

Children & Young People's Mental Health in the Digital Age

Shaping the Future



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Almost half of the world is connected to the internet, and in countries that are members of the OECD almost everyone is online (Echazarra, 2018[1]). For children and young people today, being online and using social media have become an integral part of their lives. In 2015, a typical 15-year-old from a country that is a member of the OECD had been using the internet since age 10 and spent more than two hours every weekday online after school, and more than three hours on a weekend day (OECD, 2017[2]).

This reliance on digital technology has fuelled concerns from parents, teachers, governments and young people themselves that digital technologies and social media are exacerbating feelings of anxiety and depression, disturbing sleep patterns, leading to cyber-bullying and distorting body image. In response to these and other concerns, some countries are taking action. Legislation prevents Korean children from playing online games that require a resident registration number between midnight and 6am without parental permission; while the Government of the United Kingdom is reviewing how social media affect children's wellbeing, as well as how much screen time is healthy.

As the mass availability and use of digital technologies is a relatively recent phenomenon, there is limited hard evidence available to date on whether digital technologies, including social media, cause mental health problems in children and young people. But associations do exist between internet use and mental wellbeing. It appears a little bit of internet use can have a small positive impact on children and young people's wellbeing, while the two extremes of not being online at all and excessive use can have a small negative impact on mental wellbeing (UNICEF, 2017[3]). Similarly, while not proving causation, excessive use of digital technologies and social media are associated with mental illness (McCrae, Gettings and Pursell, 2017[4]) (Vannucci, Flannery and Ohannessian, 2017[5]). Greater social media use is associated with poorer sleep, with a significant link found between playing video games in the evening and sleep deprivation (Billari, Giuntella and Stella, 2018[6]). Digital platforms also provide tools for cyber-bullying with evidence of a rise in cyber-bullying in some countries (Livingstone, Stoilova and Kelly, 2016[7]). Social media is also associated with body image concerns (Fardouly and Vartanian, 2016[8]) and disordered eating (Holland and Tiggemann, 2016[9]).

As the rapid take-up of digital technologies and social media by children and young people continues, it is crucial to adopt an approach that minimises the risks without restricting the considerable opportunities and benefits digital technologies and social media have to offer. Children, young people, and their families should be empowered to be responsible online participants and educated about appropriate digital use and risks. Industry should be encouraged to produce relevant, appropriate and accessible content and tools. It remains critical that children and young people who display signs of mental illness get help early.

The OECD is uniquely placed to help countries address children and young people's mental health challenges in the digital age. OECD's expertise includes benchmarking mental health performance across member countries and measuring outcomes reported by those experiencing mental health disorders via the [Patient-Reported Indicators Survey \(PaRIS\) initiative](#). The OECD's triennial [Programme for International Student Assessment \(PISA\)](#) survey assesses 15-year-old school student performance worldwide and collects valuable information on student attitudes and motivations. Deep digital expertise and understanding of technological innovation and its uses is reflected in the OECD's [Going Digital project](#).





What the Evidence Says

With half of mental illness¹ beginning by age 14 it is critical to intervene early to minimise its effects on development, education, employment and health

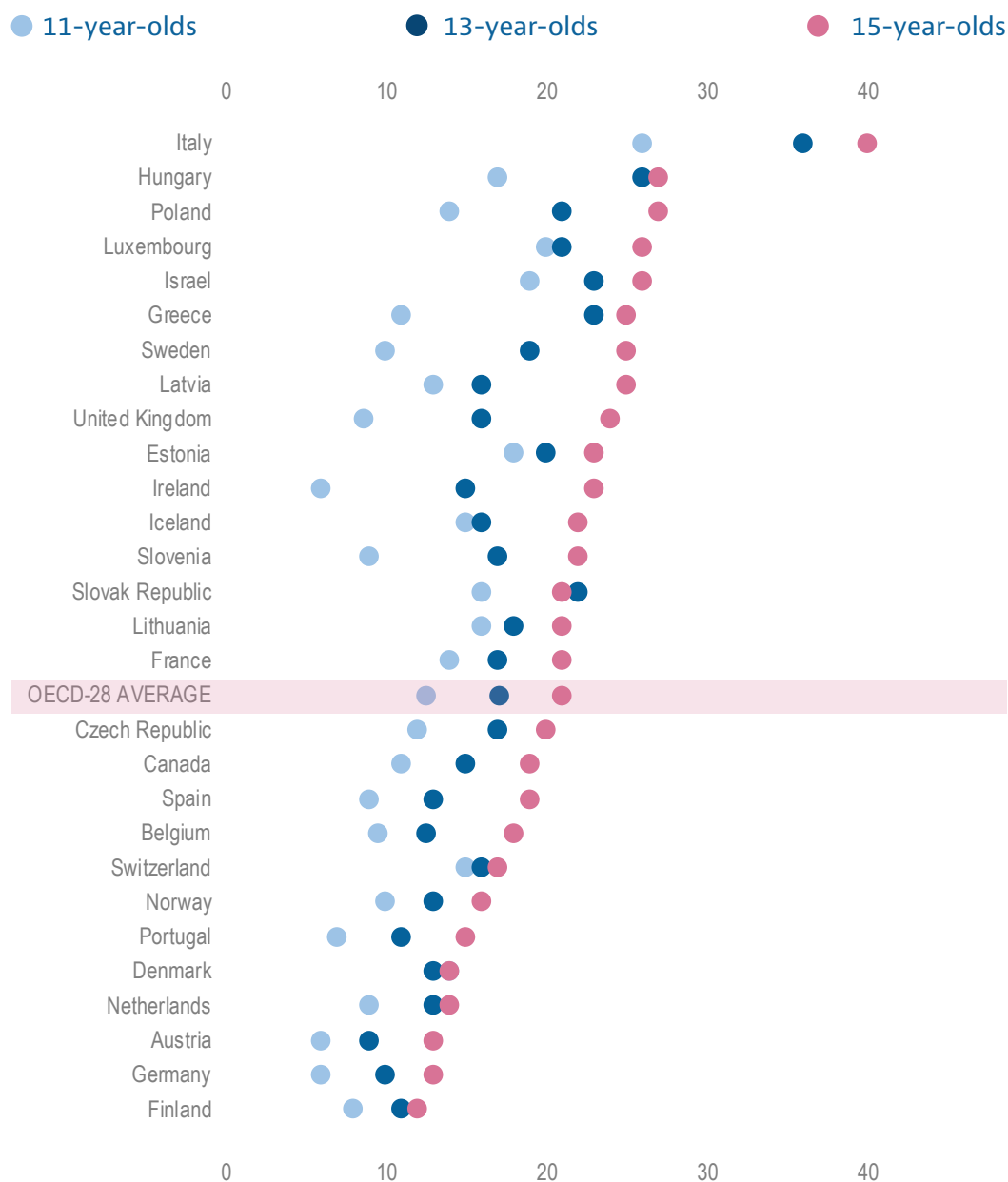
Half of all mental illnesses begin by the age of 14 and three-quarters by mid-20s (Kessler et al., 2007[10]), with anxiety and personality disorders sometimes beginning around age 11 (OECD, 2012[11]). Mental health problems represent the largest burden of disease among young people, and mental ill-health is at least as prevalent among young people as among adults (OECD, 2015[12]). A survey across 10 countries found around one-quarter of young people had a mental disorder (OECD, 2012[11])².

As many as 10% of boys and 14% of girls aged 11 reported 'feeling low' more than once a week in the last six months on average across 28 European countries which are members of the OECD. The share of children reporting feeling low increases quite sharply with age, and gender differences become even starker – as 11-year-olds, 14% of girls compared to 10% of boys felt low, but as 15-year-olds, this gap widened with 29% of girls feeling low compared with only 13% of boys. Rates were highest in Italy across all age groups, although this may reflect a different cultural understanding and interpretation of this question of 'feeling low'. The greatest difference between those aged 11 and 15 was found in Ireland, the United Kingdom, Sweden, Greece and Italy (World Health Organization, 2016[13]).

¹ In this paper "mental illness" refers to any condition that meets clinical diagnosis threshold criteria. The term "mental illness" is used interchangeably with "mental ill-health", "mental disorders" and "mental health problems". The absence of mental wellbeing or poor mental wellbeing, can affect all individuals from time to time, and may not meet the clinical threshold of a mental health disorder.

² This includes affective, neurotic, personality, development, behavioural, eating and sleeping disorders, as well as schizophrenia and substance abuse.

Figure 1. The share of children reporting feeling low more than once a week increases sharply with age



Note: Figures for the United Kingdom and Belgium have been averaged, unweighted.

Source: World Health Organization (2016), Growing up unequal: gender and socioeconomic differences in young people's health and well-being.

When the first onset of a mental disorder occurs, usually in childhood or adolescence, these disorders tend to be moderate rather than severe (OECD, 2012[11]). However, children often do not receive treatment until a number of years after initial onset (Kessler et al., 2007[10]). The failure to address mental disorders at their onset can have significant consequences throughout a child's life – affecting a child's development, and contributing to poorer educational outcomes (Choi, 2018[14]), higher

rates of unemployment, and poorer physical health (OECD, 2014[15]). The overall cost of mental illness on society is estimated to be around 3.5% of GDP (OECD, 2015[12]). In contrast, having good emotional wellbeing helps young people to deal with the challenges of adolescence, and ease the transition from childhood to adolescence and adulthood (Choi, 2018[14]).

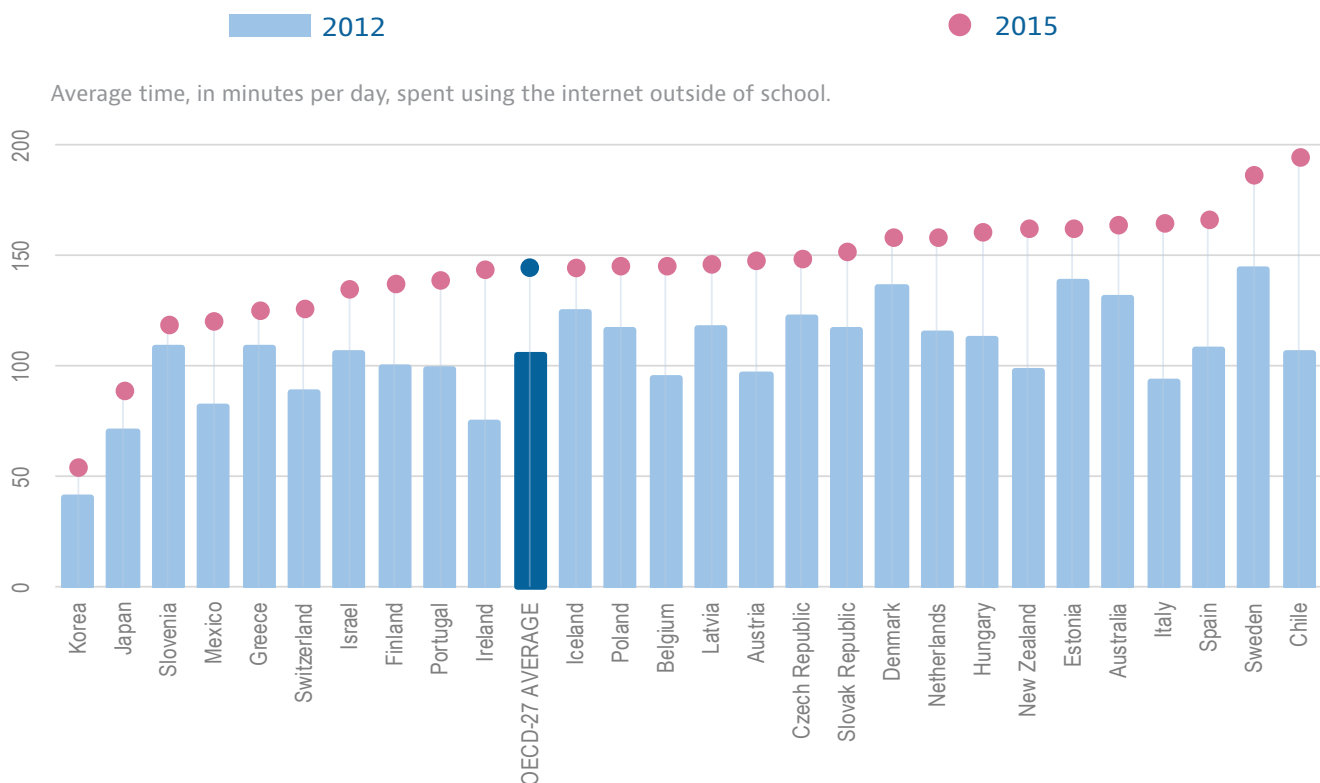
Kids spend an average of more than two hours online on weekdays and more than three hours on weekend days

Children and young people today have grown up in an era of digital technology and been familiar with computers, mobile devices and the internet from an early age. On average across OECD countries, a typical 15-year-old student in 2015 had been using the internet since age 10 and spent an average of 29 hours per week on the internet – a noticeable increase from the 21 hours spent by an average 15-year old in 2012 (OECD, 2017[2]). In Denmark and Korea, boys spend half an hour more online than girls on a typical weekend day, while in Israel, the opposite occurs – girls spend half an hour more online than boys during weekend days (OECD, 2017[2]). One quarter of students reported that they were extreme internet users during weekends, spending more than 6 hours a day

online, with 16% spending a similar amount of time online on weekdays. In Denmark and Sweden, the share of boys who could be considered extreme internet users is at least 10 percentage points higher than the share of girls (OECD, 2017[2]).

Children and young people are also increasingly using the internet on a variety of portable devices, where adult supervision might be more challenging. Smartphone ownership has become a common feature of teen life with nine out of ten 15-year-olds in the OECD having access to a smartphone, while three-quarters have access to a laptop, and just over half to a tablet (OECD, 2017[2]). Only 0.3% of 15-year-olds report never having accessed the internet (OECD, 2017[2]).

Figure 2. Between 2012 and 2015, the time spent online outside of school increased by 40 minutes per day on both weekdays and weekends



Note: "OECD average-27" includes all OECD countries with available data for both years.

Source: OECD (2017), PISA 2015 Results (Volume III) Students' Well-Being.

Two-thirds of OECD students are excited to discover new digital devices and applications and overwhelmingly agree it is very useful to have social networks online (84%) (OECD, 2017[2]). When online, social media apps are overwhelmingly popular, with almost three-quarters of students (73%) participating in a social network such as Facebook, while around three-fifths (62%) chat online daily or almost daily. There are distinct gender differences: playing online games is most popular among boys (56% vs. 13%), while girls are more likely to participate in social networks by uploading personally-created content compared to boys (78% vs. 69%) (OECD, 2017[2]). In the United States, girls are more likely than boys to say Snapchat is the site they use most often (42% vs. 29%), while boys are more inclined to identify YouTube as their preferred social media app (39% vs. 25%) (Pew Research Center, 2018[16]).

In OECD countries, the share of socio-economically advantaged students who play online games, chat online, or participate in social network daily is five percentage points higher than the share of disadvantaged students who do so. This disparity is particularly large in Mexico where there is more than 40 percentage points difference between online activities of advantaged and disadvantaged students (OECD, 2017[2]).

A little bit of internet use is positive, while excessive use has a negative impact on mental wellbeing

Digital technology has transformed the way children and young people interact and communicate with each other, express themselves and access valuable support networks. Parents, teachers, and young people themselves are confronted with new challenges regarding how best to use these technologies, while minimising risks. In the United States, around two-thirds of parents are concerned that young people are spending too much time in front of screens, with just over half (57%) setting screen time restrictions (Pew Research Center, 2018[17]). On average across OECD countries, 61% of 15-year-olds forget time when using digital devices and more than half (54%) reported feeling bad if no internet connection is available (OECD, 2017[2]).

The most robust studies suggest that moderate use of digital technology tends to be beneficial for children and young people's mental wellbeing, while no use or too much use can have a small negative impact (UNICEF, 2017[3]). The OECD's PISA survey

indicates that extreme internet users (more than 6 hours a day) were most likely to have lower life satisfaction and wellbeing. Moderate internet users (1-2 hours a day) had the highest life satisfaction, even when compared to those who used the internet one hour or less on a weekday (OECD, 2017[2]). Similarly, the World Health Organization has found adolescents who report very low or very high levels of internet use reporting the lowest life-satisfaction scores (World Health Organization, 2016[13]). A large-scale study of adolescents in England has also found a little bit of online activity was associated with higher levels of wellbeing than no screen time at all. The point at which wellbeing levels start to decline depended on whether it was a weekday or weekend day, as well as the type of digital engagement. Adolescents could use social media or play video and computer games for around 2 hours on weekdays and 4 hours on weekends before the detection of small negative effects (Przybylski and Weinstein, 2017[18]).

A small association between social media use and depression has been found (McCrae, Gettings and Pursell, 2017[4]), with a similar link found between anxiety symptoms and high daily social media use (Vannucci, Flannery and Ohannessian, 2017[5]). The multiple studies used to detect these correlations vary widely in methods, sample size and results, and the direction of the association remains unclear – that is, whether social media is contributing to elevated symptoms or social media is utilised more by those with anxiety and depression. For young children, results are often mixed. Using screen entertainment for more than 2 hours a day is found to be associated with emotional and conduct problems in 5-year-old girls (Griffiths et al., 2010[19]), while no association was found between playing electronic games for 3 hours or more and emotional and relational problems in 5 to 7-year-old boys and girls (Parkes et al., 2013[20]).

Greater social media use is associated with poorer sleep and poorer mental health

Almost three-quarters (72%) of US teens check for messages or notifications as soon as they wake up (Pew Research Center, 2018[17]). This pressure to be online is encouraged by platform features, including Snapchat's 'Snapstreak' feature that keeps count of the number of consecutive days you and a friend have sent each other a picture or video message with special emojis for

those who maintain contact for long periods, Facebook and Instagram likes on posts, and Twitter's retweet function.

Greater social media use, night-time specific social media use and emotional investment in social media are all associated with poorer sleep, and higher levels of anxiety and depression (Woods and Scott, 2016[21]). Again, it is not clear whether anxious adolescents use social media more, or depressed adolescents use social media to regulate their low mood.

Whereas most of these effects are small and the direction of cause and effect unclear, some impacts are large and well defined. For example, a significant association has been found between playing video games in the evening and sleep deprivation among teenagers, where a 30 minute increase in time spent on computer games increases the likelihood of reporting lack of sleep by 50% compared to the average (Billari, Giuntella and Stella, 2018[6]).

Digital platforms can provide help and foster a sense of social inclusion

Digital platforms are often an extension of young people's offline lives – a space to catch up with friends and talk about school, homework or plans for the weekend. Online platforms can provide a space where children and young people feel able to discuss topics that might be trickier in their offline lives.

With digital technologies being so readily accessible, children and young people are increasingly drawing upon information and support online. Digital health interventions, particularly computerised cognitive behavioural therapy (cCBT) for depression and anxiety in adolescents and young adults, have shown some promising signs (Hollis et al., 2017[22]). Organisations such as England's Digital Mentality create and develop apps specifically designed to support children and young people's mental health, while Digital Dog in Australia is developing a suite of online mobile apps, websites and games to help lower depression, lower suicide risk, reduce stress and promote wellbeing. Apps such as Rally Round allow parents, friends and carers to organise support for a child with an illness or challenging behaviour; BlueIce and CalmHarm helps young people manage their emotions and reduce urges to self-harm; while Catch It and SilverCloud help to manage feelings of anxiety and depression.

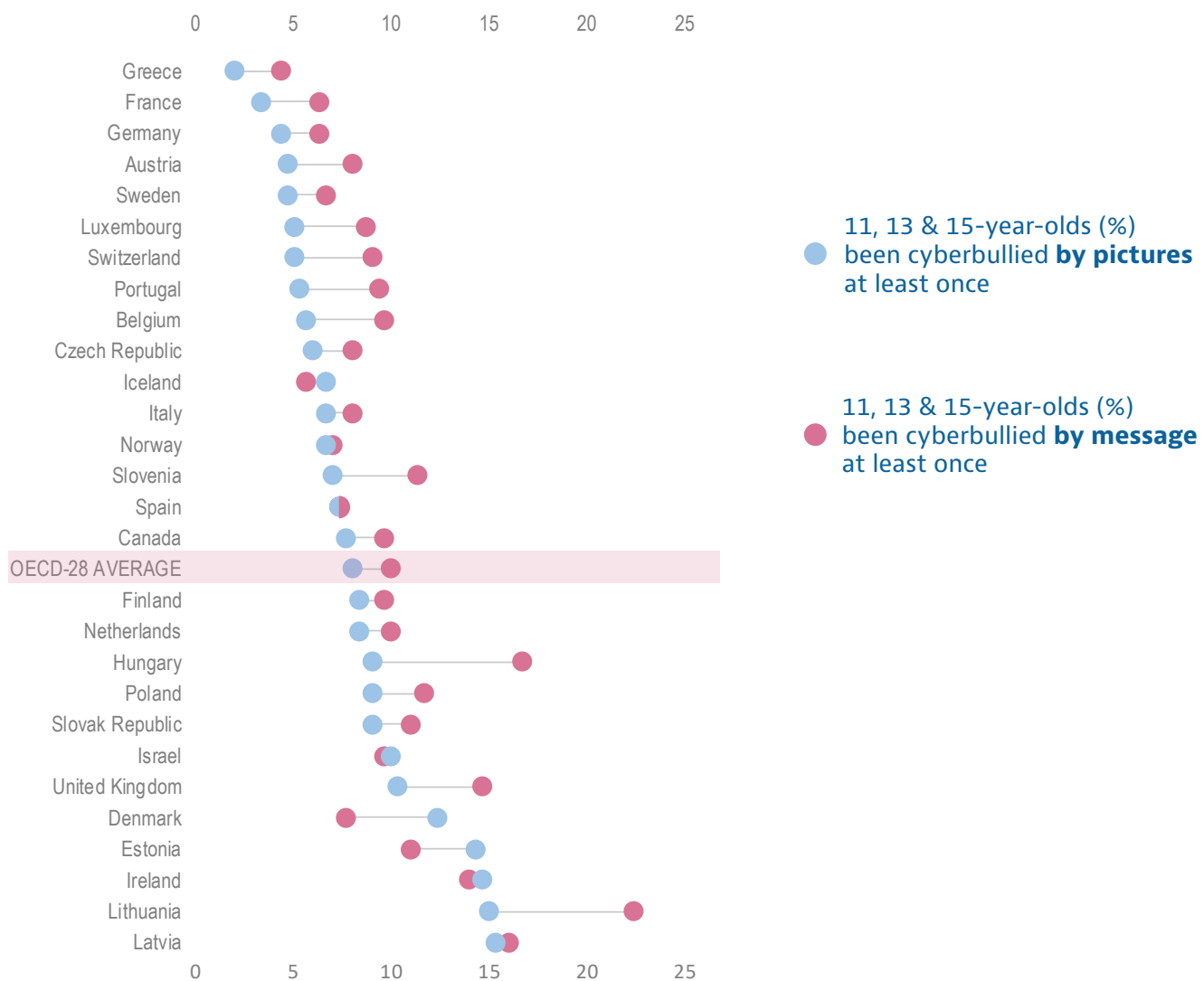
The ability to instantaneously connect with others can foster a sense of social inclusion among users who may feel excluded or who are seeking a welcoming community, including those who are autistic or have depression (Carras et al., 2018[23]). These channels can provide destigmatised spaces fostering the ability to share personal stories, enhance social networks, and learn about resources from peers, as well as gain information, insights and strategies for coping with challenges. Online safe spaces such as It's Ok To Talk in India and ReachOut.com in Australia allow children and young people to share experiences and seek online support with mental health, mental illness and wellbeing.

Digital platforms also provide tools for cyber-bullying

The digital space also introduces new risks and stresses into young people's lives. Bullying in school or by peers is sadly still too common but the pervasive nature of social media means that harassment can continue beyond the school gates, and can even take place anonymously. Just as with traditional forms of bullying, exposure to cyber-bullying – for instance the rapid creation and sharing of offensive messages or comments, spreading rumours, excluding victims from online groups and other forms of harassment – is associated with a wide range of negative outcomes, including depressive symptoms, substance use, ideation and suicide attempts (Bottino et al., 2015[24]).

There is evidence of a rise in cyber-bullying in some countries – whether this rise is in proportion to the increase in internet use, or because of increased awareness and reporting of cyber-bullying, is unknown (Livingstone, Stoilova and Kelly, 2016[7]). In other countries, there is evidence of a peak in incidence of cyber-bullying, especially where internet use has itself possibly peaked in terms of reach (Livingstone, Stoilova and Kelly, 2016[7]). The highest rates of cyber-bullying among OECD countries within Europe are found in Lithuania, Hungary and Latvia (World Health Organization, 2016[13]). While both forms of bullying are associated with poorer mental wellbeing, in-person bullying has been found to be more common (Livingstone, Stoilova and Kelly, 2016[7]) and has a much greater effect on wellbeing compared to cyber-bullying (Przybylski and Bowes, 2017[25]). Perpetrators of cyber-bullying are found equally among boys and girls and across teenage years. In contrast, boys and younger teenagers predominantly commit in-person bullying (Livingstone, Stoilova and Kelly, 2016[7]).

Figure 3. Teenagers have experienced higher rates of cyber-bullying by message



Note: Figures for the United Kingdom and Belgium have been averaged, unweighted.

Source: World Health Organization (2016), Growing up unequal: gender and socioeconomic differences in young people's health and well-being.

Social media is associated with body image concerns and disordered eating

There has been increasing awareness of the potentially harmful impact of promoting particular body images in traditional media, including mental health problems such as depression (Xie et al., 2010[26]). However, there has been limited research of the effect of promoting a narrow range of body images on social media. Social media is unique as it allows individuals to present the most attractive images of themselves and remove images they think are unattractive. It is also a popular forum to interact with peers, who are particularly influential on an individual's body image (Fardouly and Vartanian, 2016[8]).

Studies indicate that social media usage is associated with body image concerns among young men and women (Fardouly and Vartanian, 2016[8]), as well as linked to disordered eating (Holland and Tiggemann, 2016[9]). There is a need for more research on this issue, using a consistent definition and reliable measures of social media use, sampling the influence of different aspects of social media on body image, as well as a variety of social media platforms, on a diverse population (Holland and Tiggemann, 2016[9]).





Recommendations

The OECD Recommendation on the Protection of Children Online (OECD, 2012[27]) acknowledges that the internet has become a daily reality in children's lives, bringing both considerable benefits to their education and development, as well as exposure to online risks such as access to inappropriate content and abusive interaction with others, which could have a detrimental effect on their mental health. It includes a list of principles for governments and other stakeholders to follow in formulating policies for the protection of children online, and serves as the basis for the recommendations below.

EMPOWER children and young people to be responsible online participants

Children and young people should be empowered and supported to use digital technology well, so they can further reap benefits that social media provides. By talking with children about their use of social media, parents and carers should adopt an approach that works best for their child's age, interests and needs. This should be proportionate – maximising the protection against online risks without restricting the opportunities and benefits, or undermining the child's ability to explore, learn and express themselves. Supporting a child's exploration of the internet and enhancing their opportunities is important, including joining in with them via joint screen time activities.

Children should take as much responsibility as they can – whether it be reporting cyber-bullying of themselves or against others, or developing proactive coping strategies such as deleting messages or blocking unwanted contacts (Livingstone et al.,

BREAKOUT BOX

The Children's Commissioner for England's 'Digital 5 A Day'

The Children's Commissioner for England has produced a 'Digital 5 A Day' framework (Children's Commissioner for England, 2017[31]) to help children get the most from their time online based on the National Health Service's evidence-based 'Five steps to better mental wellbeing'. The framework provides easy to follow, practical steps to navigate safely online and achieve a healthy and balanced digital diet:

CONNECT recognises how the internet has enabled the maintenance of friendships and family relationships. It supports parents and carers having conversations with children about who they are connecting with and their privacy settings. It suggests keeping an open dialogue so parents and carers can understand how their child is spending their time online, as well as enabling children to seek help should they need to.

BE ACTIVE emphasises that all children should have time to switch off and get moving, with too much time online often resulting in children feeling grumpy, tired and stressed. Researching an activity or place online before going out is a good way of combining online and offline activity and provides an opportunity to use the internet together.

GET CREATIVE highlights the internet's ability to provide children with opportunities to learn and to be creative, whether coding to building complex structures in Minecraft or creating video content. It discourages children to spend time online passively consuming content.

GIVE TO OTHERS includes posting positive messages, reporting hateful comments, blocking trolls, and not sharing content that is fake or might hurt others, as well as encouraging children to help friends, family and their community offline as well.

BE MINDFUL underscores that children often feel pressured by the constantly connected nature of the internet and that it can be difficult for them to put their phones down when apps are encouraging them to engage. Parents and carers can help children to come up with ways of managing this, such as logging the amount of time they are spending online or using an app to help them with time management.

2014[28]). For instance, Facebook has developed a Bullying Prevention Hub which contains resources for teens, parents and educators seeking support and help for issues related to bullying and other conflicts (Facebook, 2013[29]).

Schools should develop digital literacy, providing young people with digital skills to recognise risks such as cyber-bullying and excessive use of social media, as well as strengthening emotional resilience, empathy and reaching out. A systematic review of classroom-based body image programs found those which were effective were conducted among younger adolescents and included activities focusing on media literacy, self-esteem and the influence of peers (Yager et al., 2013[30]).

EDUCATE families about appropriate digital use and risks

By developing digital knowledge and confidence, parents and carers can actively engage with technology and model constructive and balanced digital habits (Blum-Ross and Livingstone, 2016[32]). Any approach should account for the differences in parents' media proficiency, which is influenced by socioeconomic status, educational background and family structure (Nikken and Oprea, 2018[33]).

Governments should promote parental controls for different devices, as well as encourage co-viewing of content with children to help children understand what they are seeing and apply it to the world around them. In Germany, education is

BREAKOUT BOX

Internet addiction in Korea

The diagnostic criteria for internet addiction is not agreed. In addition, it is often associated with comorbid psychiatric disorders including depression, anxiety, ADHD, obsessive-compulsive symptoms, hostility/aggression (Poli, 2017[37]). In Korea, internet addiction is defined as overuse with symptoms including high anxiety or nervousness when not using a smartphone or reliance on virtual world, causing hindrance to normal daily life (Korean Internet & Security Agency and Ministry of Science and ICT, 2017[38]). Korea was the first country in the world to develop a national policy and allocate a budget to the region's high prevalence of gaming and internet-related problems (Koh, 2017[39]). According to the Korean Government's '2016 Smartphone, Internet Addiction Survey', 1.2% of children between 3 and 9-years-old and 3.5% of teenagers were at high risk of being addicted to their smartphones or the internet. Children and teenagers who had parents addicted were at an increased risk of addiction themselves (23.5% and 36.0% respectively) (Korean Internet & Security Agency and Ministry of Science and ICT, 2017[38]).

The Korea Youth Counselling and Welfare Institute provides prevention and counselling services for young people including for depression, anxiety, adjustment difficulties, and family conflict issues. Counselling is available individually, in groups or via telephone, as well as at home when an individual has cut themselves off from social relationships in the real world. In extreme cases internet abstinence rehabilitation camps are offered by the National Center for Youth Internet Addiction Treatment (King et al., 2018[34]) where young people receive a range of treatments for 12 days, including opportunities to engage in outdoor sports and activities (Koo et al., 2011[40]).

provided to parents about possible risks of online activities; while in Japan, legislation has funded increased education on appropriate internet use and promoted internet filtering and monitoring to parents (King et al., 2018[34]).

To provide families with helpful guidance, there is a need for further research and improved measurement to address the lack of comparable data on children's mental health and wellbeing, as well as their internet and social media use, what content they are viewing and how they are interacting with it. There is a particular need for research covering primary school-aged or younger children, as children are utilising digital technologies at ever-younger ages (Hooft Graafland, 2018[35]).

ENCOURAGE industry to develop appropriate and accessible content

Governments should encourage online broadcasters, digital developers and entrepreneurs to produce technology that fits a child's development via 'age-appropriate' content, as well as ensure inappropriate content is not accessible.

Companies are starting to respond to these calls, enabling easy-to-use safety features that are accessible to those with basic digital literacy (Livingstone et al., 2014[28]), with Microsoft, Sony, and Nintendo providing online guides and video demonstrations on setting time limits and content restrictions on their gaming systems (King et al., 2018[34]). Apps are now available to help limit children and young people's screen time and track their online activity, whether tracking and setting limits on daily social media usage via Moment; comparing screen usage to those the same age and gender using AntiSocial, or using Space and App Detox to set screen locks and time use goals.

In response to this demand, Google, Apple, Facebook and Instagram are also introducing new tools

for users to monitor daily use and set screen time limits. While the availability of these tools is welcome, there is no evidence yet that demonstrates these tools reduce screen time on their own, although they could act as an additional factor in encouraging children to moderate their time online.

ENSURE children and young people who show signs of mental illness get help early

It is imperative to intervene early when children and young people show signs and symptoms of mental illness. Despite high prevalence of moderate mental disorders amongst young people in OECD countries, specialist services are disproportionately focused on adults. Child and adolescent mental health services tend to treat individuals with the most severe disorders and the most acute needs. An investment in services for children and young people within the mental health system should be supported by attention to mental health and mental illness in schools and other services for children and young people (OECD, 2014[15]). In the United Kingdom, young people in Blackpool have started a Resilience Revolution, seeking to build the emotional resilience and wellbeing of young people and prevent serious mental health issues before they develop via a series of social media accounts on YouTube, Twitter and Facebook and provision of online mentoring (Centre for Resilience for Social Justice, 2018[36]).



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Almost half of the world is connected to the internet, and in countries that are members of the OECD almost everyone is online. For children and young people today, being online and using social media have become an integral part of their lives. In 2015, a typical 15-year-old from a country that is a member of the OECD had been using the internet since age 10 and spent more than two hours every weekday online after school, and more than three hours on a weekend day.

This reliance on digital technology has fuelled concerns from parents, teachers, governments and young people themselves that digital technologies and social media are exacerbating feelings of anxiety and depression, disturbing sleep patterns, leading to cyber-bullying and distorting body image.

As the rapid take-up of digital technologies and social media by children and young people continues, it is crucial to adopt an approach that minimises the risks without restricting the considerable opportunities and benefits digital technologies and social media have to offer.

The OECD is uniquely placed to help countries address children and young people's mental health challenges in the digital age.

