In turn, it is most likely that safer architecture will improve mental health, for example, depression, self-harm, anxiety, eating disorders, body dissatisfaction, and wellbeing.	Direct

¹³ Features refer to the design elements of technologies, such as algorithms, likes, and sharing, that shape digital technology experiences.

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
shift safety responsibilities onto platforms not individuals.	• §5.2.1.1 Greater breadth of negative online experiences predicted later mental ill-health (LSAC: each additional type ~1.5–2× risk); design that retains users raises exposure to such content. • §2.1.4.1 Negative experiences not sought out by users, exposure to harms is unprompted and unwanted (see 2.1.5.1 qualitative theme 6 and subtheme 6.1); platform architecture shapes exposure. • §4.3.1.3 Adolescents and young adults receive a substantial share of social media content from recommender systems rather than known sources, indicating platform architecture shapes exposure. • §2.1.3 Addictive or persuasive design features (algorithm-delivered content, endless/infinite scroll, reward systems) that maximise engagement and retention identified in the project consultation as a top 5 priority due to perceived influence on mental health (Figure 2.2). Experts ranked addictive/persuasive design (M=4.5) and recommendation systems/algorithms (M=4.4) as the top two platform features warranting research attention (see Table 2.1). • §5.3.3 ‘Universal’ negative mechanisms – loss of time, distraction, compulsive checking, escapism – that reflect engagement driven by platform architecture, consistently associated with poorer mental health across ages (see also Technical Report, Ch 4 §4.3.5.2.1 – 4.3.5.2.3 and Table 4.11). • §4.3.3.2 ‘Universal’ negative mechanisms– difficulty taking breaks, technology a distraction, loss of time, exposure to extreme opinions – that reflect engagement driven by platform architecture were endorsed highly by		

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
Recommendation 02 Empower digital regulators Ensure regulators (e.g., the eSafety Commissioner) have sufficient powers ¹⁴ to set safety-	participants as being true for them (see also Figures 4.16 and 4.17) • 55.3.2.5 Beauty and special-effects filters use (design features) were associated with poorer mental health among children and adolescents (see also Figure 5.9). These features may not be perceived as problematic, thus users less able to take responsibility to protect self. • 55.3.2.6 More frequently receiving content from algorithm-recommender systems was associated with poorer mental health among children, whereas receiving content from known people was largely not associated with mental health outcomes (see also Table 5.1). • 56.4 Content moderation/access restriction alone do not address harms arising from platform design; design/systems regulation needs strengthening alongside them. • 56.4 International shift toward placing responsibilities on platforms (e.g., UK duty-of-care, 'safety-by-design'); need to move from voluntary to mandatory rules.		
	• 56.3 Comparison shows jurisdictions with well-resourced specialist regulators (the eSafety Commissioner, Ofcom) integrate standard-setting, enforcement, complaints handling and education more effectively than self-regulatory models (see Table 6.1).	Empowering regulators is an enabling recommendation ensuring duty-of-care protections are upheld. In turn, this supports mental health indirectly by ensuring that	Enabling

¹⁴ This may include the need for regulatory powers to be coherent with and complement other relevant regulators domestically or internationally, who have intersecting legislative requirements or who may also be responsible for enforcing associated standards of practice (such as Office of the Australian Information Commissioner [OAIC]).

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
by-design expectations, establish clear mechanisms for accountability and review, and impose enforceable standards.	• §6.4 Regulators need to have sufficient capacity to set standards, enforce obligations, and impose consequences for non-compliance (Section 6.4 and Table 6.1). • §6.4 Convergence toward placing responsibility on platforms via enforceable statutory duties (strongest in UK duty-of-care model; see Table 6.1 Importance of regulatory capacity; Shifting responsibility to platforms). • §6.5 Empirical evaluation found age-verification implementation ineffective (reliance on self-declaration) and AI content moderation lacking sensitivity, underscoring the need for regulator oversight of platform capability. • §6.4, §6.5 Evidence base for effectiveness of laws and policies for improved mental health limited and weak; ongoing independent review and evaluation of compliance and mental health impact is needed.	Recommendations #01, #03, #04, and #06 are effectively implemented.	
Designing Safer Digital Environments			
Recommendation 03 Implement evidence-informed content moderation Improve implementation of evidence-informed content moderation (i.e., harmful content identification informed by empirical evidence) approaches, guided by relevant	• §4.3.1.2 Negative online exposures documented (LSAC): exposure to “ways to be very thin” content was common (32% adolescents aged 14; 24% young adults aged 18); pornography exposure common for young adults (42%); unwanted sexual/violent content, contact by strangers, and appearance/identity-based ridicule also reported. • §5.2.1.1 Greater breadth of negative online experiences predicted later mental ill-health (LSAC: each additional type ~1.5–2× risk);	Implementation of evidence-informed content moderation will enhance identification and removal of harmful content, reducing exposure to such content. These enhancements in content moderation may improve mental health, for example, depression/distress, generalised and	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
mental health, developmental, and digital technology experts and end users, to better identify and address harmful and “grey area” content across digital platforms, including emerging technologies and AI-enabled systems accessible to children and young people.	• §4.3.3.2 Any experience of harmful AI-companion content reported at non-negligible levels (8–13% abuse; 18–21% dangerous ideas; 4–19% unwanted sexual content); on social media, any experience of unwanted sexual content 24–42%, bullying 30–34% (DigiT). • §5.3.3.1 Unwanted sexual content (on social media or via AI companions) was consistently associated with poorer mental health, with particularly strong associations among children using AI companions – caution, small sample size for children (DigiT). Low levels of receipt of such content associated with higher wellbeing, self-concept clarity, body esteem (DigiT). • §5.2.1.1 Some content/experiences appear universally harmful (self-harm, pornography, online bullying, unwanted sexual content; see also Technical Report, Ch 4, Table 4.11), making moderation appropriate and straightforward; but ‘grey area’ content can be difficult to detect (e.g., subtle/hidden ways in which thin-ideal content is presented) and content harmful to one group may not be to another (see Technical Report, Ch 4, Tables 4.12 and 4.13); moderation requires careful, informed application including to reduce risk of over-removal, e.g., of identify-affirming/supportive content. • §6.5 AI-driven moderation lacks sensitivity differentiating harm from benign content; users adapt (e.g., lexical variants in pro-eating-disorder content) to evade moderation.	social anxiety, loneliness, body dissatisfaction, and wellbeing.	

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
Recommendation 04 Regulate engagement-driven design, transparency, and user-control Introduce safety-by-design approaches that greatly reduce or even prohibit features encouraging compulsive or excessive engagement, increase transparency regarding algorithms, recommender systems, and platform design, and provide users with greater control over their digital experiences.	• §2.1.3 / Table 2.1 Experts prioritised addictive/persuasive design, infinite scroll and likes as key features for scrutiny. • §5.3.3.1 Compulsive/time-consuming use, distraction, and escapism were “universal” negative mechanisms associated with poorer mental health across all age groups (DigiT). • §5.3.3.4 Decision-tree analyses: loss of time scrolling and social-media-interfering-with-sleep differentiated poorer mental health; “feeling left out” and “escapism” most consistently distinguished low from high mental health across social media and gaming (DigiT). • §4.3.3.2 / Table 4.2 LSAC: 16–19% spent a lot of time thinking about/planning social media use; 9–11% unsuccessfully tried to quit; DigiT participants endorsed scrolling-related loss of time and distraction. • §5.3.2.6 / Table 5.1 Algorithm-recommended content associated with poorer child mental health (transparency/control rationale). Also see evidence for Recommendations #4.1 to 4.4 below and for Recommendation #1 above regarding safety-by-design	Implementation of the recommended safety-by-design approaches will reduce compulsive or excessive engagement; increase transparency of algorithms, recommender systems, and platform designs; and provide users with greater control. These changes to digital architecture will most likely improve mental health, for example, depression, self-harm, anxiety, eating disorders, body dissatisfaction, and wellbeing.	Direct
4.1: Algorithmic content should be specifically regulated to minimise amplification of delivery of extreme or harmful content and to limit recommender-	• §4.3.1.3 Source of content differs by age – children see more known/followed content, young adults more recommender-system content; supports re-orienting recommenders for younger users (DigiT). • §5.3.2.6 Algorithm-recommended content associated with higher depression, generalised anxiety, loneliness and	Regulating algorithmic content will minimise amplification of harmful content and limit recommender system content exposure for children and adolescents. These changes will most likely improve mental health, for	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
system content exposure for children and adolescents. Redesign of these systems could be oriented to prioritise content from known and followed contacts.	aggression in children; content from known/followed people was not (DigiT). • §5.2.1.1 Breadth of negative online experiences (possibly amplified by algorithmic exposure) predicted later mental ill-health (LSAC). • Technical Report Ch 4, §4.3.5.4 / Table 4.16 Receiving algorithm-delivered content linked to displacement effects (sleep loss, distraction) and to poor mental health for children (DigiT).	example, depression, anxiety, loneliness, aggression (children), and wellbeing.	
4.2: Integrate friction and pause features as default design settings to interrupt compulsive use and prevent excessive engagement.	• §4.3.3.4 Difficulty taking breaks endorsed for gaming/social media; sleep disruption ‘any-experience’ high (social media 52–75%; DigiT). • §5.3.3.1 Compulsive/time-consuming use, loss of time and distraction ‘universally’ associated with poorer mental health across age groups (DigiT). • §5.3.3.4 Decision-tree analysis: loss of time scrolling and compulsive checking differentiated poorer mental health (esp. young adults; DigiT).	Integrating friction and pause features as default design settings will interrupt compulsive use and prevent excessive engagement. These changes to design settings will most likely improve depression, anxiety, loneliness, and wellbeing. .	Direct
4.3: Platforms should be required to provide an evidence of harm assessment for design features prior to release, rather than waiting for accumulation of evidence of harm.	• §5.3.2.5 Children, young people and parents may not recognise harms from seemingly innocuous features, e.g., built-in beauty/special-effects filters – features users may view as fun – associated with poorer mental health across children and adolescents (DigiT); supports assessing design before release samples. • §6.3.1, 6.4 Emerging systemic risk-assessment models (UK safety-by-design, EU systemic risk assessments) support pre-emptive evaluation.	Implementation of harm assessments prior to release of design features will prevent harmful features from being available to children and young people. In turn, reduced availability of harmful design features may prevent mental health problems, for example depression, anxiety, loneliness, and eating-disorder risk.	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
4.4: Require meaningful data transparency and access to platform data by regulators and researchers to support monitoring and evaluation of effects of digital technologies and their features on user behaviour and mental health. Require data transparency for users to ensure simple access to their own usage data (in interpretable format).	• §6.4–6.5 Weak evidence base for impacts of platform practices and regulatory actions; evaluations rely on usage proxies rather than mental-health outcomes – data access enables better evaluation.	Requiring data transparency and access to data for users and researchers will provide high-quality data to support monitoring and evaluation of the effects of digital technologies and their features on user behaviour and mental health. This can enable better policy, education, research, and clinical intervention, focused on addressing the relationships between digital technology and mental health. This may lead to more targeted and precise policies and interventions (for example for depression, anxiety, body image, eating disorders, and wellbeing), supporting effectiveness of Recommendations #1, #3, #4, #11, #14, and #16.	Enabling
Preparing for Emerging Technologies			
Recommendation 05 Monitor and research emerging technologies and AI Establish ongoing monitoring and research into emerging technologies accessible to	• §4.2.8 AI is an emerging, rapidly-adopted technology: generative AI among most-used apps for ~24% adolescents and 28% young adults; AI chatbot companions among most-used for 17% adolescents, 19% young adults; measured only in the most recent (2025) DigiT survey; evolving evidence gaps.	Implementation of ongoing monitoring and robust research into emerging technologies will improve understanding of the processes through which these technologies positively and negatively affect mental health.	Enabling

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
children and young people, including artificial intelligence, to better understand their potential positive and negative effects on mental health, and prioritise longitudinal, experimental, and other robust research designs to strengthen understanding of the causal mechanisms, experiences, and affordances through which these technologies may influence outcomes.	• §4.3.3.2 Non-negligible ‘any’ experience of harms from AI companions: abuse (8–13%), dangerous ideas (18–21%), unwanted sexual content (4–19%). • §4.3.3.1–4.3.3.2 AI mechanism endorsement (positive and negative) measured but with small samples, especially children; negative AI mechanisms for generative AI not assessed; more research is needed. • §5.3.3.3 AI-companion mechanisms showed distinct subgroup patterns (stronger negative links for LGBTQA+ adolescents; some positive links for neurodivergent adolescents). • §2.1.2 – AI prioritised for research only by expert and adult groups, indicating uneven recognition and a need for monitoring. • §5.2 / §5.3 Across longitudinal datasets only a minority of prospective effects were significant (12–57%); patterns inconsistent, with cross-sectional data explicitly cautioned as non-causal – motivating stronger research designs to understand causality for emerging technologies.	This improved understanding can enable better policy and education responses to emerging technology, supporting effectiveness of Recommendations #6 and #7.	
Recommendation o6 Proactively apply safety and accountability for emerging technologies Extend child safety, platform accountability, and safety-by-design approaches to emerging technologies from the outset,	• 4.2.8 Children’s AI use is currently low but adolescents/young adults already show meaningful uptake, signalling rapid normalisation before safeguards exist. • §4.3.3.2 / Fig 4.16 Harmful AI-companion experiences (abuse, dangerous ideas, unwanted sexual content) already reported at non-negligible levels.	Implementation of safety-by-design approaches to emerging technologies, including a focus on child safety and platform accountability, will restrict or modify digital features to ensure safer digital technology architecture.	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
rather than responding only after harms emerge.	• §5.3.3.1 Unwanted sexual content via AI companions was among the strongest correlates of poorer mental health, particularly for children (caution, small sample size). • §6.3.1 Notable approaches elsewhere (e.g., China's proposed AI "minor mode" for humanised/anthropomorphic AI services) illustrate proactive design regulation of emerging tech.	In turn, safer digital architecture for emerging technologies may improve depression, anxiety, and wellbeing.	
Recommendation 07 Explore regulation of AI chatbot companions Consideration should be given to regulating (and/or introducing checks and balances) AI chatbot companions as a service or therapeutic device to ensure safety, in light of potential for distress-driven engagement (i.e., AI companions used as quasi-therapeutic tools).	• §4.2.8 AI chatbot companions are among the most-used apps for a notable minority of adolescents (17%) and young adults (19%). • Technical Report, Ch 4, Table 4.8 AI companions may be quasi-therapeutic tools; distress driven engagement (used to escape from life; used to relax from stress) and perceived companionship/alliance (feel accepted by AI companion; receive positive support from AI companion) signalled across analyses. • §4.3.3.1 AI mechanisms endorsed for companionship/skill development; young adults trusted AI information less (higher digital literacy). • §5.3.3.1 Escapism and relaxation-driven use of digital technology, including "chatting with an AI companion offers me an escape," were associated with poorer mental health across cohorts – consistent with distress-driven use (see also Technical Report Ch. 4, Tables 4.29, 4.30, 4.31). • §4.3.3.2 Harmful AI-companion experiences (abuse, dangerous ideas, unwanted sexual content) reported at non-negligible levels	Regulation of AI chatbot companions as therapeutic devices would increase transparency and accountability of their operations and increase safety (for example, giving mental health advice) and reduce harms (for example, risks of emotional dependency, privacy breaches). In turn, appropriate regulation may improve mental health, for example, depression, anxiety, loneliness, body image, eating disorder risk, and wellbeing.	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
	• §5.3.3.1 Unwanted sexual content via AI companions strongly linked to poorer mental health, particularly in children (caution: small samples). • §5.3.3.3 For LGBTQA+ adolescents, AI-companion mechanisms showed stronger associations with mental health than social media or gaming; some AI-companion mechanisms (e.g., strong bond, escapism) linked to lower depression among neurodivergent adolescents. Note: all data for Recommendation 7 comes from DigiT cross-sectional survey.		
Moving Beyond Simplistic Conceptualisations of Digital Technology Use			
Recommendation 08 Move beyond screen time metrics Move beyond simplistic screen time approaches in policy, education, public messaging, and research, that equate less time using technology to better mental health outcomes. Instead, focus on the nature, context, and mechanisms of digital engagement, including the platforms, features, and experiences that may independently or in	• §5.2 Prospective effects of use (time spent) on mental health were largely null and inconsistent (RAW, e.g., Figure 5.1/CATS/LSAC/Existing literature synthesis, e.g., Figure 5.3); RAW: type of platform mattered more than total time (e.g., Instagram/Snapchat v general social media use among adolescents, §5.2.1.1). • §5.3.1 / 5.3.2 Figures 5.5, 5.6, 5.7 Overall time on devices showed little/negligible association with mental health; stronger and more specific associations emerged for particular platforms, activities and behaviours (DigiT). • §5.3.2 / §5.3.3 Specific behaviours (posting [Figure 5.8], commenting [§5.3.2.3], beauty filters [Figure 5.9], algorithmic content [Table 5.1]) and underlying mechanisms (feeling left out, comparison, escapism [§5.3.3.1, Technical Report, Ch 4, Tables 4.11, 4.14, 4.23, 4.28, 4.29, 4.32]) were more strongly related to mental health	Moving beyond screen time will allow for a greater understanding of the complexities of when, how, and for whom digital technology use can impact mental health. This recommendation can enable better policy, education, research and intervention design focused on understanding and addressing these complexities. This may lead to more targeted and effective mental health interventions (for example for depression, anxiety, body dissatisfaction) and targeted offline and online supports for children and young people, supporting	Enabling

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
combination contribute to positive and negative outcomes for children and young people.	than time spent (DigiT); time spent/screen time can obscure harms and benefits. • §5.3.3.4 Combinations of mechanisms (decision-tree analysis) differentiate good/poor mental health (DigiT); supports a mechanism focus over time (see also Technical Report, Ch 4, Figures 4.21, 4.22, 4.23). • §4.2.10 Few participants showed extensive (5+ hrs) use of any single technology and high-use of different technologies rarely overlapped, complicating a single “screen time” metric. • §6.5 Policy evaluations rely on usage proxies rather than mental-health outcomes – reinforces shift beyond screen time framing.	effectiveness of Recommendations #11, #12, and #13.	
Recommendation 09 Promote positive experiences and reduce harms Support the development of safer and more positive digital environments by not only reducing exposure to harms, but also promoting digital experiences that foster meaningful social connection, learning, creativity, identity development, genuine self-expression, and support	• §2.1.4 / Fig 2.3 Social connection, entertainment, relaxation/escapism, learning, and creativity/self-expression were prioritised positive experiences across stakeholder groups. • §4.3.3.1 / Fig 4.15 DigiT: children and young people consistently describe positive experiences of digital technology use. The most highly endorsed positive social media experiences were entertainment, social connection, access to information and learning; LSAC: connecting with peers with similar experiences (35–38%) and sharing interests/hobbies (28–31%); DigiT: the most highly endorsed positive gaming experiences were relaxation and teamwork (Figure 4.12) • §5.3.3.2 – Identity acceptance (“feeling accepted”) was a primary positive mechanism: associated with higher wellbeing and lower depression, anxiety and loneliness for	Development of safer and more positive digital environments will reduce exposure to harms and promote positive digital experiences. These changes to digital environments may improve mental health, for example, depression, anxiety, loneliness, body image, and wellbeing.	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
acceptance of authentic self-identity.	adolescents/young adults; social support and connection similarly associated with positive mental health for young adults (DigiT). • §5.3.2.7 – Private messaging consistently associated with better mental health (higher wellbeing/body esteem, lower loneliness/social anxiety), especially for marginalised young adults (DigiT).		
Recognising Complexity and Bidirectional Relationships			
Recommendation 10 Apply caution and limit reliance on cross-sectional evidence Interpret associations between digital technology use and mental health cautiously, such that associations from cross-sectional data are not exclusively relied on for decision making (i.e., in policy, education, public messaging, and intervention development).	• §5.2.1 / §5.2.2 Longitudinal relationships are bidirectional and cyclical; poor mental health may drive increased use (esp. social media) more reliably than the reverse – cross-sectional correlations can be misread as ‘harm’. • §5.2 Mental health more consistently predicted later technology use than the reverse across Australian datasets. Problems will arise if cross-sectional relationships demonstrating an association between digital technology and mental health (e.g., §5.3.1) are solely relied upon for decision making and erroneously interpreted as digital technology influencing mental health. • §5.2 / Fig 5.2 Marked individual variability in longitudinal data – higher use linked to better, worse, or no change in mental health for different individuals. Effects may be masked or misinterpreted in cross-sectional data. • §5.3.3.3 Cross-sectional subgroup patterns inconsistent with longitudinal CATS findings; caution advised in	Reducing reliance on cross-sectional associations for decision-making will foster better understanding of the effects of digital technology use on mental health and the effects of mental health symptoms on changes to digital technology use. Improved understanding can better enable appropriate decision-making and actions in policy, education, and clinical and social interventions settings, supporting effectiveness of Recommendations #1, #3, #4, 11, #12, and #13.	Enabling

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
Recommendation 11 Address distress-driven digital engagement in mental health care Integrate digital technology considerations into broader youth mental health strategies and interventions, recognising that harmful (i.e., signalled by distraction from other activities, compulsive engagement, loss of time, sleep disruption) or distress-driven digital engagement may itself be a signal that a young person is struggling with their mental health. Responses should address underlying drivers of harmful engagement, such as loneliness, stress, emotional distress, and social disconnection, rather than	interpreting cross-sectional associations without reference to data that can inform causal relationships. • §6.4–6.5 Weak evidence base; effectiveness claims often rest on assumptions rather than demonstrated impact. • §5.2 / §5.2.2 Evidence from Australian longitudinal datasets indicated mental health symptoms more reliably predict later technology use than the reverse (CATS/RAW/LSAC); poorer mental health and emotional/behavioural/social vulnerability predicted increased social media (and some gaming) use over time (LSAC). • §5.2.2.1 RAW: anxiety, depression, body dissatisfaction and low life satisfaction predicted later increased social media use; CATS: high depressive symptoms/poor wellbeing predicted later high use. LSAC: higher distress and lower quality of life predicted later increased social media use. • §2.2.2.1 Existing literature synthesis: poor mental health associated with later increases in social media use in 17% of effects; good mental health associated with later increased social media use in 4% of effects. • §2.2.2.2 Existing literature synthesis: poor mental health associated with later increases in gaming use in 29% of effects; good mental health associated with later increased gaming use in 3% of effects. • §2.2.2.5 Existing literature synthesis: poor mental health associated with later increases in messaging/chat in 10% of effects; good mental health associated with later increased gaming use in 0% of effects.	Deliberate attention to the interaction between mental health and digital technology use within mental health strategies and interventions will improve the responsiveness of youth mental health care. Directly addressing the mental health drivers of harmful engagement with digital technology will most likely improve mental health, for example, depression / distress, anxiety, loneliness, body dissatisfaction, eating disorder risk, and wellbeing and reduce reliance on technology as the sole coping mechanism for those affected by mental ill health.	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
focusing solely on reducing technology use.	• §5.3.3.1 Escapism and relaxation-driven use (“escape from my life,” “relax when stressed”) consistently associated with poorer mental health across platforms and indicators, suggesting distress-driven use (DigiT). • §4.3.3.2 / Table 4.2 LSAC: using social media to forget personal problems (14–17%) and continued/compulsive use reported – indicators of distress-driven engagement. • §5.3.1 / Figure 5.7 Loneliness associated with use of some digital technology platforms (YouTube, TikTok [reverse pattern for internet forums for young adults] and digital technology behaviours (see Technical Report, Ch 4, Table 4.15 [reverse pattern for messaging/chatting for young adults] and 4.19).		
Recommendation 12 Invest in offline opportunities for social connection and coping Invest in offline social connection and recreation opportunities for children and young people to support multiple pathways for development of positive mental health. This should also include ensuring access to a range of viable, non-digital options for managing distress, rather than	• §2.1.5.1 (Theme 7 ‘Turning your brain off’; Theme 5 ‘virtual vs real’) Participants described passive use as low-effort coping that, when prolonged, led to loneliness and detachment; over-reliance on the ‘virtual’ displacing the ‘real’ world linked to negative wellbeing. • §2.1.5 / Table 2.4 “Displacement of other activities/processes” ranked the top expert-prioritised mechanism. • Technical Report Ch 3.D 3.2.4 Frequency of engagement in digital technology weakly associated with reduced level of engagement in other activities (out-of-home activities, physical activity, homework; LSAC). • §4.2.10 Extensive use (17% children, 18% adolescents, 19% young adults spent more than 8 hours per day on average on their device; DigiT) may displace beneficial offline experiences/activities; technology reported as being	Investing in offline supports will increase opportunities for offline social connection and recreation and non-digital options for managing distress. Provision of these opportunities and supports will most likely improve mental health, for example, depression, anxiety, loneliness, body image, eating disorder risk, and wellbeing.	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
relying on technology as the primary means of coping.	difficult to take a break from, distracting from other tasks, and interfering with sleep by some children, adolescents, and young adults (Technical Report Ch 4 Tables 4.4 and 4.6; DigiT). • §5.3.3.1 – Escapism and relaxation-driven (stress-coping) use of social media, gaming and AI companions were associated with poorer mental health across cohorts (DigiT), raising the possibility that technology-based coping reflects or compounds distress. • §5.3.3.4 / Fig 5.12 Children who used gaming to escape and were distracted by it, without teamwork, had markedly higher depression scores; “distraction from other tasks” and “escapism” consistently differentiated poorer mental health across platforms (see also 5.3.3.1 DigiT). • §6.4 Unintended consequence: restrictions can reduce access to support/connection – offline alternatives mitigate this.		
Recommendation 13 Support safe and inclusive online spaces for diverse youth Support access to connected online spaces for LGBTQA+ and neurodivergent children and young people, particularly where offline spaces may not be safe or supportive for these groups, and ensure they are co-designed with these groups to	• §5.2.1.1.1 Among gender/sexually diverse and discrimination-exposed adolescents, higher social media use predicted greater risk of depressive symptoms and self-harm relative to non-gender/sexually diverse and discrimination-exposed adolescents; among frequently bullied adolescents, higher use predicted reduced anxiety, poor wellbeing and self-harm (CATS). • §5.3.2.7 Private messaging linked to lower loneliness among LGBTQA+ young adults and to lower loneliness/generalised anxiety among neurodivergent young adults.	Investing in and supporting access to safe and inclusive online spaces for LGBTQA+ and neurodivergent children and young people will increase opportunities for safe social connection, identity exploration, and support. Provision of these opportunities and supports may improve mental health, for example, depression, anxiety, loneliness, and wellbeing.	Direct

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
best meet their needs and are well utilised.	• §5.3.2.4 / Fig 5.8 Posting on social media was associated with positive mental health indicators specifically among LGBTQA+ and neurodivergent adolescents. • §5.3.1 For LGBTQA+ young adults, more time on TikTok associated with higher LGBTQA+ identity affirmation. • §5.3.3.3 Identity-affirming mechanisms (feeling accepted, freedom of expression, identity-affirming connection) were uniquely associated with better mental health for LGBTQA+, neurodivergent and (some) gender-diverse users; associations with poorer mental health tended to be weaker/fewer for these groups. • §6.4 (unintended consequences): Restrictions risk disproportionate impact on marginalised groups; technology often linked to positive experiences for LGBTQA+/neurodivergent youth (DigiT). • §5.2.1.1.1 / §5.3.3.3 Inconsistent longitudinal (CATS) and cross sectional (DigiT) findings for relationship between social media use and mental health for gender/sexually diverse / LGBTQA+ adolescents and young adults. Cross-sectional findings that suggest lower vulnerability in among LGBTQA+ than non-LGBTQA+ adolescents/young adults to be interpreted cautiously due to cross-sectional nature of data.		
Supporting Young People with Diverse Identities and Across Developmental Stages			
Recommendation 14	• §4.2 Device and activity patterns shift developmentally (tablets/TV in childhood [4.2.1 DigiT / 4.2.2 LSAC]; smartphones [4.2.1 DigiT], social media [4.2.7 DigiT / Figure 4.3 RAW / Figure 4.4 CATS], messaging [4.2.6 DigiT/RAW],	Investing in developing and providing age-appropriate responses to digital technology use will improve tailoring	Enabling

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
Provide developmentally tailored supports and interventions Develop age-appropriate supports, education, and safeguards that reflect developmental differences in children and young people's digital technology use, including the increasing social, interactive, and independent nature of engagement across adolescence and young adulthood.	internet forums [4.2.9 / Figure 4.2 DigiT] increasing through adolescence/young adulthood; gaming increases from childhood to adolescence and declines in adulthood [4.2.5 LSAC/RAW; YouTube use higher among children than adolescents/young adults [4.2.3 DigiT] and daily hours of use peaks during mid-adolescence [Technical Report Ch 3.C Figure 3.1]). • §4.3.1.32 Children receive more social media content from known/followed people; young adults more from recommender systems (DigiT). Gaming via livestreaming and chat platforms less common among children than adolescents and young adults (4.3.2.1 DigiT). Evolving use becomes more social, interactive, and less parent-mediated; increasing both opportunities and exposure to risk. • §5.2.1.1 Possible developmental sensitivity windows – image-based platform use in early adolescence predicts later poor mental health (Instagram and Snapchat RAW); social media use in early adolescent females predicts depressive symptoms and poor wellbeing with larger effects in early adolescence for females (CATS). • §5.3.2 Social media behaviour–mental-health associations differ by age (e.g. active/public use most negative for children; appearance behaviours for adolescents; passive use for young adults; messaging most positive for young adults; DigiT).	of policy, education, and clinical and social interventions. These developmentally tailored responses will support readiness for use of digital technology and will enable implementation of Recommendations #11, #12, and #13.	

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
Recommendation 15 Build digital, social, and emotional skills early Strengthen mental health, coping skills, digital literacy, and resilience before young people enter highly social and less regulated digital environments, while also supporting parents and caregivers to adapt guidance and support as children develop increasing independence online.	• §2.1.5: “Digital literacy” identified as a priority mechanism by experts (see Table 2.4). • §4.2.7 Steep rise in social and less-supervised use during adolescence marks the transition point for pre-emptive skill-building. Social media becomes near-universal by late adolescence (>95% daily by age 17 in RAW) – implies a pre-adolescent preparation window. • §5.2.2 Earlier poor mental health and vulnerability factors (social/emotional/behavioural difficulties) predicted later increased digital technology use, supporting building resilience/coping before heavy use begins. • §4.3.3.1 Young adults trusted AI information less than younger groups – suggests digital literacy develops with age; this skill could be built earlier. • §4.2.5 Evidence of parental mediation (children’s gaming restricted on school days), suggesting caregiver guidance is feasible and developmentally contingent. • §6.4 Benefit promotion is commonly pursued via education and media literacy.	Strengthening digital literacy and coping skills among children and young people prior to encountering more social and less regulated digital environments will support resilience to potential harms in those environments. Increased skills and resilience may improve mental health, for example by preventing development of depression / distress, anxiety, and poor wellbeing. This would occur by mitigating risks that are otherwise heightened as youth move into highly social, less-regulated environments without appropriate skills.	Direct
Recommendation 16 Tailor supports and interventions to diverse needs and identities Ensure supports, interventions (e.g., clinical, psychosocial, and prevention programs), and digital environments are	• §5.2.1.1.1 Among gender/sexually diverse and discrimination-exposed adolescents, higher social media use predicted greater risk of depressive symptoms and self-harm; among frequently bullied adolescents, higher use predicted reduced anxiety, poor wellbeing and self-harm (CATS). • §5.3.3.3 Mechanism–mental health associations varied substantially by gender, LGBTQA+ identity and neurodivergence; identity-affirming mechanisms uniquely	Ensuring supports, interventions, and digital environments are tailored and responsive to the varied experiences, vulnerabilities, and strengths of diverse groups will enhance their effectiveness. This will support the helpfulness of Recommendations #9, #11, #12, #13, and #15.	Enabling

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
responsive to the differing experiences and vulnerabilities and strengths of diverse groups, including gender diverse, LGBTQA+, and neurodivergent children and young people.	beneficial for these subgroups; AI-companion mechanisms especially salient for LGBTQA+ and neurodivergent adolescents; gender diverse young adults showed amplified positive and negative relationships (DigiT). • §5.3.2 / 5.3.2.1–5.3.2.8 Direction/strength of behaviour–mental health associations differed by subgroup (e.g., posting/commenting more positive for LGBTQA+/neurodivergent adolescents; gendered patterns for filters, gaming; DigiT). • §2.1.4 / §2.1.6 Selective priorities by group (activism/representation for LGBTQA+ adults; accessibility/support for neurodivergent groups) in consultation priority setting. • §6.4 Restrictions risk disproportionately harming marginalised groups.		
Coordinated, Systems-Level Responses			
Recommendation 17 Adopt coordinated multisystem approaches Adopt coordinated, multisystem approaches spanning mental health, education, families, communities, industry, and regulation that balance harm minimisation with preserving opportunities for social	• §2.1.4 / §4.3.3.1 Digital use is embedded in social, educational, family, community (see also Technical Report Ch 3.D, Tables 3.14 and 3.15) and policy contexts; responses are most effective when coordinated across systems. • §5.2.2 Changes in digital technology use over time were predicted by mental health (RAW/CATS/LSAC) and by behavioural, emotional, and social difficulties (LSAC); integrated responses that account for contextual factors are required to support mental health and positive digital experiences.	Coordinating approaches across relevant systems can enable better integration of responses across mental health, education, family, community, industry, and regulation. This will enhance the achievement of balance between harm minimisation and promotion of positive opportunities, supporting effectiveness of	Enabling

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
connection, identity exploration, creativity, learning, and support within digital environments.	• §6.4 (Predominant focus on harm mitigation rather than benefit promotion): Law/policy largely target harms and rarely address benefits, despite report data showing some uses predict improved mental health (see Technical Report Ch3.C, Figures 3.6, 3.7, and 3.8) and users citing benefits of gaming, AI and social media (see evidence cited above for Recommendation #9). • §5.3.3.2 / §4.3.3.1 Documented positive experiences (connection, support, identity acceptance, learning, entertainment; DigiT) to be preserved alongside harm reduction. • §5.3.2 / §5.3.3 Mixed and subgroup-specific associations (harms and benefits; DigiT) imply no single sector or measure suffices; both protective and risky uses coexist; responses will be most effective when they balance harm reduction with benefit preservation. • §5.3.3.1 Universal negative mechanisms span platforms (DigiT); require responses beyond any single setting. • §5.4 Risk/benefit balance differs by age, technology and type of use; no single-lever solution will be adequate. • §6.6 Comparative review concludes a complementary mix of content moderation and system-level approaches, with stronger oversight, best improves digital safety. • §6.4 Harm-mitigation dominates; benefit promotion needs education, family and community channels alongside regulation. • §6.6 Comparative review concludes a complementary mix of content moderation and system-level approaches, with stronger oversight, best improves digital safety.	Recommendations #1, #2, #3, #4, #9, #11, #12, #13, #14, #15, #16.	

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
Recommendation 18 Involve children and youth in co-design Involve children and young people and those with diverse identities in ongoing consultation and co-design processes to ensure policies, interventions, and digital environments reflect their lived experiences, priorities, and needs.	• §2.1 / §2.1.1 The project itself used structured consultation (nominal group technique) with 62 participants across child, adolescent, young adult, parent, expert, neurodivergent and LGBTQA+ groups to set research priorities for technologies, experiences, and outcomes. • §2.1.2–2.1.5 Stakeholder groups prioritised different technologies, features, experiences and mechanisms (e.g., gaming for children; forums for adolescents/adults; activism for LGBTQA+ adults; accessibility for neurodivergent groups), demonstrating value of lived-experience input. • §2.1.5.1 Qualitative themes from children, adolescents, young adults, and parents surfaced nuanced mechanisms (social influence, connection, overload, identity, exposure to harm) not captured by experts alone. • §5.3.3.3 Strong subgroup variation means universal designs may not meet specific needs – lived-experience input is essential. • §6.4 (unintended consequences): Marginalised groups disproportionately affected by blanket restrictions, underscoring need for their involvement in design.	Involving children and young people and those with diverse identities in consultation and co-design of relevant policy and intervention approaches will improve the relevance to end-users and will enhance their uptake and effectiveness. This enabling recommendation will support the implementation and effectiveness of Recommendations #1, #3, #4, #9, #12, #13, #14, #15, #16.	Enabling
Recommendation 19 Embed evaluation and review Embed ongoing evaluation and continuous review into policy and intervention responses to ensure they remain effective	• §6.4 (Limited evidence on outcomes and effectiveness) Across jurisdictions, robust evaluation of whether laws improved mental health is lacking; claims rest on assumptions and compliance proxies. • §6.5 Only four studies (scoping review) directly evaluated relevant laws/policies; these focused on compliance and	Embedding evaluation and review will ensure policy and intervention responses are implemented as intended, and actually improve mental health rather than just changing usage. Ongoing evaluation and continuous review ensure that responses remain	Enabling

RECOMMENDATIONS	INFORMING EVIDENCE	POTENTIAL OUTCOMES	RECOMMENDATION TYPE
and responsive to evolving technologies and patterns of use.	usage rather than mental health, with inconsistent school-ban findings and ineffective age verification. • §4.2 (cohort/period differences) Digital technology use patterns shift over time (e.g., lower regular gaming among 2025 adolescents vs earlier cohorts; AI newly emergent), so measures require continual review. • §6.3 / Table 6.1 (Reform Direction) Frameworks are new and rapidly evolving (OSA review's 67 proposed changes; UK implementation debates), reinforcing the need for built-in review.	effective in reducing harms to mental health and preserving benefits as technology evolves. This enabling recommendation supports effectiveness of Recommendations #1, #2, #3, #4, #6, #7, #9, #11, #12, #13, #14, #15, #16.	