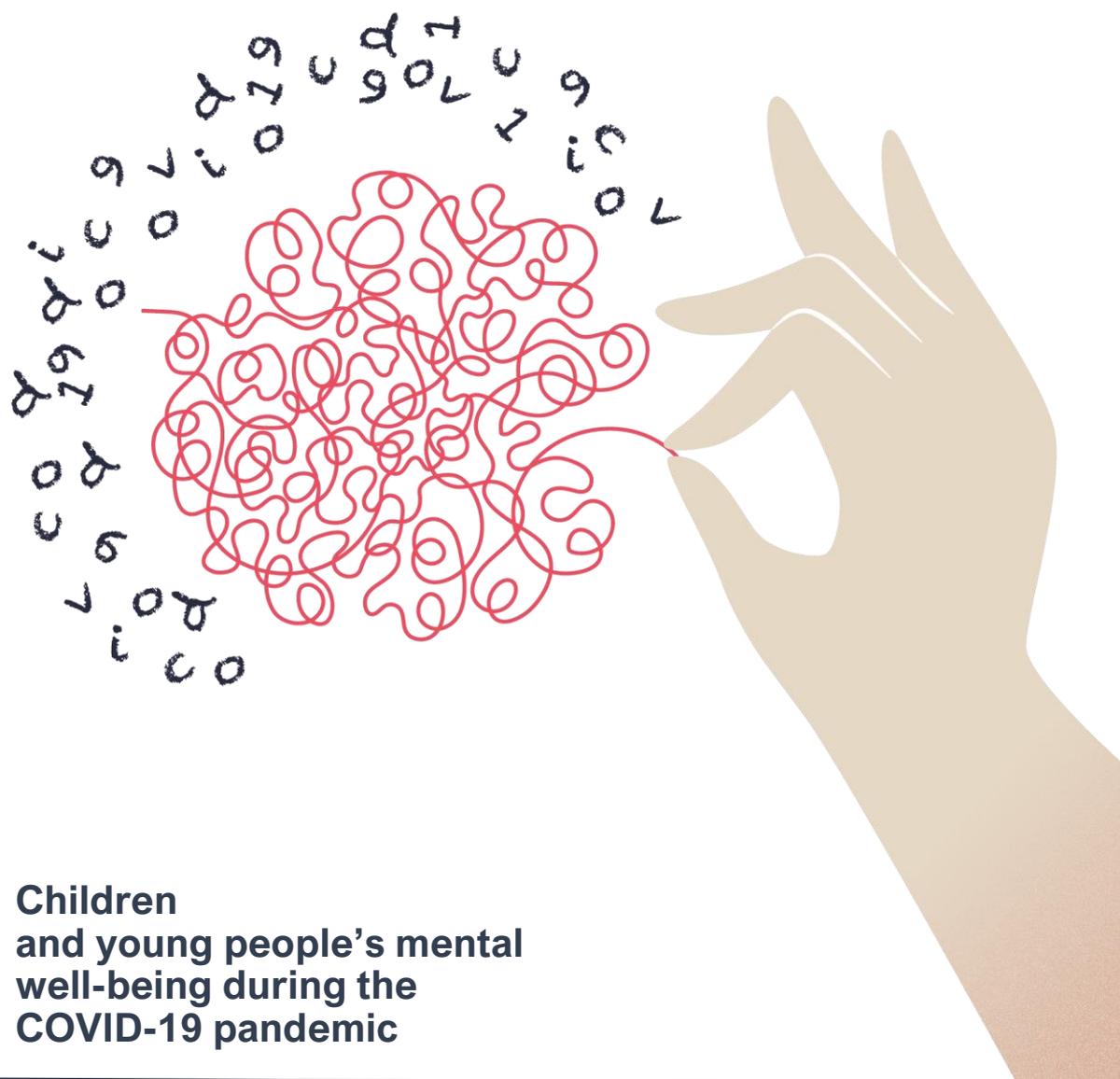


# Children and young people's mental well-being during the COVID-19 pandemic

May 2021





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Prepared for Public Health Wales

### Acknowledgement

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# CONTENTS

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Project background and structure of the report .....	1
<hr/>	
<b>PART1 Review of the Literature</b> .....	<b>3</b>
Enhancing Control .....	4
Background and summary of findings .....	4
Parental sense of control.....	4
Young people’s knowledge and understanding .....	5
Self-efficacy and confidence .....	6
Increasing Resilience and Community Assets .....	8
Background and summary of findings .....	8
Emotional well-being .....	9
Health behaviours .....	10
Physical activity and screen time .....	10
Sleep, diet & alcohol use .....	11
Coping behaviours and resilience .....	12
Social support .....	13
Learning and development for babies .....	14
Facilitating Participation and Inclusion .....	16
Background and summary of findings .....	16
Sense of belonging and feeling involved.....	16
Education.....	18
Wider Determinants, Inequalities, and Population Characteristics.....	20
Background and summary of findings .....	20
Unemployment, class, and poverty .....	20
Age, gender, and sexuality.....	21
Vulnerability, disability, and health.....	22
<hr/>	
<b>PART2 Data Analysis</b> .....	<b>23</b>
Background and Key Findings .....	24
Children Aged 5 To 11 Parents Completed SDQ .....	28
Emotional symptoms subscale .....	29
Hyperactivity/Inattention subscale.....	35
Peer relationship subscale .....	39

Conduct subscale .....	42
Prosocial subscale .....	45
Children aged 10 to 15 Self-completed SDQ .....	46
Young people aged 16 to 24 .....	51
Well-being score .....	53
General happiness .....	55
Unhappy or depressed .....	56
Losing confidence .....	57
Ability to make decisions .....	58
<hr/>	
Conclusion .....	61
References .....	63
Appendix .....	70

# Project background and structure of the report

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Breakdown of the reviewed literature	Number of papers
<b>Total number of papers: 84</b>	Peer reviewed: 74
	Grey literature: 10
<b>Number of countries covered: 22</b>	UK based: 14
	Non-UK based: 70
<b>Ages covered: 0-25</b>	Covering babies, children, or adolescents: 44
	Covering young people: 33
	Covering combined age groups: 7
<b>Number of methodologies used: 3</b>	Surveys: 68
	Literature review: 5
	Discussion: 11

Public Health Wales commissioned Alma Economics to review the evidence on the impact of the COVID-19 pandemic and the associated government measures on the mental well-being of babies, children, and young people. The health repercussions of this new virus are relatively mild when it comes to children and young people (Alfvén 2020). However, the provisions and measures that were put in place to stop the spread—especially in terms of social isolation and school closure—are likely to affect the lives and well-being of the younger generation disproportionately at a crucial time in their emotional and physical development.

Fear, worry, and stress are normal responses to threats, uncertainty or the unknown. It is normal and understandable that people are experiencing increased anxieties during the COVID-19 pandemic (WHO 2021). It is to be expected that people, including children and young people, will experience a range of emotions and changes to mental well-being during a global public health emergency. This review is focused on furthering understanding of how the COVID-19 pandemic has impacted on the factors that can help promote and protect mental well-being and resilience through this challenging time.

This report aims to carry out a thorough review of the evidence of issues relating to children and young people's mental well-being up to the age of 24 due to the COVID-19 pandemic and related factors and measures. It will provide a narrative synthesis that summarises the characteristics and findings of the literature. It will also include an analysis of data from Understanding Society to describe recent changes in mental well-being<sup>1</sup>. Public Health Wales will use the report findings to support a Mental Well-being Impact Assessment (MWIA) of the impact of COVID-19 on children and young

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<sup>1</sup> Understanding Society is a large longitudinal study that provides information on changes and stability of people's lives in the UK.

people aged 10 to 24 years to inform policy and decision-making among stakeholders in Wales.

Understanding the impact of COVID-19 is still an emerging area of research, especially in terms of overarching narratives and long-term repercussions. Nonetheless, the topic is well-tackled in the literature, with many small- and medium-scale studies attempting to disentangle the impact of the pandemic on the mental well-being of children and young people worldwide. Additionally, publicly available data from Understanding Society, intended to capture the immediate impact of the virus, will be used to compare well-being outcomes before and during the COVID-19 pandemic.

This rapid evidence review is divided into two parts. Part 1 collates, reviews, and assesses the findings of the literature. This part is structured in four chapters, each tackling one of the core protective factors in the Mental Well-Being Impact Assessment Toolkit (Cooke et al. 2011). The first chapter examines the impact of the virus on the sense of control, knowledge, understanding, and self-efficacy. The second tackles increasing resilience and community assets, that deal with emotional well-being, changes in health behaviours, coping behaviours, social support, and learning and development. The third includes facilitating participation and inclusion and discusses COVID-19's impact on children and young people's sense of belonging and the impact of education disruptions. The latter is of specific importance as it is a cross-cutting issue across all protective factors discussed in this report. The fourth chapter tackles wider determinants and population characteristics, examining how the impact can be exacerbated or attenuated based on socio-economic background, demographic characteristics, and baseline health and well-being<sup>2</sup>. While some of the literature can be neatly classified in the above list, most of the papers overlap significantly reflecting the interrelated and complex nature of the determinants of mental well-being.

Part 2 undertakes data analysis to explore the evolution of mental well-being outcomes for children and young people during the COVID-19 pandemic. Since the beginning of the pandemic, Understanding Society has been running a regular survey for households in the UK to capture its socio-economic and health consequences. The same individuals were also surveyed in 2019, which makes it possible to compare outcomes pre- and during the COVID-19 pandemic. The outcomes considered are the changes in children and young people's average well-being. The outcomes for Wales will also be compared to that of the rest of the UK.

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<sup>2</sup> The method used to collect the literature and assess whether it should be included or excluded is described in the Appendix.

## Children and Young People's Well-being during the COVID-19 Pandemic

PART 1

# Review of the Literature



**Chapter 1**

# Enhancing Control

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## Background and summary of findings

This section reviews studies that identify the impact of the COVID-19 pandemic on children and young people's mental well-being—in particular, what has been learned about 'enhancing control' as a protective factor. Research to date has focused on children, adolescents, and students. Most data are collected via cross-sectional online surveys seeking parental reports of well-being and/or self-reports by children and young people themselves. Such data can give a snapshot of the current health status but cannot identify what is influencing it, nor how persistent the problems are.

The results indicate that parental sense of control has a strong influence on children's mental well-being. The children of parents who feel stressed or struggle to deal with the pandemic tend to score lower on well-being measures (Adegboye et al. Forthcoming; Cusinato et al. 2020; Gabor et al. 2020, Orgiles et al. 2020; Spinelli et al. 2020). In terms of knowledge and understanding, young people seem to exhibit high awareness of how to combat the virus in terms of washing hands and physical distancing (Riiser et al. 2020; Xue et al. 2020). To an extent, this awareness is positively associated with their well-being. Adverse outcomes arise from the concern of young people for the health of older relatives as well as concern over the lack of supplies and resources in hospitals (Rogers, Ha, and Ockey 2021; Tasso, Hisli Sahin, and San Roman 2021). Findings on the prevalence of self-efficacy, confidence, and hope among young people are mixed. Yet, there is a consensus that these characteristics can act as a buffer against anxiety and depression (Copeland et al. 2020; Wen et al. 2020).

## Parental sense of control

Parental mental health is a well-established factor that impacts children's mental well-being (Spinelli et al. 2020). Data on the COVID-19 pandemic indicates this continues to be the case. Spinelli et al. (2020) examine the relationship between parent and child well-being. Surveys of 854 Italian parents (93% mothers) of children aged 2 to 14-years-old indicated that COVID-19 infection risks are not associated with parental or child well-being. However, parental perceptions of difficulty dealing with quarantine (parental low sense of control) is associated with higher levels of parental stress. This, in turn, is associated with children's well-being, as assessed by the Strengths and Difficulties Questionnaire (SDQ)<sup>3</sup>. It may be that poor parental mental health adversely skewed their SDQ reports of their child. However, the authors suggest child mental well-being could be protected by promoting parental knowledge, skills, and resources about how to talk to children.

The study by Cusinato et al. (2020) also highlights the role of parental well-being. Their survey of 463 Italian parents (90% women) of children aged 5 to 17 years, and following 50 days of isolation, identified a negative association between parental stress and children's well-being scores, although it

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<sup>3</sup> SDQ is a questionnaire for emotional and behavioural difficulties in children and young people aged 3-16 years. The questionnaire contains 25 items, also called personality attributes. These attributes are grouped into five subscales: emotional symptoms, conduct, hyperactivity, peer relationship, and prosocial behaviour.

should not be inferred that one drives the other. Although this study identified overall good levels of child well-being during lockdown, parents reported higher levels of child hyperactivity compared to normative data. This is in line with recent findings that hyperactivity is a common reaction in children during confinement (Cusinato et al. 2020). The study is constrained by the possibility of sampling errors (for example, having only one child in mind, likely the most disruptive) and the lack of father respondents who may describe their own and their child's well-being differently to mothers.

Orgiles et al. (2020) also located a significant relationship between parental stress and child well-being through behavioural changes. In a survey of 1,143 parents of Italian and Spanish children (aged 3 to 18 years), 85.7% perceived changes in their children during lockdown, spanning difficulty concentrating (76.6%), boredom (52%), irritability (39%), restlessness (38.8%), nervousness (38%), feelings of loneliness (31.3%), uneasiness (30.4%), and worries (30.1%). However, given that the study does not use standardised measures, the severity and clinical relevance of these changes and their persistence over time remains unclear.

Parents' stress is also related to children and adolescents' reported well-being in a Hungarian study (Gabor et al. 2020). Looking at 346 parent-child pairs in March 2020 and in April 2020, the authors observed a significant but weak relationship between parents' and children's stress levels and well-being. Children of parents who expressed fear from the situation exhibited lower levels of well-being. Surprisingly, household income and place of residence showed no significant relationship to the psychological factors examined. This study is limited by potential contamination since the children and the parents were not required to fill in the survey separately.

Parent-child relations were also deemed important in a UK study by Adegboye et al. (Forthcoming); it reported significant adverse impacts of lockdown on child mental health, parental mental health and family relationships in high-risk families. They compared pre-pandemic data with that of the first lockdown, based on 142 children (aged 4 to 7 years) who had been identified 17 months previously by teachers as being at high or very high risk of emotional and behavioural problems. High or very high SDQ scores were reported for 68% of the sample, significantly higher than the already high pre-pandemic levels of 61%. The prevalence of internalising problems (a combination of emotional and peer problems) rose substantially from 34% to 44%, driven by significant increases in generalised anxiety, panic, and somatic symptoms (potentially increased by attention to risk and illness), and school anxiety. Social anxiety decreased; there was no increase in externalising problems, suggesting some children were calmer not attending school. Overall, being at-risk pre-pandemic translated into significantly worse emotional and behavioural well-being for many children. Poor parental mental health impacted children's well-being via financial stress and hostile family relationships, which can disrupt family stability and routine, in turn increasing anxiety and behavioural problems in children. Children with better outcomes were in families with fewer financial strains, parents with better mental health and better parent-child relationships. The authors concluded that parents need both financial and mental health support to protect children's mental health.

## **Children and young people's knowledge and understanding**

Some studies examined the relationship between children's knowledge and understanding of the pandemic and their mental well-being. Xue et al. (2020) surveyed 1,650 primary school children in the Hubei province, the epicentre of the pandemic in China. Children reported relatively good awareness of COVID-19 and optimism for the future. Children with depressive or anxiety symptoms were more likely to have lower levels of correct knowledge, attitudes, and practices, pointing to the role of child knowledge, skills, and resources in protecting mental well-being (although the direction of the

relationship may flow the other way around). It is important to note that, given the different cultural and political context, these findings may not be generalisable to other countries.

Based in Indonesia, Wiguna et al. (2020) with a sample of 113 mostly home-schooled adolescents (with a mean age of 14 years), reported a significant association between conduct problems (self-reported SDQ) and having unnecessary mental health information; 'unnecessary', however, was not defined. A high proportion of adolescents were at risk of peer-relationship problems, pro-social behaviour problems, and conduct behaviour but not emotional problems. Dissatisfaction with parental and friend support increased the risk for SDQ total difficulties scores as well as conduct behaviour, peer-relationship problems, and pro-social behaviour problems, suggesting satisfaction with parental and friend support could be a protective factor. The authors recommended clear COVID-19, health, and mental health information for adolescents and their families as well as support for parents to manage home schooling, adolescent stress and anxiety, and activities outside schooling. However, the study did not address other factors that might impact adolescent well-being, such as screen time, chronic illness, or parental stress.

Riiser et al. (2020) described adolescents' health literacy and health information and knowledge as well as its association with several measures like quality of life and mental well-being in Norway. The participants had good knowledge of how to deal with the virus, like washing their hands and avoiding social contact, mostly through information obtained from the media and their families. The findings indicated that health literacy is positively correlated with health-related quality of life. However, the authors concluded that there is a cost to compliance, especially in terms of social distancing and limiting physical contact. This is because these measures, although temporary, go against aspects that are important for adolescents' quality of life.

The evidence also suggests that concerns over lack of supplies in hospitals and relatives becoming severely ill have contributed to young people's mental health and well-being (Tasso, Hisli Sahin, and San Roman 2021; Rogers, Ha, and Ockey 2021). A study conducted with college students in the US reveals that young people's mental health symptoms were associated with concerns about lack of supplies in hospitals and fears of family members and individuals themselves being infected and becoming severely ill (Tasso, Hisli Sahin, and San Roman 2021). This resonated with findings from another study conducted in the US, where adolescents expressed concerns about their parents or grandparents getting infected with the coronavirus. They were also concerned about spreading the virus themselves (Rogers, Ha, and Ockey 2021). These concerns and fears were also negatively correlated with trust in government's management of the pandemic (Tasso, Hisli Sahin, and San Roman 2021).

## Self-efficacy and confidence

As part of their annual survey, the Prince's Trust Tesco Youth Index (2021) gathered data from 2,180 16–25-year-olds. Although the sample was self-selecting and may be biased, the scores on emotional health, work, and education were the lowest ever recorded by the Youth Index. This suggests that young people's mental well-being and quality of life declined, with almost a quarter of them feeling unconfident about their prospects, especially in relation to future employment prospects. As the survey does not use standardised mental well-being measures, the clinical significance of these findings is unknown. More positively, nearly 75% of the sample felt that their generation could change the future for the better and 66% wanted to fight for a better future.

Wen et al. (2021) investigated hope, self-efficacy, insecurity and stress amongst Chinese university students during the pandemic. Insecurity was defined as the premonition of possible physical or

psychological danger, as well as the individual's ability to cope in a crisis. Based on 5,286 respondents to an online survey, results indicated that the more students felt insecure, the more their anxiety rose. Hope and self-efficacy seemed to buffer the effects of insecurity on stress (for example, positive beliefs may alleviate some of the damaging consequences of uncertainty, which may reduce stress). People with high self-efficacy were more likely to adopt problem-oriented rather than emotion-oriented coping strategies which can reduce stress. The authors suggested that hope can be promoted by setting and pursuing personal goals. However, the study is limited in being correlational, self-reported, and China-based; students' culture and the experiences of the pandemic are likely to be very different to those of UK students.

Copeland et al. (2021) administered the Brief Problem Monitor, alongside other items, to assess emotional and behavioural functioning in approximately 600 first-year college students in the US at the start of the spring semester (pre-pandemic) and the end of the semester. Externalising and attention problems increased significantly, but not internalising problems. The students remained hopeful for the future. There was a small advantage to being a part of a university wellness programme. However, it was not possible to determine which aspects of the intervention contributed to this advantage (for example, self-help and the sense of community or students' pre-existing interest in health promotion). This study is limited by its sample, which is predominantly white and female, but it helps in comparing pandemic data with pre-pandemic levels of well-being.

**Chapter 2**

# Increasing Resilience and Community Assets

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## Background and summary of findings

This section discusses the literature findings on protective factors related to increased resilience and community assets. It delves into the implications of the pandemic on emotional well-being, health behaviours, coping behaviours, and social support. It also discusses implications of learning and development outcomes for babies (aged 0 to 2) because of changes in babies' behaviour and on parental well-being during lockdown.

When it comes to emotional well-being, a review of research following previous pandemics suggests that anxiety and depression symptoms in children and adolescents vary based on several factors but tend to increase (C Fong and Iarocci 2020). This is supported by the studies reviewed in this section. Most studies report a decline in well-being, especially in terms of increased anxiety (Adegboye et al. Forthcoming; Akkaya-Kalayci et al. 2020; Aslan, Ochnik, and Çınar 2020; Children's Commissioner for Wales 2020; Dragun et al. 2021; Orgilés et al. 2020; Rogers, Ha, and Ockey 2021; Sun, Lin, and Chung 2020; Zhang et al. 2020). Age seems to play a significant role, as the decline in well-being is more prevalent in adolescents than children. Variation across other demographic and socio-economic characteristics will be discussed in detail in Chapter 4.

Children and adolescents' health behaviours are linked to their well-being in a variety of ways. The studies reviewed indicate mixed findings on the impact of the pandemic on health behaviours. For example, some report a decline in exercise potentially due to the closure of gyms and organised sports (Copeland et al. 2021; Dragun et al. 2021; Imran, Zeshan, and Pervaiz 2020). Others, however, reveal an increase in physical activity, likely due to more free time and government allowances to exercise outdoors (Thomas et al. Forthcoming; Sañudo, Fennell, and Sánchez-Oliver 2020). Studies exploring the impact of health behaviour changes on well-being converge that adverse changes (for example, sleep disruptions and unhealthy diets) exacerbate negative emotions like anxiety and depression (Hyun et al. 2020; Tso et al. 2020).

Coping behaviours vary across individuals and circumstances. Negative coping tends to include behaviours like avoidance and keeping one's feelings to oneself. Positive coping behaviours include help-seeking, problem solving, and actively reappraising (Zhang et al. 2020). The studies reviewed suggest that most children and adolescents engage in positive coping mechanisms to some extent, including physical activities, connecting with friends, and taking up new hobbies (Branquinho et al. 2020; Dvorsky, Breaux, and Becker 2020; Glynn et al. 2021; Pigaiani et al. 2020; The Children's Society 2020).

Social support is a key factor in resilience and positive coping, and it is important to consider how social support has changed during the pandemic. This includes how children and adolescents perceive the changes in social opportunities and how family dynamics shift, including the role of parental stress on children's outcomes. This section is intrinsically linked with the 'parental sense of control', discussed in Chapter 1, and the 'sense of belonging', addressed in Chapter 3. The findings indicate that loneliness, isolation, and strained family relationship harm mental well-being.

Finally, the well-being of babies and their parents has been impacted by the pandemic. While there have been some positive changes due to more time spent at home, many parents report that their babies exhibit more clinginess and more crying since the start of the lockdown. This was especially the case for younger parents and parents from lower socio-economic backgrounds. Many of the parents also declare being more anxious and having concerns about their own mental well-being (Saunders and Hogg 2020). This may have implications for their infants and babies' well-being, as discussed in Chapter 1 of this report.

Changes in access to education due to school and university closures are also a crucial factor in resilience and community assets. This is because it has strong implications on the learning and development outcomes for children and young people as well as on their social networks and relationships. Indeed, education is such an important and cross-cutting issue that its disruption has an impact on most protective factors analysed in this report. While some of the literature discusses these impacts, most studies focus on implications for participation and inclusion. As such, the impact of educational disruption on all protective factors is discussed in Chapter 3 of this report.

## Emotional well-being

Starting with children, a qualitative survey of 3 to 18-year-olds in Wales (Children's Commissioner for Wales 2020)<sup>4</sup> found that most children and young people were coping well. Most of the children (84%) said they felt safe most of the time, and 58% said they felt happy most of the time. Although 37% were not worried about COVID-19, those who were worried expressed anxieties about the length of the pandemic and fear for loved ones. On the other hand, a study of children (4 to 7 years) who are at-risk of mental health problems in Wales (Adegboye et al. Forthcoming) found that emotional and behavioural difficulties increased significantly during the pandemic period. This was particularly true of anxiety. Both parental mental health and financial strain during the lockdown influenced children's well-being. This study only examined children who were already at risk of mental health problems. Whether the outcomes are similar for other children remains unclear.

Parent reports of the immediate impact (after one month) of lockdown on 3 to 18-year-old children in Italy and Spain (Orgilés et al. 2020) found that the vast majority (over 80%) reported changes in their children's emotional state. Spanish children were reported to have more difficulties than Italian children, especially in terms of the time they could spend outside their homes. This was potentially due to stricter lockdown measures. It should be noted that this was based on parental report and reflection, which may be biased by a caregiver's current state. This is particularly relevant because caregivers who viewed the situation as more serious for their families also reported that their children had more issues.

As for adolescents' and young adults' mental health, most research involved self-report and reflection on their well-being status in comparison to how they felt before the pandemic. For example, a group of adolescents (14 to 17-year-olds) in the US (Rogers, Ha, and Ockey 2021) reported that their positive emotions decreased, and their negative emotions had increased since the start of the pandemic. Similarly, 15 to 25-year-olds in Austria and Turkey (Akkaya-Kalayci et al. 2020) reported that they felt more anxious, depressed, and less in control than before the pandemic. Undergraduate students in Turkey (Aslan, Ochnik, and Çınar 2020) and Hong Kong (Sun, Lin, and Chung 2020) also reported stress, anxiety, depression, and/or low satisfaction with life.

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<sup>4</sup> Children's Commissioner for Wales produced a report of an updated survey in January 2021 available at: <https://www.childcomwales.org.uk/coronavirus-our-work/coronavirus-and-me-survey-results-2021/>

Few studies specifically compared differences in emotional well-being and rates of depression and anxiety during the pandemic relative to pre-pandemic measures. One survey of teenagers in China found that depression and anxiety symptoms were higher than the previously reported rates in a different sample (Zhang et al. 2020). This was also true of a study of US university students with measures taken from one group in 2019 and another in the spring of 2020 (Rogers, Ha, and Ockey 2021). A small but significant increase in depression (during versus pre-COVID) was revealed for adolescents in the US sample. Decreases in quality of life, happiness, and optimism were also established for Croatian adolescents and medical students (Dragun et al. 2021).

The Tesco Youth Index (Prince's Trust 2021) in the UK found that young people (16 to 25 years) scored lower on emotional health, especially in terms of anxiety, than they did in previous years. This was particularly true of those who were not in work, education, or training. In contrast, a survey of adolescents in the Netherlands found no difference in reported depressive symptoms or negative emotions two years prior to the pandemic versus during the pandemic (Janssen et al. 2020).

A study in China found that rates of internalising disorders (i.e., anxiety and depression) were higher in high school students than junior high school students (Zhang et al. 2020). This evidence matched the findings from a Hungarian study, where adolescents reported feeling more scared than children younger than 14 years (Gabor et al. 2020). Relatedly, a qualitative survey in Wales indicated that secondary school-aged children felt more negative emotions than primary school-aged children. They also expressed increased concerns about learning in comparison to their younger peers (Williams 2020).

## Health behaviours

### Physical activity and screen time

A survey of first-year university students in the US found that reported time exercising decreased from the beginning to the end of the spring semester in 2020 (Copeland et al. 2021). Secondary and medical students in Croatia increased their sedentary behaviour relative to reports from 2018. This was suggested to be due to online learning (Dragun et al. 2021). Parents of children and adolescents in Spain and Italy also reported that their children engaged in less physical activity during the pandemic, but this relied on parents' recollection rather than measuring outcomes pre- and during lockdown (Imran, Zeshan, and Pervaiz 2020).

In contrast, a survey of young adults in the UK found that the participants who were less active at the beginning of lockdown increased their activity levels from February to April (Thomas et al. Forthcoming), with women increasing their activities more than men. The authors attributed this to the surge in 'acceptable' activities such as walking or cycling or a reason to leave home during the restriction. However, it could also be due to other factors like improved weather or an increase in free time. Likewise, a study of young adults in Spain discovered that participants increased their walking time and physical activity relative to before the lockdown (Sañudo, Fennell, and Sánchez-Oliver 2020). Thus, it appears that lockdown had an adverse impact on physical activity for some individuals but increased physical activity for others.

Physical activity and emotional well-being are intricately linked both during the pandemic and more broadly. A study in Turkey found that physical inactivity related to perceived stress (Aslan, Ochnik, and Çınar 2020) and research on adolescents and young adults in Croatia found that sedentary behaviour was related to a decline in the quality of life and an increase in perceived stress and anxiousness (Dragun et al. 2021). In a study that measured change in physical activity between

February and April in the UK, young adult participants who became more active over this period showed an increase in well-being, while those who became less active showed a decrease in self-esteem (Thomas et al. Forthcoming).

In contrast, a broad survey of adults from over 60 countries found no relation between the amount of exercise and anxiety symptoms (Varma et al. 2020). In light of the above discussion, this points to the fact that some adolescents may use physical activity as a coping mechanism, whereas others may engage in less physical activity due to depression or lack of motivation. These factors are likely to have bidirectional effects on one another.

An increase in screen time is often viewed as the opposite of physical activity for children and adolescents. An increase in screen time and sedentary behaviour was reported for college students in the US (Copeland et al. 2021), teenagers in Canada and Australia (Ellis, Dumas, and Forbes 2020; Hawke et al. 2020; Bates et al. 2020; Munasinghe et al. 2020), children and adolescents in Italy and Spain (Imran, Zeshan, and Pervaiz 2020), and children in Turkey (Adibelli and Sümen 2020) and Hong Kong (Tso et al. 2020). Although an increase in screen time was sometimes associated with behavioural problems (Tso et al. 2020), it was also viewed as a social outlet and a way to connect with friends and engage in passive entertainment (Wilcox et al. 2020). Increased screen time was in some cases inevitable due to the nature of remote education. Thus, although screen time has increased, it does not appear to date to have had universal adverse outcomes.

## Sleep, diet, and alcohol use

A survey of US university students found decreases in sleep from the beginning to the end of the spring semester (Copeland et al. 2021). A study of Italian university students and staff also found a worsening of sleep quality and an increase in insomnia (Marelli et al. 2020). Relatedly, a survey of US young adults found high rates of sleep problems at the beginning of the pandemic (Hyun et al. 2020). Similarly, a study of Canadian children and adolescents found a disruption in sleep schedule and quality (Bates et al. 2020). In contrast, research in Canada (Gruber et al. 2020; Hawke et al. 2020), Croatia (Dragun et al. 2021), Spain (Sañudo et al. 2020), and Turkey (Adibelli and Sümen 2020) indicated increases in the amount of sleep children and adolescents got. In the Croatian study (Dragun et al. 2021), participants reported feeling less tired and sleepy after waking up during the pandemic than two years prior to the pandemic. For adolescents in Canada (Gruber et al. 2020), in addition to longer sleep duration, a shift in sleep to later hours and improved sleep quality also led to less daytime sleepiness.

A survey of adults (aged 18 to 82 years) from over 60 countries found that sleep was a critical predictor of stress, depression, loneliness, and coping skills (Varma et al. 2020). Poor sleep quality predicted depression and anxiety symptoms both directly and via increased stress. The study found the youngest age group (18-34) to be the most vulnerable to stress and anxiety when compared to other age groups. In a study of pre-schoolers in Hong Kong, inadequate sleep was related to psychosocial problems (Tso et al. 2020). The directional impact between sleep and anxiety and depression symptoms in this survey was not defined. However, a study of US young adults implied that depression and anxiety symptoms predicted poor sleep quality (Hyun et al. 2020).

First-year university students in the US showed a drop in the nutritional quality of their food intake during the lockdown (Copeland et al. 2021). In contrast, a change in diet was not observed in a survey of Croatian students (Dragun et al. 2021). A study of Australian teenagers found that fast food consumption decreased but fruit and vegetable consumption was largely unchanged (Munasinghe et al. 2020). An analysis of Italian college students found that nutritional choices during lockdown were

associated both with other health behaviours and emotional well-being (Amatori et al. 2020). For example, those participants who exercised more tended to consume more fruit, vegetables, and fish, whereas lower moods led to less healthy food habits.

In terms of alcohol use, a study coming out of Belgium found that young people have been drinking less frequently and in smaller quantities on average (Glowacz and Schmits 2020). They reported, however, that about half the sample did not change their drinking habits during lockdown. They underline that this can be worrying if the drinking is occurring in non-social contexts. Relatedly, a Canadian survey evidenced a decrease in substance use in 14 to 28-year-olds, but nearly a quarter of those in a clinical sample (who were recruited through addiction centres) expressed concern about their current substance use (Hawke et al. 2020). Further, a study of US college students found higher alcohol misuse levels during the pandemic (Charles 2020).

## Coping behaviours and resilience

A qualitative study of children and adolescents in England found that maintaining connections with others, being active, and having creative outlets were important coping strategies for children (The Children's Society 2020). In Portugal, adolescents and young adults reported communicating with family and friends remotely, engaging in leisure activities, and maintaining a routine as positive coping strategies (Branquinho et al. 2020). Maintaining a routine was a predictor of better mental health according to parents' reports in a US study of young children (Glynn et al. 2021). Some coping behaviours that adolescents have been reported to use include engaging in physical activity and taking up new hobbies or activities during lockdown (Branquinho et al. 2020; Pigaiani et al. 2020). One coping mechanism that was unexpected in a few studies was risk prevention, control, and following the government guidelines for social distancing (Dvorsky, Breaux, and Becker 2020; The Children's Society 2020).

Surveys of junior high and high school students in China found that resilience, positive coping strategies, and positive emotional regulation were protective factors in anxiety, depression, and stress (Zhang et al. 2020). Two studies, one on adolescents and one on college students in Wuhan, China, both found that resilience and emotional regulation were mediators against negative emotions and psychological trauma (Yang et al. 2020; Yang, Tu, and Dai 2020). Relatedly, for Italian high school students, taking on new activities and engaging in physical activity was connected with having a less negative mood (Pigaiani et al. 2020). In US college students, resilience minimised the emotional and psychological impact of the pandemic (Bono, Reil, and Hescocx 2020). Interestingly, a survey of Polish university students found that task-oriented coping (such as resolving problems, troubleshooting, seeking relevant information, or trying to change or eliminate the source of stress) was positively related to anxiety (Rogowska, Kuśnierz, and Bokszczanin 2020). The authors suggest that this coping mechanism may not be useful (and may even increase frustration) when individuals have little control over creating plans due to restrictions.

A survey of Spanish college students found that females tended to have higher resilience levels than males (Sánchez-Teruel, Robles-Bello, and Valencia-Naranjo 2020). Utilising standardised measures, they indicated that resilience in their sample is a personal protective factor and it includes being more capable of dealing with COVID-19-related fears, experiencing positive emotions and thoughts, and seeking social support. All this bolsters their ability to cope with stress. Authors suggested equipping students with skills that will facilitate their personal, occupational, and social adjustment.

A study of young adults (aged 24 to 34 years) in North America found that socio-economic status was positively related to positive coping behaviours like seeking support (Volk et al. 2021). In contrast, the

43% of the young adult sample who reported having children used less effective (negative) coping strategies like avoidance, especially those who had more than one child. In Italian and Belgian young adults, those with past or current mental health needs showed lower resilience scores than individuals without mental health needs (Marchini et al. 2020). In a US study targeting parents of young children, the findings indicated that maintenance of family routines helped sustain child mental health regardless of factors that might otherwise have a negative influence such as parental depression, food insecurity, and socio-economic status (Glynn et al. 2021).

In a survey of 622 Canadian young people, spanning clinical and community samples, before and during the pandemic, Hawk et al. (2020) reported a statistically significant deterioration of mental health in both groups, with greater decline in the community sample. In the community sample, symptom levels surpassed the pre-pandemic levels of the clinical sample, and more than a third thereof were likely to meet criteria for a mental health diagnosis. However, symptom levels across the community sample were not measured pre-COVID-19 so it is unclear whether this can be attributed to the pandemic. While substance use declined, a subset reported using substances to cope. Almost half of the clinical sample and 40% of the community sample said that COVID-19 had had some positive impacts (for example, time with family, free time for hobbies and exercise and sleep). Connecting with friends remotely was the most reported coping strategy. The most endorsed coping styles were acceptance, self-distraction, positive reframing, active coping, and planning. The authors recommended e-mental health solutions. The study is however limited in being cross-sectional, unrepresentative, and reliant on pre-pandemic reports of mental health, which may have been affected by recall bias.

Finally, a report by the National Youth Agency (2020) in England revealed that young people felt lonelier during the pandemic compared to pre-pandemic; they also reported increases in family conflict and mental health declines. The authors note that many young people demonstrate incredible resilience (most say they are 'coping fine'). However, they also caution that vulnerable young people do not have access to services or support they previously had; this could possibly exacerbate previous problems.

## Social support

Links between the family and well-being are prevalent across a variety of studies. Although being part of a nuclear family is a protective factor against stress during the pandemic (Cusinato et al. 2020), parents' stress and mental health is closely related to children's well-being across many countries and ages, as discussed in Chapter 1 (Cusinato et al. 2020; Gabor et al. 2020; Tso et al. 2020). On the extreme end of the continuum of parents' stress, it is important to keep in mind that some children may witness or fall victim to domestic violence and abuse during their increased time at home (Cowie and Myers 2020; Araújo et al. 2020; NYA 2020; Wiguna et al. 2020). While domestic abuse has been discussed numerous times as a potential risk factor, few studies have provided any formal statistics or test the relationship directly.

The exception is Cowie and Myers (2020) who discussed the surge in domestic violence in the UK during the pandemic. They reported that calls to the national domestic abuse helpline were much higher during lockdown than they were before. Additionally, analysis of online traffic by a website that addresses gender-based violence showed that visitors to its website had tripled during lockdown in comparison with the same period from previous years. Finally, reports of children being abused at home increased after the start of lockdown, with the National Society for the Prevention of Cruelty to Children (NSPCC) recording a 32% increase in calls compared to pre-pandemic data.

A mixed-methods survey of US adolescents found that those with greater reported negative emotions and conflict with family were more likely to be depressed during the pandemic (Rogers, Ha, and Ockey 2021). In contrast, those who described positive changes in friends' support were less likely to report being depressed. Loneliness was also related to an increase in negative emotions and family conflict, as were reported changes in time spent with friends.

Another study conducted on young people (aged 11 to 17 years) in Indonesia found that the loss of parental and friend support contributed to peer relation problems and pro-social behavioural problems leading to poor mental well-being (Wiguna et al. 2020). Changes in lifestyle, such as home-schooling and working from home, created pressure among parents that may have contributed, to some extent, to child and adolescent maltreatment. The study recommended the design of optimal distance learning/virtual activity programs to keep adolescents connected with their school (Wiguna et al. 2020).

In a study of young adults in South Africa, rural participants were also higher on loneliness and isolation than urban participants (Padmanabhanunni and Pretorius 2021). This research and one assessing young adults in the US found that females tended to report being lonelier and more isolated than males (Lee, Cadigan, and Rhew 2020). Even though rates are often reported to be higher in females, the link between social isolation and worsening mental health was also supported in a study of teenage minority males in the US (Nelson et al. 2020). Finally, a study from Italy and Belgium found that young adults with increasing mental health needs during the pandemic were more likely to increase online contacts with family than those without mental health needs (Marchini et al. 2020).

## Learning and development for babies

This section discusses changes in well-being for babies and infants (0 to 2-years-old), focusing on the only report found in the literature search that studies the impact of the pandemic on this age group (Saunders and Hogg 2020). The report surveyed parents in the UK and asked them to describe their relationship with their babies and to outline any changes in babies' behaviour. It emphasised the significance of the first 1,001 days of a baby's life on their learning and development and, as such, the importance of providing support for their well-being early on.

The results showed that over a quarter of parents said they were concerned about their relationship with their babies, and a third of them felt like they needed help with this. Many parents reported concerning change in behaviours in their babies, including more clinginess (50%), more crying and tantrums (26%), and less sleep at night (20%). Some showed positive changes, such as more playing time with parents (35%) and developing language skills quicker than usual (20%). In most categories, 'no change' was the answer most frequently given (Saunders and Hogg 2020).

The report also discussed inequalities, namely that low-income families, young parents, and those from minority ethnic communities were more likely to have a difficult experience of lockdown pertaining to their babies. For example, the survey showed that households with an income under £16,000 per year were significantly more likely to report an adverse impact on their babies' behaviour during lockdown. Nearly half of respondents in this income range said their babies cried more during lockdown, compared to almost a third of respondents in the next highest bracket. More than two-thirds of parents in the lowest income range thought that their babies were clingier during lockdown, compared with half in the next highest range. The same pattern was seen among the youngest parents, as they were much more likely than older parents to report that their babies were crying more than usual (Saunders and Hogg 2020).

As discussed in Chapter 1, parental sense of control and emotional state can have a strong impact on their children's well-being. As such, the report also looked at parents' well-being during the pandemic; the findings indicated that 61% of parents were concerned about their mental health and 87% were more anxious because of COVID-19 and the lockdown. However, only 32% felt confident that they can find help for their mental health if needed. The report concluded that there is a need to expand provisions of mental and physical health services to support parents and their babies during this time (Saunders and Hogg 2020).

**Chapter 3**

# Facilitating Participation and Inclusion

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## Background and summary of findings

This section addresses the literature findings on factors related to facilitating participation and inclusion. The focus will be on sense of belonging and education in light of school and university closures. Schools, universities and other care and educational institutions are instrumental in enabling participation and inclusion, because they are communities where children and young people get to contribute, feel involved, and develop a sense of belonging<sup>5</sup>.

Sense of belonging and feeling involved are considered key protective factors that can contribute to positive outcomes for individuals and prevent mental health problems (Cooke et al. 2011). Feeling involved and taking part in outdoors activities can prevent social isolation and loneliness, which are linked to mental health problems (Millar et al. 2020). Emerging evidence on the impact of the lockdown on children and young people suggests that social mixing restrictions have significantly impacted their opportunities to participate in activities outside their home and spend time with people in their communities, at school, and at work (Rogers, Ha, and Ockey 2021; Aguilera-Hermida 2020; Isseri, Muthukrishna, and Philpott 2018; Children's Commissioner for Wales 2020).

School and university closures are major public health measures to contain the spread of COVID-19 globally, which have had a significant impact on children's and young people's lives and well-being. The evidence reviewed suggests that many of the worries and anxieties children and young people have been experiencing relate to (i) the accessibility of non-academic support from schools, including social support from friends and staff, (ii) the accessibility and effectiveness of remote learning, and (iii) harbouring uncertainties for their future (Anderson et al. 2020; Caffo, Scandroglio, and Asta 2020; Hoffman and Miller 2020). Additionally, the shift to online or remote learning has created mental and emotional strain on young people. The unfamiliarity of the new teaching and assessment modalities, the lack of clarity in communication, the distant supervision from teachers, the perceived poorer quality of online education, and concerns about graduating emerge as the contributing factors to increased stress (Aguilera-Hermida 2020; Villa, Litago, and Sánchez-Fdez 2020).

## Sense of belonging and feeling involved

The Children's Commissioner for Wales conducted a large-scale study exploring children and young people's experiences during the first lockdown starting in March 2020. It found both positive and negative impact on their sense of belonging and feeling involved (Children's Commissioner for Wales 2020). Based on data from more than 23,500 children aged 3 to 18 years, the study revealed that most adolescents (12 to 18-years-old) found it difficult to cope with being unable to spend time with their friends and visit family members. These studies suggest a desire of adolescents for social and emotional connection.

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<sup>5</sup> As previously mentioned, the impact of educational disruptions is a cross-cutting issue across all protective factors, not just facilitating participation and inclusion. These implications will be discussed in the Education section.

A study conducted with 407 US adolescents found that adolescents experienced negative changes in their relationships with friends and family during COVID-19; these changes were associated with increased depression, anxiety, and loneliness (Rogers, Ha, and Ockey 2021). Many adolescents were deeply frustrated because they could not get out of the house, socialise in outdoor settings, and participate in activities that were important to them (for example, sports, choir, school plays, and prom). They also found the inability to gather with friends or extended non-residential family members challenging (Rogers, Ha, and Ockey 2021). A survey in the Netherlands (Janssen et al. 2020) also found that reported difficulties included boredom, missing social contact with friends, and frustrations with family members.

Using Kidscreen-10<sup>6</sup> (that measures the quality of life) to assess functional, mental, and social aspects of well-being, Riiser et al. (2020) reported that their sample of Norwegian adolescents scored well below pre-pandemic reference study data. Isolation was significantly negatively associated with well-being scores, although seeing fewer friends than usual was not. This could indicate that, for some adolescents, social media-based contact was an adequate replacement for in-person contact. Pre-pandemic comparative mental health data is very helpful, but survey studies cannot determine whether factors such as isolation are a cause, or how important a cause, of any mental health impact.

Another study conducted in the United States on young males who identify as gay or bisexual (aged 14 to 17 years) found an impact of physical distancing on participants' mental health due to a reduced sense of social connectedness. This was attributed to the lack of in-person sexual contact and increased virtual sexual behaviours through text or video chat and increased use of sexual networking applications (Nelson et al. 2020). Although the data may not be generalisable to a broader young population, the study suggests that the experience of young people interested in opposite gender/sex partners is likely to be similar.

Across a variety of qualitative surveys, children, adolescents, and parents all noted the difficulties of not seeing friends and family, missing important life events, and missing out on using or practising social skills (Branquinho et al. 2020; Janssen et al. 2020; Nelson et al. 2020; NYA 2020; Padmanabhanunni and Pretorius 2021; The Children's Society 2020). Closing of youth centres and sports clubs and hinderance to other routine activities further exacerbated these issues, often leading to feelings of isolation and loneliness (NYA 2020). This is discouraging because social connectedness combats loneliness and tends to improve quality of life (Lardone et al. 2020; Nelson et al. 2020). A study of Hong Kong university students found that those who felt that they had more peer support were less likely to report being depressed and more likely to express positive mood and hope (Sun, Lin, and Chung 2020). A study of 11 to 17-year-olds in Indonesia found that a reported lack of social support led to behavioural problems and relationship problems (Wiguna et al. 2020).

Although the impact of COVID-19-associated measures has been largely negative, emerging evidence suggests benefits for parts of the population and therefore urges investigations with 'an open scientific mind' (Bruining et al. 2020). Potential positive outcomes of lockdown were associated with relief from social pressure and peer conflict and increased time and opportunities to spend time outdoors in activities that are important for children and young people, such as exercise, playing, and going for walks. The study in Wales reported that many children and young people did get the opportunity to devote more time to immediate family and to spend time outdoors and in exercise (Children's

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<sup>6</sup> KIDSCREEN-10 is a generic 10-item unidimensional instrument focusing on the functional, mental, and social aspects of well-being in children and adolescents 8–18 years of age. It consists of the following items: "thinking of last week, have you 1) felt fit and well, 2) felt full of energy, 3) felt sad, 4) felt lonely, 5) had enough time for yourself, 6) been able to do the things that you want in your free time, 7) parent(s) treated you fairly, 8) had fun with your friends, 9) got on well at school, 10) been able to pay attention at school?" (Riiser et al. 2020).

Commissioner for Wales 2020). In another study with US adolescents (407), around a fifth of the participants reported positive feelings because of increased time with family (Rogers, Ha, and Ockey 2021). Some studies and reviews also considered relief from bullying as a positive outcome of home-schooling (Cowie and Myers 2020; Hoekstra 2020).

## Education

Most of the literature on educational disruption focuses on its implication on participation and inclusion. However, it is important to keep in mind that education is a cross cutting issue across all protective factors. As such, this section discusses literature findings on the implications of school and university closures on all aspects of mental well-being.

Concerning the school context, a survey of early years settings in the UK indicated that many workers were concerned about children's development and progress over lockdown (Bowyer-Crane et al. 2020). They worried about children missing routines, missing friends, and missing out on opportunities for developing language and communication. They expressed particular concern for children between three and four years of age. A Wales survey of primary school teachers conducted in July 2020 also noted that teachers were concerned about students' health and well-being during the lockdown and upon return to school, particularly due to varying engagement with home learning during school closures (James 2020). A Welsh Government review noted that children from lower socio-economic backgrounds were likely to be at the greatest risk of falling behind in terms of their education (Williams 2020).

From the students' perspective, a study of children and adolescents in Wales found that about 50% felt confident learning at home, whereas 35% lacked confidence (Children's Commissioner for Wales 2020). Older children reported being more concerned about learning. Among others, children felt unease regarding access to electronic devices, pressures at home, and exam cancellations.

School-based health care services' role in supporting children and young people's mental health when they return to school after the pandemic was emphasised in the literature (Anderson et al. 2020; Hoffman and Miller 2020; Caffo, Scandroglio, and Asta 2020). Based on a study of administrators, teachers, counsellors, and other healthcare and education providers, Anderson et al. (2020) argued that school-based mental health services need to expand and adapt to increased demand. They should also offer services to students in response to potential domestic abuse or to the mental strain of being isolated from their peers for months. This is not an empirical study, but the expert insights were based on meetings with education and health care professionals (their number is not specified), working at the intersection of education and healthcare throughout West Virginia.

In the US, a discussion piece expresses concern over the unavailability of non-academic support, normally offered by schools, during school closures and remote schooling (Hoffman and Miller 2020). Schools in the United States are important sources of food, health services, and intervention when needed. The impact of school closures on the mental health and well-being of children from different population sub-groups varied widely. More negatively affected were the children who depended on schools for physical health and mental health care, for nutritious meals and shelter from neglect and abuse (Hoffman and Miller 2020). The extent to which this is the case in a UK context is yet to be clarified; although Free School Meals have been maintained via local governments in Wales, there have been questions about their nutritional content as well as their reach and eligibility thresholds.

As for higher education and universities, a study conducted on 257 students from a US university found a positive association between academic frustrations and mental well-being (Tasso, Hisli Sahin,

and San Roman 2021). The highest level of frustration relates to increased stress due to changes in teaching modalities, increased workload, lack of clarity regarding academic expectations, and concerns around the quality of online education. The participants also reported lack of companionship, loneliness, and isolation because of losing in-person teaching and learning.

Evidence from multiple countries suggested that children and young people struggled getting used to the new modalities of teaching and learning, and preferred face-to-face learning (Villa, Litago, and Sánchez-Fdez 2020; Aguilera-Hermida 2020). In a study involving more than 2,000 Spanish university students at two phases (during lockdown and during exams), 90% of students reported their preference for face-to-face teaching. 80% believed that their university did not adapt to online teaching and learning adequately (Villa, Litago, and Sánchez-Fdez 2020). Most of the students expressed concerns about their learning outcomes, academic record, and potential difficulties in finding a job. More than half of the students had been personally affected by the coronavirus and reported a lack of understanding on part the university (Villa, Litago, and Sánchez-Fdez 2020). It is important to note that most studies do not report any change in learning outcomes or grades.

A survey of 2,871 adults (51.5% of the sample being young adults) recruited through an online questionnaire during the lockdown from three French speaking countries (Belgium, France and Canada) found higher rates of anxiety, depression, and uncertainty among young adults compared to the older population (Glowacz and Schmits 2020). Around half of the young people surveyed were students who reported being overwhelmed with uncertainties regarding their future and education. The study suggested that students needed more clear communication from teachers and access to infrastructure (such as free psychological consultations, and the promotion of access to sports and cultural centres) that is conducive to their well-being. They also called for a collaborative approach on behalf of the government and schools to provide high-quality psychological services to students.

However, a study surveying 1,124 Italian students did not find significant psychological impact in its participants; stress levels among the participating students were not significantly different than pre-COVID student samples (Capone et al. 2020). Sense of belonging to the university, satisfaction with the course degree, and academic efficacy beliefs were found to be associated with higher levels of mental well-being. They could, therefore, be considered a protective factor for students' mental health. The study suggested that supportive academic environments can foster students' mental health and well-being. However, it is important to bear in mind that the study was based on a convenience sample (people who are easy to contact or reach, instead of a random sample) that was not balanced by gender; hence findings generalisability may be limited. Finally, emerging literature suggests that it is vital to consider different age groups when developing strategies and specifically target vulnerable young adults (Glowacz and Schmits 2020).

**Chapter 4**

# Wider Determinants, Inequalities, and Population Characteristics

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## Background and summary of findings

This section explores the impact of wider determinants, such as unemployment and poverty, and population characteristics, such as age, gender, sexuality, and vulnerability, on well-being outcomes during the COVID-19 pandemic. There is scant literature on population characteristics, but many studies broach some of them, most often gender. Ethnicity and race are notably absent from the literature, with only one paper on these topics (Nelson et al. 2020).

The findings indicate that, unsurprisingly, being unemployed or from a lower socio-economic background exacerbates the adverse impact of the pandemic (Action for Children 2020; Achdut and Refaeli 2020; Akkaya-Kalayci et al. 2020; Hoyt et al 2020; Skripkauskaite et al. 2020; Spinellie et al. 2020; NYA 2020; Prince's Trust 2021). Age is an important determinant of well-being, with adolescents and young people exhibiting more negative outcomes than younger children and older adults in the existing studies (Alfvén 2020; Children's Commissioner for Wales 2020; Lisitsa et al. 2020; Simba et al. 2020).

While some studies differentiate outcomes based on gender, most find worse outcomes for women and girls when compared to their male counterparts (Akkaya-Kalayci et al. 2020; Aslan, Ochnik, and Çınar 2020; C Fong and Iarocci 2020; Hoyt et al. 2020; Lee, Cadigan, and Rhew 2020; Rogowska, Kuśnierz, and Bokszczanin 2020). Children in care show a decline in well-being, and so do children with physical disabilities, but these results are not compared to the general population (Cacioppo et al. 2020; Vallejo-Slocker et al 2020). Findings for young people diagnosed with mental illnesses are mixed. Some evidence suggests that adolescents with pre-existing mental health issues may be more vulnerable to stressors during the pandemic, while others suggest that they have developed coping skills that help them manage (Akkaya-Kalayci et al. 2020; Hamza et al. 2020; Shanahan et al. 2020).

## Unemployment, class, and poverty

According to the Tesco Youth Index (Prince's Trust 2021), those who are not in work, education or training scored particularly low on emotional health, especially in terms of anxiety. Being unemployed at the start of the pandemic is considered a major risk factor for young people's mental health and well-being. Loss of employment means losing one's sense of belonging, work-related social interactions, and the support available through these interactions. The authors emphasised that early unemployment leads to long term poor health outcomes especially for young people facing financial instability during COVID-19 (NYA 2020). A study conducted among Israeli young people (20 to 35-years-old) also found a strong association between COVID-19-led unemployment and psychological distress (Achdut and Refaeli 2020).

A study of adolescents (14 to 17-year-olds) in the US found a steeper decline in positive emotions and a larger increase in negative emotions for those who lived in lower-income households than those from higher-income households (Rogers, Ha, and Ockey 2021). This is consistent with a survey of Austrian and Turkish adolescents which discovered that financial struggles were related to lower mental well-being during the pandemic (Akkaya-Kalayci et al. 2020). An analysis of US college students similarly found that low-income students reported slightly higher anxiety and stress than higher-income students (Hoyt et al 2020). A study in the UK found that, on average, parents or carers from households with lower annual income (< £16,000) reported higher levels of all behavioural, emotional, and restless/attentional difficulties among their children than parents or carers from households with higher annual income (Skripkauskaite et al. 2020). In contrast, an Italian study of parents found no association between living in an at-risk area and reported family well-being during the pandemic (Spinellie et al. 2020). Thus, low socio-economic status was most times, but not consistently, predictive of lower emotional well-being during the pandemic.

The results from an analysis in the UK of anonymised data from a total of 2,760 grant application forms to the Action for Children Coronavirus Emergency Funds indicated that the situation of many families already struggling with financial pressures was exacerbated due to the pandemic (Action for Children 2020). More than half of the households reported that the pandemic had affected their mental health. Nearly a quarter of the families had at least one child struggling with their mental health. At the same time, 40% of the families who applied for funds struggled to feed their children, while 31% of them did not have resources necessary to educate their children at home (Action for Children 2020). The study recommended immediate measures to aid families' financial recovery. These include increasing the Universal Credit standard allowance and eliminating benefit caps and the two-child limit. The study also offered separate recommendations for devolved nations, including Wales, such as increasing funding to the Discretionary Assistance Fund and ensuring it is well-publicised. Strategic planning and investment to reduce child poverty and financial hardship across the UK through implementing a UK child poverty strategy were also recommended (Action for Children 2020).

## Age, gender, and sexuality

Evidence to date suggests that the direct health impact of COVID-19 on children and adolescents may be minor compared with the impact on adults (Alfvén 2020). Nonetheless, they are facing the brunt of the virus' indirect repercussions—for example, disruptions in everyday life, routine health care, school closures, malnutrition, and increased financial hardship (Alfvén 2020; Children's Commissioner for Wales 2020; Simba et al. 2020). A multi-country study of French-speaking nationals found that young adults are experiencing more anxiety and depression than the older population. Their worries are attributed to uncertainty around education and the future (Glowacz and Schmits 2020). Similarly, a study of young adults in the US found that they were lonelier and sought less social support than older adults (Lisitsa et al. 2020). Adolescents also experienced worse outcomes than younger children, as discussed in Chapter 2.

In terms of gender and sexual orientation, some authors reported that females face more fear (particularly younger children), loneliness, and anxiety/stress (Akkaya-Kalayci et al. 2020; Aslan, Ochnik, and Çınar 2020; C Fong and Iarocci 2020; Hoyt et al. 2020; Rogowska, Kuśnierz, and Bokszczanin 2020; Lee, Cadigan, and Rhew 2020). However, they were also shown to be more resilient (Sánchez-Teruel, Robles-Bello, and Valencia-Naranjo 2020). Other studies identified no differences between males and females (Rogers, Ha, and Ockey 2021). A qualitative study of LGBTQ youth in the US highlighted the need to consider the impact of isolation within potentially unsupportive

families (Fish et al. 2020). It is important to explore the implications this could have on the mental health of affected individuals, particularly as a result of losing one's sense of social support.

## Vulnerability, disability, and health

Vallejo-Slocker et al. (2020) examined the impact of eight weeks of lockdown on vulnerable children in Spain, comparing child self-report to data gathered in 2017. Using the SDQ and Kidscreen-10, they surveyed 459 children and young people aged eight to 18 years in residential care, foster families, kinship families, or family strengthening programs. SDQ scores were significantly worse than pre-pandemic. This, nonetheless, did not have clinical relevance, and there were few differences between children in care and those in kinship families. No significant age differences were found in emotional problems, but younger children showed better functioning than older children. Girls scored higher than boys in emotional problems and worse functioning. Quality of life had not changed compared to 2017 levels.

A study in France investigated the impact of COVID-19 on children (0 to 18 years) with physical disabilities (Cacioppo et al. 2020). Parents of these children reported that the lockdown had a negative impact on their children's morale and behaviour. Many children stopped physical activities, including physiotherapy and occupational therapy. Parents were particularly worried about rehabilitation and lack of support and help. A survey in the Netherlands investigated pre- and early-COVID quality of life and fatigue in children with cancer (van Gorp et al. 2021). They found no deterioration of psychosocial function in these children and no differences in health-related quality of life or fatigue, based on self (8 to 18-years-old) or parent (2 to 7-years-old) report. In contrast, a study of young adult cancer patients (18 to 39-years-old) in Slovenia found that approximately a third of respondents reported increased psychological distress during the pandemic (Košir et al. 2020).

There have been mixed findings regarding whether adolescents who are already undergoing treatment or are diagnosed with anxiety or depression are at greater risk. In a study based in Austria and Turkey, participants in treatment were more likely to report worsening mental health than those not in treatment (Akkaya-Kalayci et al. 2020). A longitudinal study in Switzerland discovered that 22-year-olds who had reported emotional distress at 20 years of age were more likely to report increased emotional distress during COVID-19 than their peers who did not report emotional distress pre-pandemic (Shanahan et al. 2020). Social stressors for those at risk before the pandemic (for example, stressful life events, social exclusion) predicted emotional distress during the pandemic.

In contrast, a study in Canada found that post-secondary school students with pre-existing conditions did not show increased psychological distress; this was at odds with prior expectations (Hamza et al. 2020). Interestingly, students with previous mental health issues in this study reported decreased stress, sadness, depression, and anxiety. This contrasted with students without pre-existing mental health conditions, who showed increases in each of these measures. Some have suggested that those who are already in treatment may have learned better strategies for dealing with their anxieties. There is thus mixed evidence suggesting that some adolescents with pre-existing mental health issues may be more vulnerable to stressors during the pandemic while others may have honed coping skills that help them manage.

## Children and Young People's Well-being during the COVID-19 Pandemic

# PART2 | Data Analysis



## Chapter 5

# Background and Key Findings

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## Background

This chapter explores the evolution of mental well-being outcomes for children and young people during the COVID-19 pandemic. Since the beginning of the pandemic, Understanding Society has been running a regular survey for households in the UK, the COVID-19 Study, on the coronavirus pandemic's socio-economic and health consequences.<sup>7</sup> The survey ran every month since April 2020, and every two months since July 2020 and includes around 7,900 observations of children and young people aged 5 to 24 years. Information on the mental well-being of children and young people living in the UK has been collected in different waves:

- Children aged 5 to 11 years: July and September
- Children aged 10 to 15 years: July
- Young people aged 16 to 24 years: April, May, June, July, and September

Parents of children aged 5 to 11 years were asked to complete the Strength and Difficulties Questionnaire (SDQ) in July and September. The questionnaire was used to assess children's mental health and well-being and contains 25 items, described as personality attributes. These attributes were grouped into five subscales: emotional symptoms, conduct, hyperactivity, peer relationship, and prosocial behaviour. In addition, in July 2020, the SDQ was sent out to a sample of children aged 10 to 15 years, which was self-completed by the children.

Young people aged 16 to 24 years were asked to complete the General Health Questionnaire (GHQ) in each survey wave (from April to September). The GHQ is a self-administered screening questionnaire containing 12 questions. It is commonly used to measure current mental health and well-being status and its development, as well as to detect psychological distress and risk for common mental disorders. The answers to the questions were converted into a single scale (from 0 to 36) to assess the respondents' psychological well-being.

Understanding Society also published data from 2019 of individuals participating in the COVID-19 Study to allow researchers to analyse changes in outcomes before and after the pandemic. By linking the two datasets, the analysis presented in this chapter examines trends in well-being outcomes for children and young people in the UK, comparing the 2019 responses with the responses in the COVID-19 Study. Results will also be compared across groups of children and young people based on their characteristics (for example, ethnicity, age, gender etc.).<sup>8</sup>

The analysis presented in this chapter concentrates on two types of outcomes. First, it focuses on children and young people's average well-being and investigates how this changed throughout the COVID-19 pandemic. Second, it centres on children and young people with poor mental well-being and considers whether the number of children and young people with severe difficulties changed since the beginning of the pandemic.

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<sup>7</sup> Information on the COVID-19 Study is available at: <https://www.understandingsociety.ac.uk/topic/COVID-19>

<sup>8</sup> Due to the small sample of children in each wave for which outcomes of interest are available, not all the differences across groups discussed in the report are statistically significant as they do not come from sufficiently large sample sizes from which to draw robust conclusions.

It is important to highlight that the number of respondents varies from wave to wave, as not all respondents participated in all the survey waves. Additionally, the analysis focuses on children and young people residing in the UK. Due to the sample size, it is not possible to run an in-depth analysis for children and young people residing in Wales. Indeed, the proportion of children and young people residing in Wales included in the sample is approximately 5% (around 400 observations). Therefore, the analysis presented in this chapter will primarily discuss outcomes for children and young people living in the UK without further distinguishing by country of residence. Some comparisons between average well-being measures across children and young people living in Wales and the rest of the UK are presented in the sections below. However, data limitations prevent exploring (i) what were the most affected groups in Wales and (ii) whether some groups were affected differently in Wales compared to the rest of the UK throughout the pandemic.

The findings indicate that, in general terms, well-being outcomes for children and young people were worse in 2020 compared to previous years. Some indicators showed an improvement between July and September 2020 when the lockdown eased, but this was not the case with all metrics and several indicators remained at substantially worse levels than prior to the pandemic. Outcomes vary depending on age group, location, and the type of indicators used. These differences are summarised below.

## Key Findings

### Children aged 5 to 11 years– Parent completed Strength and Difficulties Questionnaire

- The well-being outcomes of children aged 5 to 11 years living in the UK worsened in July 2020 compared to their historical levels, with children not attending school in the summer months being among the most affected group during the pandemic.
- While some well-being outcomes improved in September 2020, in several cases going back to the level recorded before the pandemic (2019), some of the most affected well-being measures, such as happiness, worries, hyperactivity, did not go back to the pre-pandemic level.
- Children reporting severe emotional problems, hyperactive problems, and peer problems increased during the COVID-19 pandemic compared to 2019. In particular, the proportion of children often feeling unhappy or downhearted, being solitary/often playing alone, worrying a lot, and being restless/overactive increased since 2019.
- Conduct problems and prosocial behaviours were mildly affected during the COVID-19 pandemic across the groups of children analysed.
- While average outcomes in Wales might have followed slightly different patterns compared to the rest of the UK throughout the pandemic, almost all remained within a normal range or went back to pre-pandemic level towards the end of summer 2020.
- The fact that some measures improved towards the end of summer might suggest that the pandemic had a short-term impact on children's well-being. However, in September, restrictions were less extreme than at the beginning of the pandemic, and schools reopened. These two facts might have contributed positively to the well-being of children.
- Given that the strength and type of restrictions in place might play an important role in defining children's well-being outcomes, further analysis using new data of the COVID-19 Study that will be published in the next months is recommended.

## Children aged 10 to 15 – Self-completed Strength and Difficulties Questionnaire

- The analysis of mental well-being outcomes for children living in the UK that submitted the self-completed questionnaire shows that, in July 2020, mental well-being outcomes were similar to 2019.
- The average mental well-being score in the five subscales included in the SDQ and the proportion of children with severe difficulties in each subscale were similar to those reported before the COVID-19 pandemic.
- The average scores measured across the five SDQ subscales remained relatively constant between 2019 and July 2020, both in Wales and in the rest of the UK.
- Due to data limitations (for example, children aged 10 to 15 years were surveyed only once since the beginning of the pandemic), it was not possible to analyse the evolution of the self-reported mental well-being outcomes of children aged 10 to 15 years throughout the COVID-19 pandemic in more detail.
- Recent studies suggest that results from self-completed questionnaires should be interpreted with caution, especially when assessing outcomes of children below 11 to 12-years-old. Some questions might be hard to understand for children aged below this range. Therefore, some subscales might not provide a reliable tool to evaluate the well-being of younger children.

## Young people aged 16 to 24 years

- The first months of the pandemic (April to June 2020) saw a deterioration in the mental well-being of young people living in the UK across age groups, gender, employment, and health status. Mental well-being measures improved towards the end of summer (between July and September).
- The average mental well-being score worsened compared to the level recorded in 2019 across all groups. Similarly, the share of young people with abnormal scores in the 12 items included in the GHQ (happiness, depression, etc.) increased compared to 2019.
- In April 2020, there was a sharp increase in the proportion of young people who reported being more unhappy than usual. Young women were more likely to report feeling more unhappy/depressed than usual compared to young men, especially in the first months of the pandemic.
- The number of young people who reported losing confidence also increased at the beginning of the pandemic compared to 2019. Young people with a pre-existing health condition and those not in employment (for example, full-time students or unemployed) were among the most affected groups.
- During the pandemic, young people reported being less capable of making decisions than usual. The proportion of young people struggling to make decisions increased since 2019 and remained relatively high until June 2020. In particular, young people not in employment and those aged between 21 to 24 years were the most affected groups compared to those in employment at the time of the survey and those in the age group 16 to 20.
- The comparison between young people living in Wales with those living in the rest of the UK shows that the proportion of young people with mental well-being scores above the average (indicating worse condition) was relatively similar across the two groups.

- As mentioned above, there might be several reasons that explain why outcomes improved at the end of summer, including the relaxation of the COVID-19 restrictions in the summer. Monitoring mental well-being outcomes in the next months will be crucial to provide a better understanding of the impact of COVID-19 on the mental well-being of children and young people.

**Chapter 6**

# Children aged 5 to 11 years parent completed Strength and Difficulties Questionnaire

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## Summary of the findings

- The proportion of children aged 5 to 11 years with abnormal emotional problems score increased between 2019 and July 2020.
- Similarly, the proportion of children with abnormal hyperactivity score increased between 2019 and July 2020, while it decreased in September 2020, going back to pre-COVID-19 level.
- The proportion of children with abnormal peer problems score also increased in July and September 2020 compared to 2019.
- Among the measures analysed, the conduct subscale, measuring symptoms of conduct disorders subscale, was the least affected by the pandemic.
- The proportion of children with abnormal prosocial score slightly rose in September 2020 compared to 2019.

Parents of children aged 5 to 11 completed the SDQ in July and September 2020. This section presents the evolution of mental well-being outcomes before and after the start of the COVID-19 pandemic using the five subscales produced by the SDQ. The five subscales correspond to emotional symptoms, conduct, hyperactivity, peer relationship, and prosocial behaviour. Each subscale is composed of five items. The total score of the subscale is based on the score in each of the five items.

Each answer has a score associated with it: not true (score 0), somewhat true (score 1), and certainly true (score 2). The sum of the scores in the five questions determines the total score of the subscale. Based on the total score, children's behaviours are classified as normal, borderline, or abnormal.

The sections below report the questions associated with each subscale as well as the subscales' thresholds that define whether the score is normal, borderline, or abnormal. Each section will focus on (i) children whose outcomes are considered abnormal and (ii) the average score for children living in Wales compared to those living in the rest of the UK. Additionally, for some of the outcomes, results

will be shown according to children's characteristics, including age, gender, ethnicity (British<sup>9</sup> versus other ethnic backgrounds)<sup>10</sup>, and school attendance.<sup>11</sup>

The final sample of children aged 5 to 11 years participating in the COVID-19 Study in July and September 2020 includes approximately 3,000 respondents. Table 1 shows the main characteristics of the children in the sample.

**Table 1. Demographic characteristics of children aged 5 to 11 years, COVID-19 study July and September 2020**

<b>Average age</b>	8
<b>% male</b>	52%
<b>% British</b>	70%
<b>% children aged 5 to 7 years</b>	40%
<b>% children living in Wales</b>	5%
<b>% of children attending school in June/July 2020</b>	77%
<b>Sample size</b>	~ 2,000

Source: Understanding Society

## Emotional symptoms subscale

### Summary of the findings

- The proportion of children aged 5 to 11 years with abnormal emotional problems score increased between 2019 and July 2020.
- Overall, girls and children who did not attend school in June and July show the highest increase in the proportion of children with abnormal score.
- Similar to the rest of the UK, the average emotional problems score across children living in Wales remained in the normal range throughout the pandemic.

The emotional symptoms subscale measures the emotional problems of children assessed through the SDQ. The subscale contains the following five items:

1. Often complains of headaches, stomach-aches, or sickness
2. Many worries or often seems worried
3. Often unhappy, depressed, or tearful
4. Nervous or clingy in new situations
5. Many fears, easily scared

<sup>9</sup> British includes English, Welsh, Scottish, and Northern Irish. It is recognised by the authors that there are inadequacies in the current categorisations of ethnicity in research which do not fully represent the complexities of identity and experience for many children and young people.

<sup>10</sup> Information on ethnic group of children is based on self-identification and is derived using information collected in interviews with adults and includes information collected in previous interviews and from other members of the household on their ethnicity. The categories included in the ethnic group questions are similar to the England and Wales (ONS) ethnic group survey carried out in the 2011 England and Wales Census. Details on how information is derived is available at: [https://www.understandingsociety.ac.uk/documentation/mainstage/dataset-documentation/variable/ethn\\_dv](https://www.understandingsociety.ac.uk/documentation/mainstage/dataset-documentation/variable/ethn_dv)

<sup>11</sup> Well-being outcomes of children who attended school in June/July 2020 are compared to those who did not. Among the reasons some children did not attend school are child's health problem, family member's health problem, self-isolation, illness, and lack of transport.

The emotional problem score is categorised according to the total score achieved in the five items above (Table 2).

**Table 2. Strength and Difficulties Questionnaire Emotional problems scores: categories**

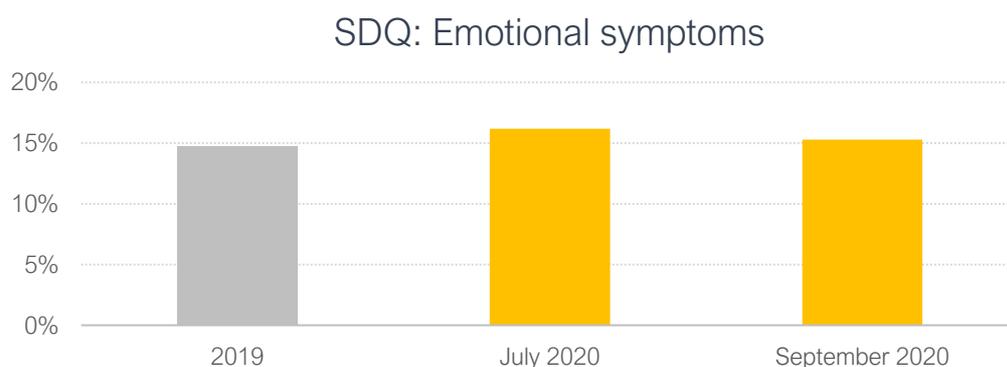
	Normal	Borderline	Abnormal
<b>Emotional problems score</b>	0-3	4	5-10

Figure 1 shows the proportion of children with abnormal emotional scores pre-COVID-19 (2019) and after the beginning of the pandemic (July and September) (Figure 1). The proportion of children aged 5 to 11 years with abnormal emotional problems score increased between 2019 (14.7%) and July 2020 (16.2%). It then decreased in September 2020 (15.3%).

Figure 2 shows the proportion of children whose emotional problems score is abnormal by children's characteristics. The share of children with abnormal score remained constant for children in the age group 8 to 11 years. A higher percentage of children aged 5 to 7 years had an abnormal score in July 2020 (13.3%) compared to 2019 (11.4%). However, in September 2020, the proportion decreased to 11%. On average, girls were more affected than boys, consistent with some of the literature findings. The percentage of girls with abnormal score increased from 15% in 2019 to 18.2% in July. The proportion remained constant for boys.

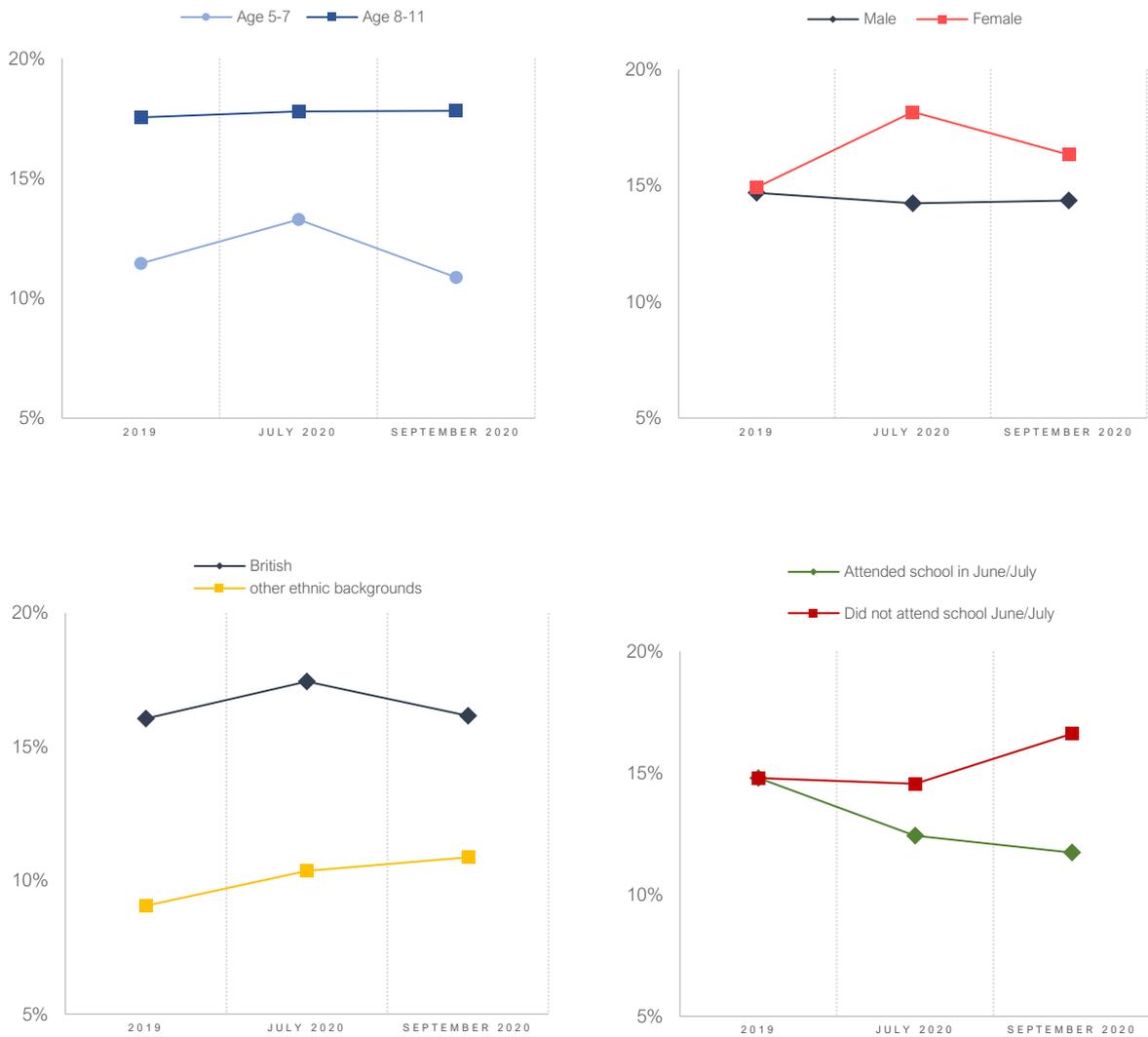
Figure 2 presents the results for children who attended school in June/July compared to those who did not. The two groups show different trends. Children who attended school in June/July 2020 show a slightly decreasing trend with the percentage of children with abnormal score decreasing from 14.7% in 2019 to 12.4% and 11.4% in July and September 2020, respectively. On the contrary, the proportion of children not attending school in June/July with an abnormal score increased from 14.5% in July to 17.6% in September.

**Figure 1. Proportion of children aged 5 to 11 years with an abnormal emotional symptoms score**



Source: Understanding Society

**Figure 2. Proportion of children aged 5 to 11 years with an abnormal emotional symptoms score, by age group, gender, ethnicity, and school attendance**

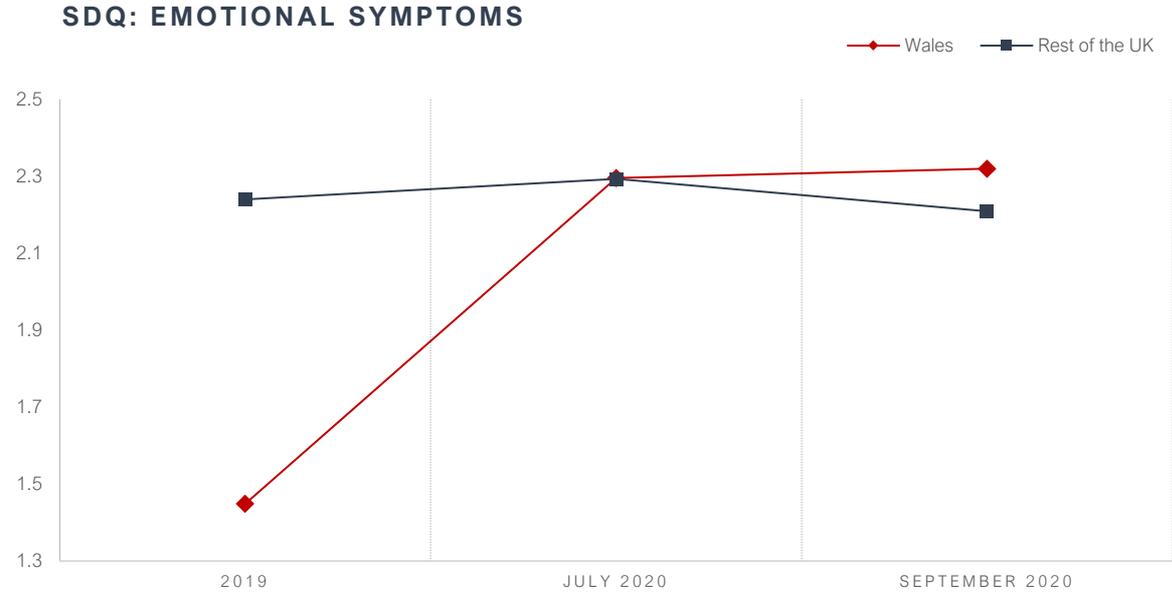


Source: Understanding Society

As mentioned in the previous section, children living in Wales represent only 5% of the total sample. Consequently, it is not possible to analyse the proportion of children with abnormal scores in Wales alone, as the sample size would be too small to provide meaningful results. Instead, it is possible to compare the average emotional problems score across children living in Wales with those living in the rest of the UK to identify different trends throughout the pandemic.

Figure 3 shows that while in the rest of the UK the average score remained relatively constant throughout the pandemic, the average score in Wales rose from 1.4% to 2.3% between 2019 and September 2020, reaching a similar level to the score of children living in the rest of the UK. However, the figure shows that the average score across Wales was better pre-pandemic compared to the rest of the UK. In addition, whilst the score increased compared to 2019, it was still within the normal range (0 to 3).

Figure 3. Emotional symptoms score of children aged 5 to 11 years, by country of residence

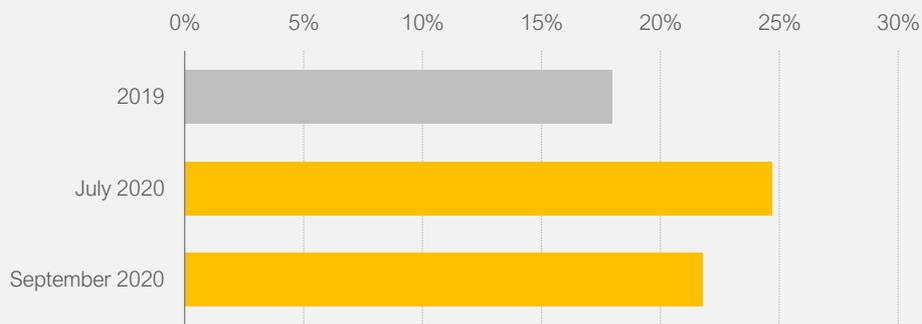


Source: Understanding Society

### SDQ Emotional symptoms subscale: Unhappy and worried

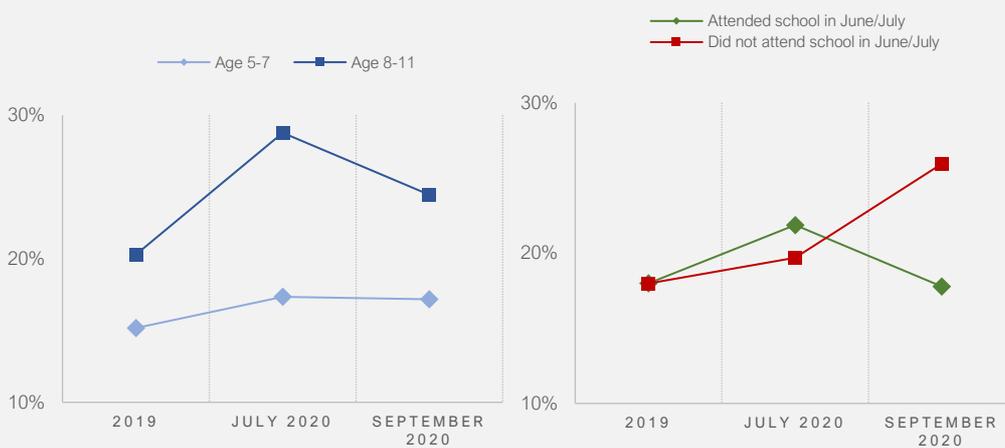
Feeling unhappy and being worried are two of the questions asked to determine the emotional problems score. These two dimensions are among the most affected during the pandemic. Figure B1 illustrates that the proportion of children feeling unhappy in July 2020 was 25% and 22% in September compared to 18% in 2019. In particular, the proportion of children feeling unhappy increased more among those aged 8 to 11 years and those that did not attend schools in June/July (Figure B2).

**Figure B1. Proportion of children aged 5 to 11 years feeling unhappy**



Source: Understanding Society

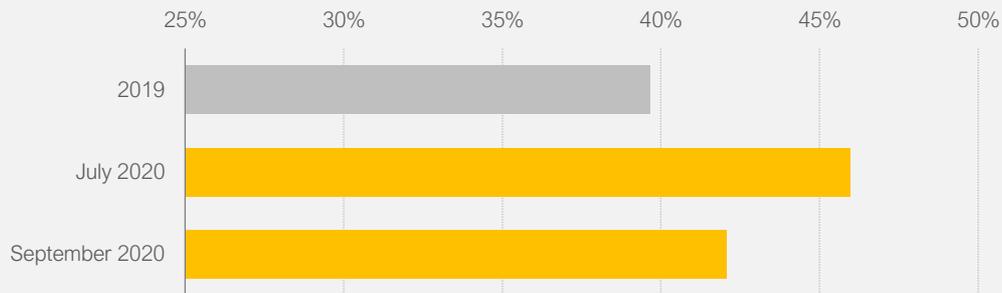
**Figure B2. Proportion of children aged 5 to 11 years feeling unhappy, by age group and school attendance**



Source: Understanding Society

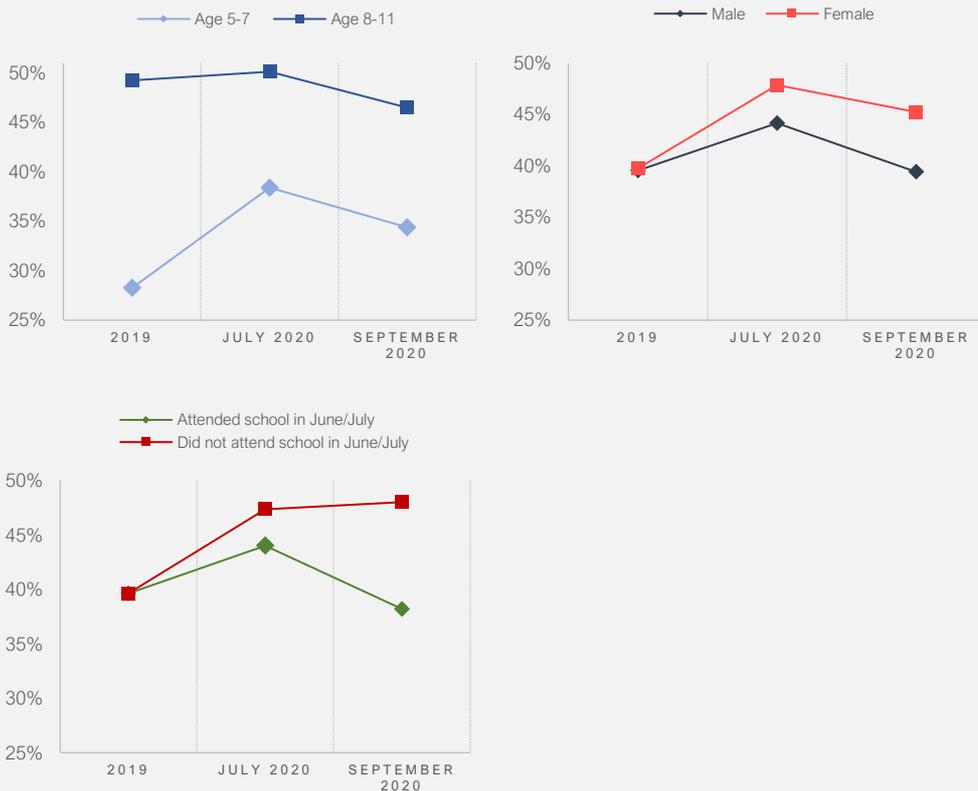
Similarly, the proportion of children whose parents reported as being worried was 46% in July 2020 and 42% in September, compared to 39% in 2019 (Figure B3). Children aged 5 to 7 years, girls, and children who did not attend school in June/July show the highest increase compared to pre-COVID-19 levels (Figure B4).

**Figure B3. Proportion of children aged 5 to 11 years that have worries**



Source: Understanding Society

**Figure B4. Proportion of children aged 5 to 11 years that have worries by age group, gender, and school attendance**



## Hyperactivity/Inattention subscale

### Summary of the findings

- The proportion of children aged 5 to 11 years with abnormal hyperactivity score increased between 2019 and July 2020, while it decreased in September 2020, going back to pre-COVID-19 level.
- Children aged 8 to 11 years and children who did not attend school in June and July show the highest increase in the proportion of children with abnormal hyperactivity score.
- Both across Wales and the rest of the UK, the average hyperactivity score remained in the normal range throughout the pandemic.

The hyperactivity/inattention subscale measures whether children assessed through the SDQ show hyperactivity symptoms. The subscale score is determined using the following five items:

1. Restless, overactive
2. Constantly fidgeting or squirming
3. Easily distracted, concentration wanders
4. Think things before acting
5. Sees tasks through to the end

The hyperactivity score is categorised according to the total score achieved in the five items listed above. The categories are shown in Table 3.

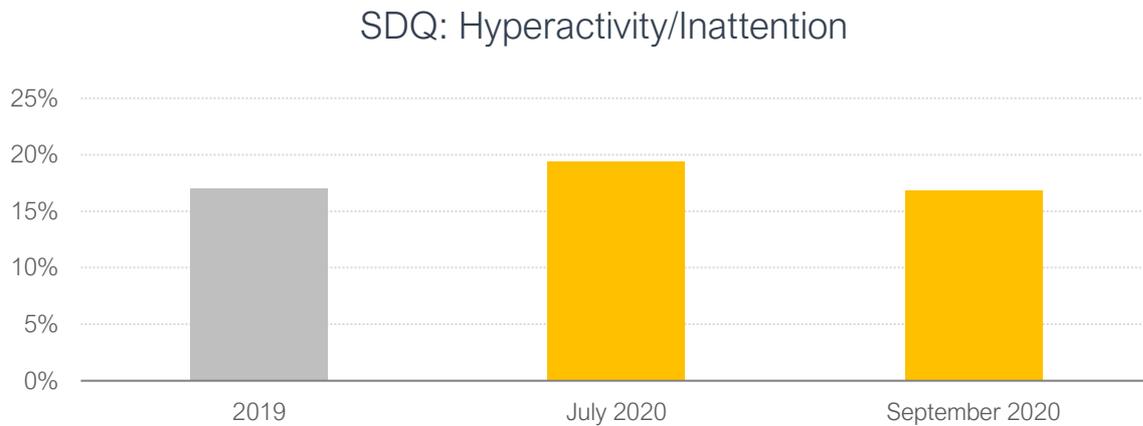
**Table 3. SDQ Hyperactivity score: categories**

	Normal	Borderline	Abnormal
<b>Hyperactivity score</b>	0-5	6	7-10

Figure 4 shows the proportion of children whose hyperactivity score is abnormal before and after the start of the COVID-19 pandemic. The portion of children aged 5 to 11 years with abnormal hyperactivity score increased between 2019 (17%) and July 2020 (19.4%). However, the proportion decreased in September 2020, going back to pre-COVID-19 level (17%).

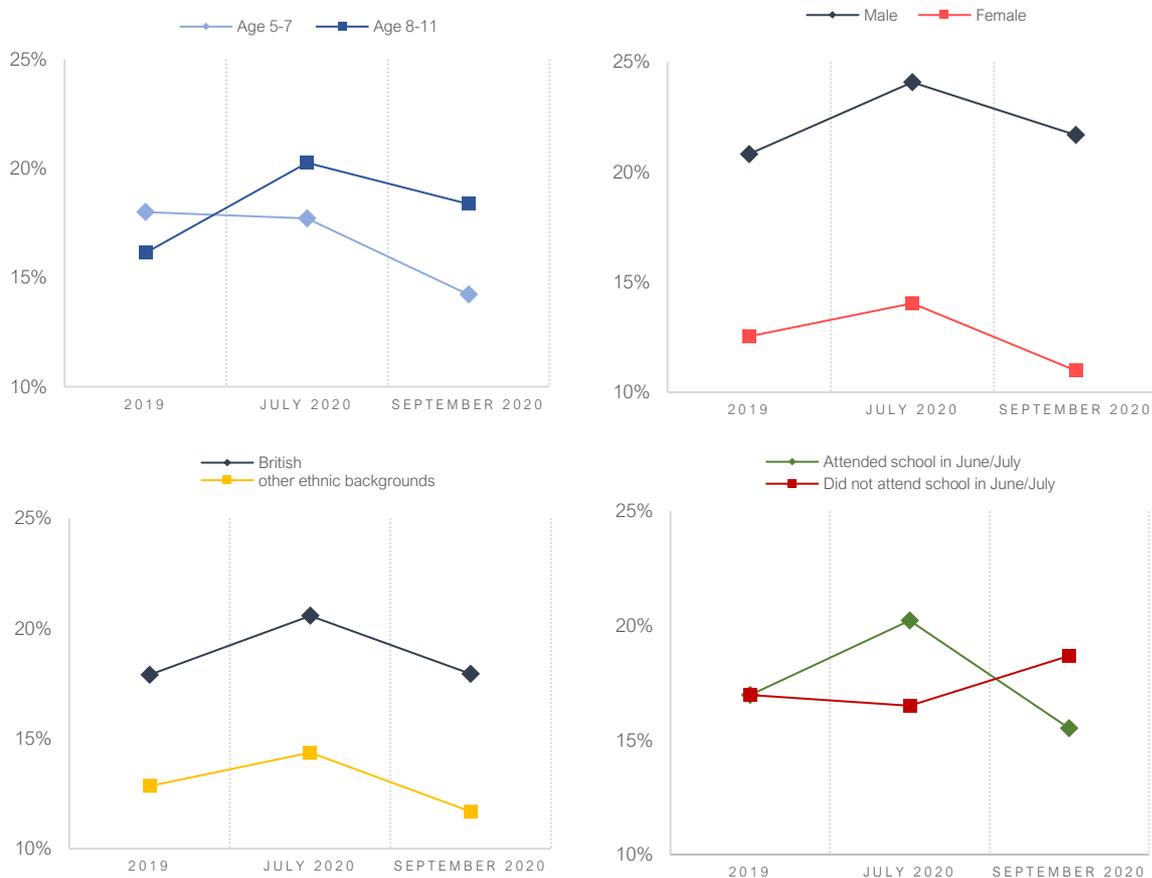
Figure 5 shows different patterns between children in different age groups and children who attended school in June/July compared to those who did not. While the percentage of children aged 5 to 7 years with abnormal hyperactive score decreased between 2019 and September 2020, the opposite is true for children aged 8 to 11 years. Similarly, children who attended school in June/July 2020 are less likely to have an abnormal score in September 2020. In contrast, the percentage of children who did not attend school in June/July with abnormal score increased from 17% in 2019 to 19% in September 2020.

**Figure 4. Proportion of children aged 5 to 11 years with an abnormal hyperactivity score**



Source: Understanding Society

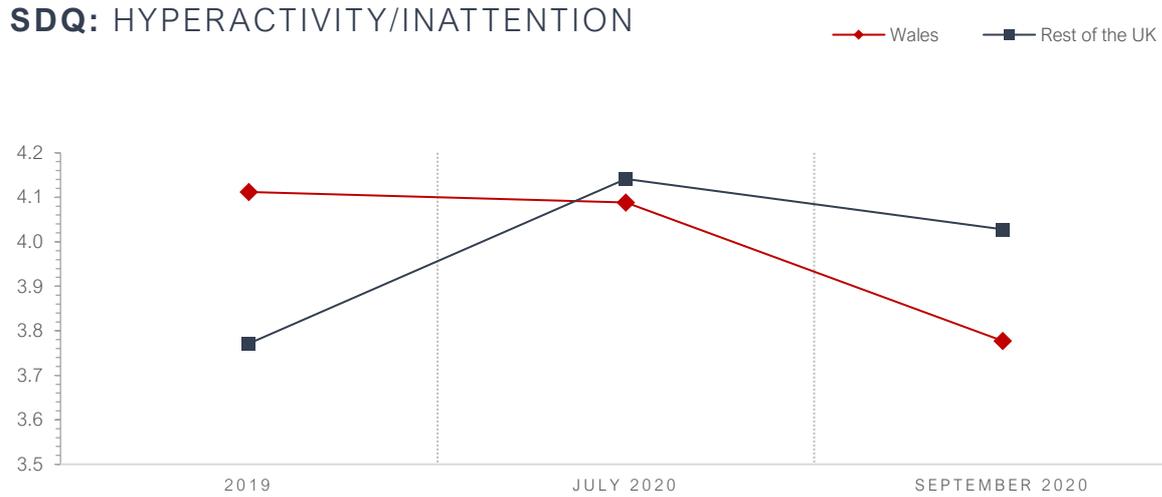
**Figure 5. Proportion of children aged 5 to 11 years with an abnormal hyperactivity score, by age group, gender, ethnicity, and school attendance**



Source: Understanding Society

Figure 6 shows the comparison between the average hyperactivity score for children living in Wales and children living in the rest of the UK. The figure shows that the average score decreased for children living in Wales since the beginning of the pandemic, while it increased for children living in the rest of the UK. However, both across Wales and the rest of the UK, the average hyperactivity score remained in the normal range throughout the pandemic.

**Figure 6. Hyperactivity score for children aged 5 to 11 years, by country of residence**

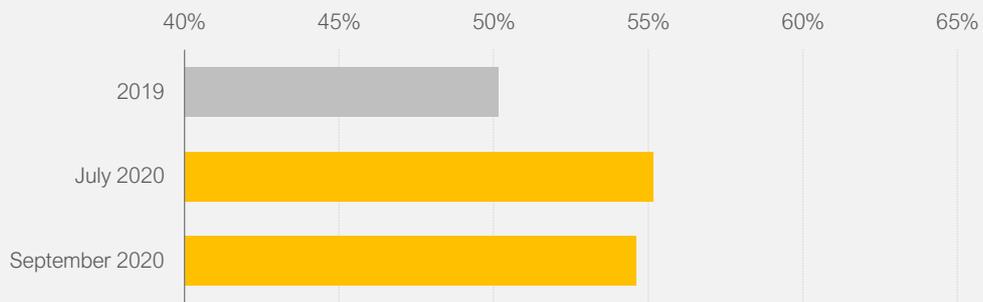


Source: Understanding Society

### SDQ Hyperactivity/Inattention subscale: Restless

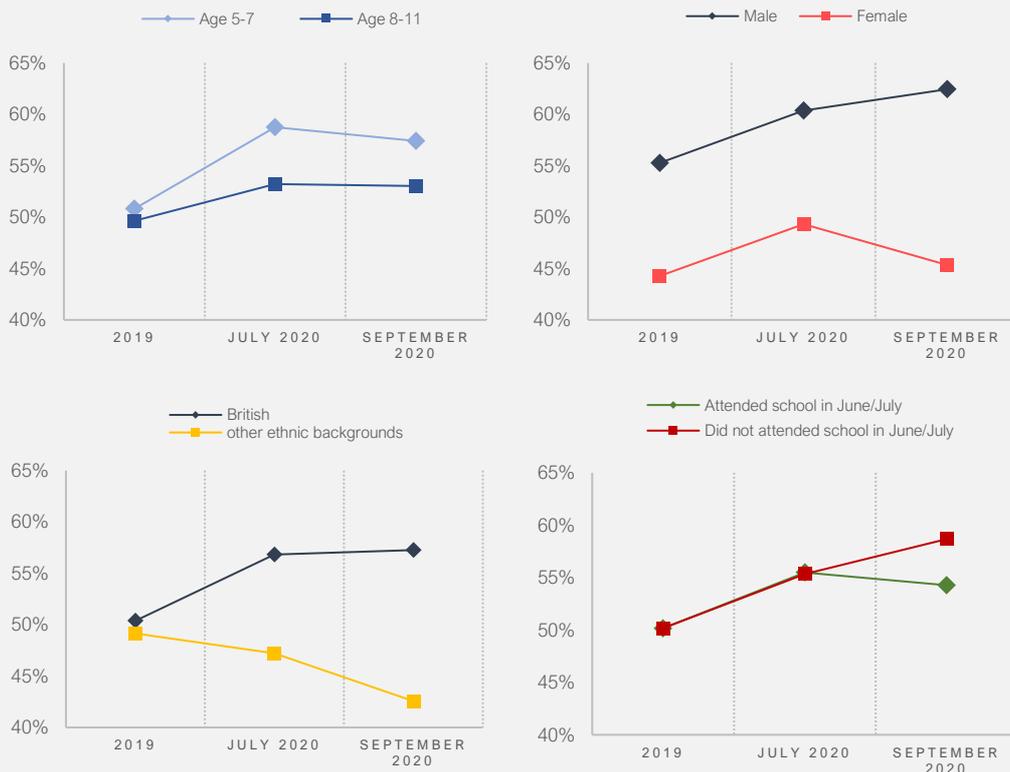
The measure that contributes to the hyperactivity score that was most affected since the beginning of the pandemic is the restless measure. The proportion of children whose parents declared being restless/overactive was approximately 55% both in July and September 2020, compared to 50% in 2019 (Figure B5). Figure B6 shows that the most affected children were boys, children aged 5 to 7 years, children belonging to the British ethnic group, and children who did not attend school in June/July 2020.

**Figure B5. Proportion of children restless/overactive**



Source: Understanding Society

**Figure B6. Proportion of children restless/overactive, by age group, gender, ethnicity, and school attendance**



Source: Understanding Society

## Peer relationship subscale

### Summary of the findings

- The proportion of children aged 5 to 11 years with abnormal peer problems score increased in July and September 2020 compared to 2019.
- Among children who did not attend school in June and July, the proportion of those with abnormal peer problems score increased more compared to children who attended school in June and July.
- The average peer problems score of children living in Wales follows a similar trend to the rest of the UK. It increased in July 2020 (indicating worse condition) but went back to a normal range level in September 2020.

The peer relationship subscale measures whether children show difficulties in establishing relationships. The subscale score is defined based on the following five items:

1. Rather solitary, tends to play alone
2. Has at least one good friend
3. Generally liked by other children
4. Picked on or bullied
5. Gets on better with adults than with other children

The peer problems score is categorised according to the total score achieved in the five items listed above. The categories are shown in Table 4.

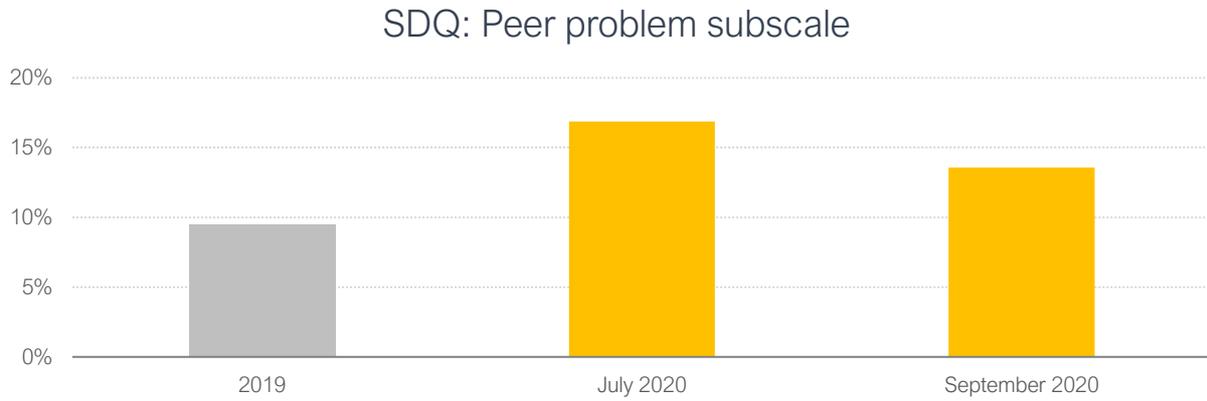
**Table 4. SDQ Peer problems scores: categories**

	Normal	Borderline	Abnormal
<b>Peer problems score</b>	0-2	3	4-10

Figure 7 shows the proportion of children aged 5 to 11 years with an abnormal peer relationship score before and after the COVID-19 pandemic. The figure shows that the percentage increased from 10% in 2019 to approximately 15% in July 2020 and 14% in September 2020.

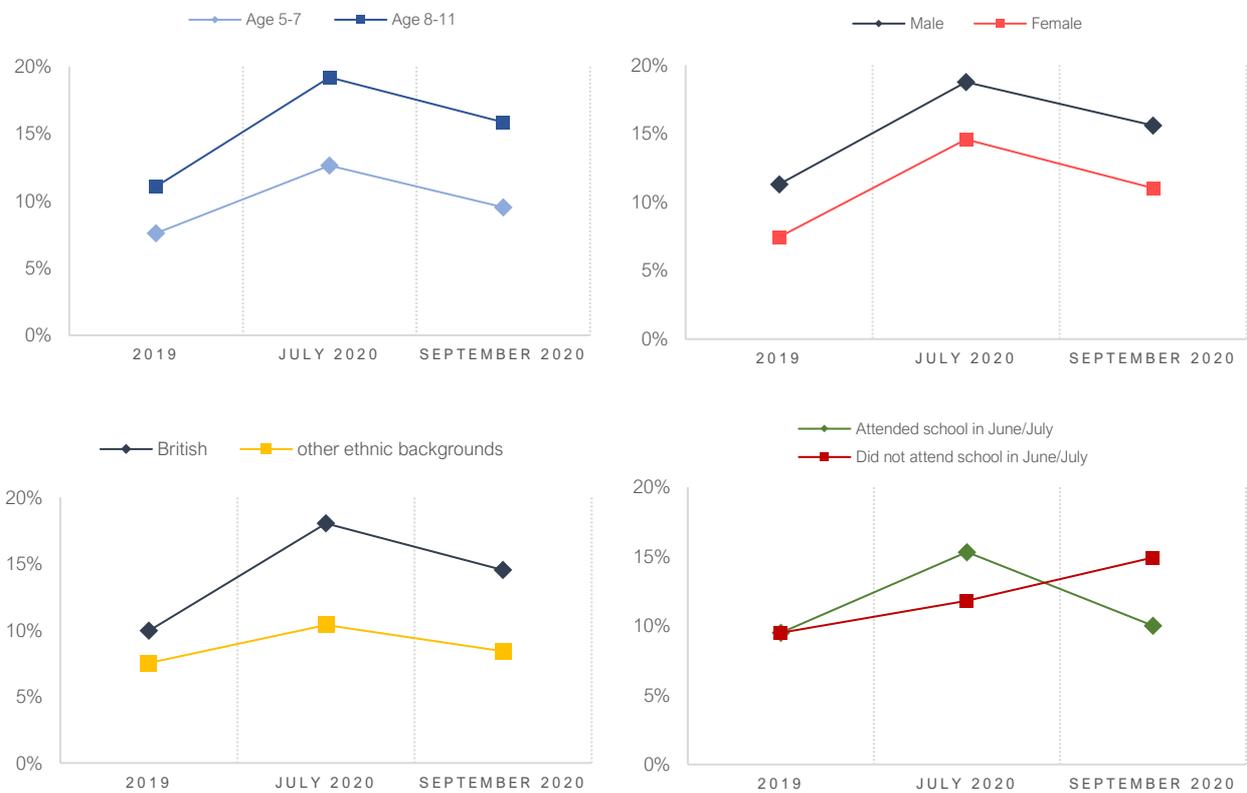
Figure 8 shows that the percentage of children with an abnormal score demonstrated a similar pattern across age groups and gender. Instead, different trends have been found for children based on their school attendance in June and July 2020. The percentage of children with an abnormal score who did not attend school in June/July increased since 2019 (9.5%) to 15% in September 2020. In addition, the proportion of British children with an abnormal score in July 2020 increased more compared to 2019 (+8%) than other ethnic backgrounds children (+2%).

**Figure 7. Proportion of children aged 5 to 11 years with an abnormal peer relationship score**



Source: Understanding Society

**Figure 8. Proportion of children aged 5 to 11 years with an abnormal peer relationship score, by age group, gender, ethnicity, and school attendance**

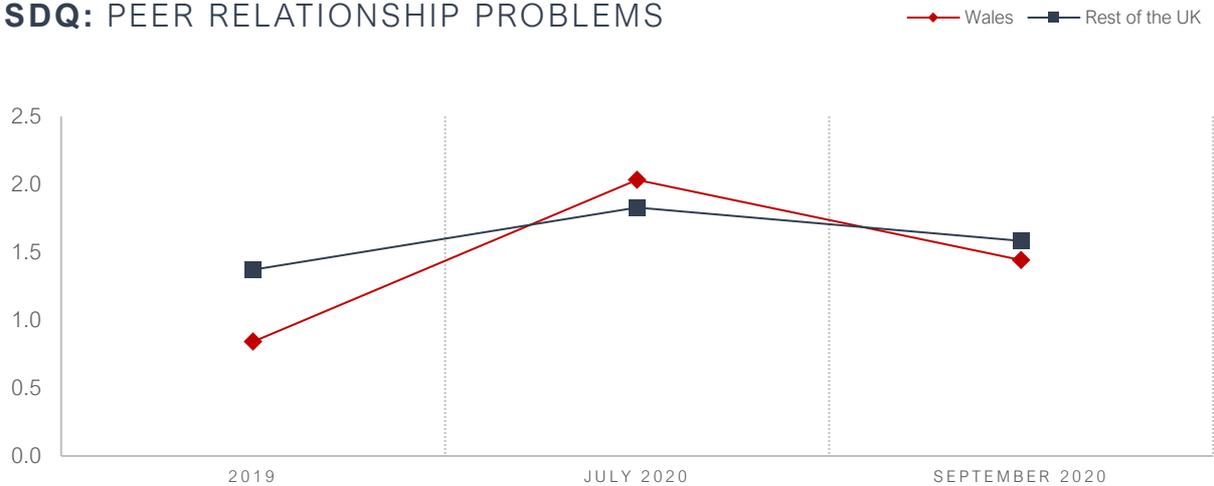


Source: Understanding Society

Finally, Figure 9 shows that the average peer problems score of children living in Wales follows a similar trend to the average scores of children living in the rest of the UK. In July 2020. The average score registered in July 2020 both across Wales and the rest of the UK was close to 2, which is the threshold between normal and borderline score. However, the score in September 2020 was back in the normal range.

**Figure 9. Peer problems score of children aged 5 to 11 years, by country of residence**

**SDQ: PEER RELATIONSHIP PROBLEMS**



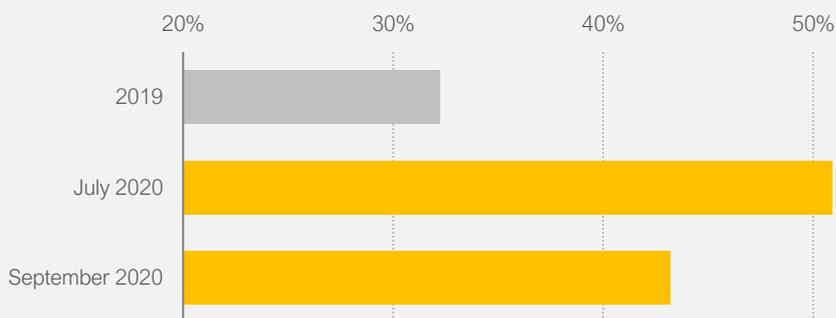
Source: Understanding Society

**SDQ Peer relationship subscale: Solitary**

The most affected measure among those included in the peer problem score was the likelihood of children spending time alone. This is possibly due to school closure and restrictive measures imposed by the government after the start of the pandemic.

Figure B7 shows that the proportion of children likely to be solitary or play alone increased from 32% in 2019 to 51% in July 2020. It remained relatively high (43%) in September 2020.

**Figure B7. Figure B7: Proportion of solitary children aged 5 to 11 years**



Source: Understanding Society

## Conduct subscale

### Summary of the findings

- Among the measures analysed, the conduct subscale, measuring symptoms of conduct disorders subscale, was the least affected by the pandemic.
- For the groups analysed, in most cases the proportion of children with an abnormal conduct problems score in September 2020 was lower than in 2019.
- Both across Wales and the rest of the UK the average conduct problems score remained in the normal range throughout the pandemic.

The conduct subscale measures whether children show symptoms of conduct disorders. The total score of the subscale is defined based on the five items below:

1. Often has temper tantrums or hot tempers
2. Generally obedient
3. Often fights with other children
4. Often lies or cheats
5. Steal from home, school or elsewhere

The conduct score is categorised according to the total score achieved in the five items listed above. The categories are shown in Table 5.

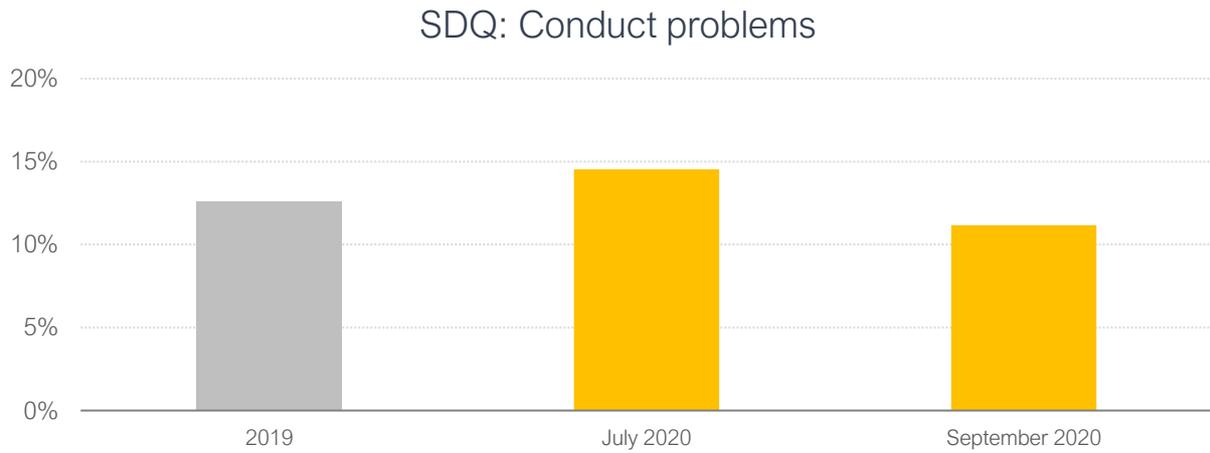
**Table 5. SDQ Conduct problems scores: categories**

	<b>Normal</b>	<b>Borderline</b>	<b>Abnormal</b>
<b>Conduct problems score</b>	0-2	3	4-10

The proportion of children with abnormal conduct problems score increased by approximately 2 percentage points between 2019 and July 2020. However, in September 2020, the percentage dropped below the baseline level measured in 2019 (Figure 10). Among the measures analysed so far, this subscale was the least affected by the pandemic.

The groups with a higher percentage of children with an abnormal conduct score were children aged 5 to 7 years, and children who did attend school in June/July (Figure 11). For both groups, the amount of children with an abnormal score in September 2020 was lower than in 2019.

**Figure 10. Proportion of children aged 5 to 11 years with an abnormal conduct score**



Source: Understanding Society

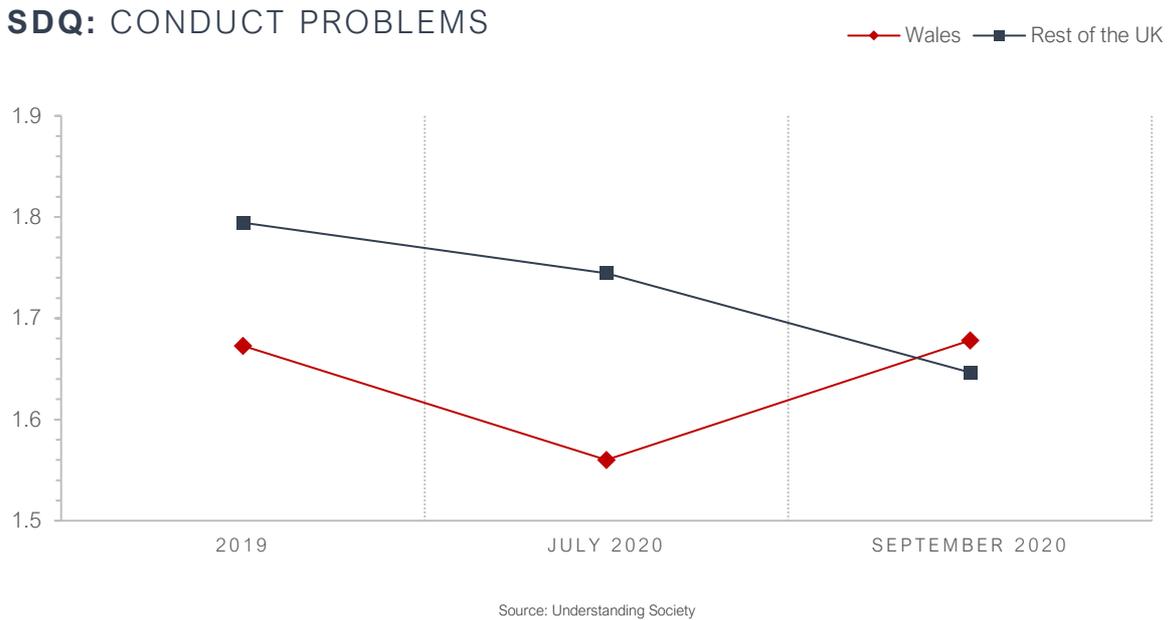
**Figure 11. Proportion of children aged 5 to 11 years with an abnormal conduct score, by age group, gender, ethnicity, and school attendance**



Source: Understanding Society

For children in Wales, the overall average score measured in September 2020 was similar to that in 2019, showing a recovery from the decline that happened in July 2020 (Figure 12). For children living in the rest of the UK, the average score shows a steady decline throughout the pandemic. However, both across Wales and the rest of the UK the average score remained in the normal range throughout the pandemic.

**Figure 12. Conduct problems score of children aged 5 to 11 years, by country of residence**



## Prosocial subscale

### Summary of the findings

- The proportion of children with abnormal prosocial score slightly rose in September 2020 compared to 2019.
- Among the demographic groups analysed, children aged 5 to 7 years show the highest increase in the proportion of children with abnormal prosocial score.
- The average prosocial score across Wales increased since 2019, indicating less severe difficulties. The score remained relatively constant for children living in the rest of the UK.

Finally, the last subscale analysed is the prosocial subscale. This subscale measures the extent to which children display prosocial behaviours. It is defined according to five items:

1. Considerate of other people's feelings
2. Shares readily with other children
3. Helpful if someone is hurt
4. Kind to younger children
5. Often volunteers to help others

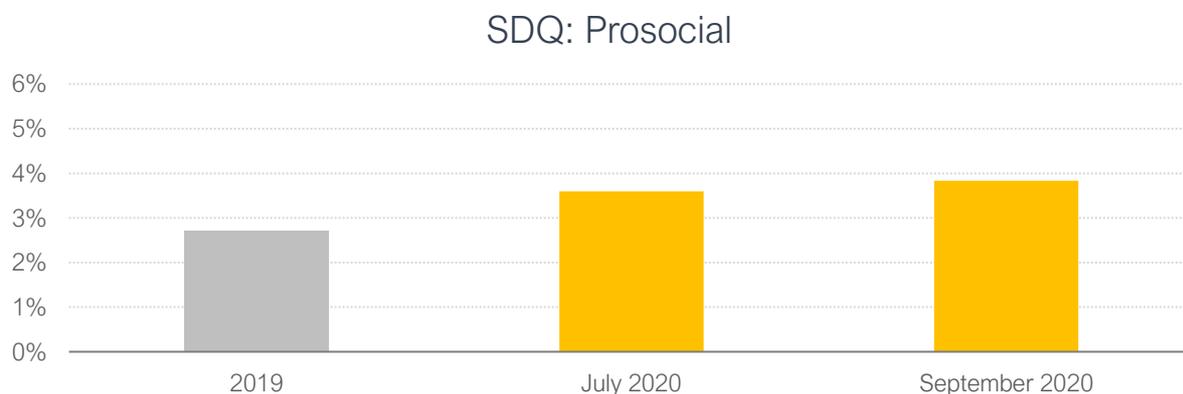
The prosocial problems score is categorised according to the total score achieved in the items listed above. The categories are shown in Table 6.

**Table 6. SDQ Prosocial problems scores: categories**

	Normal	Borderline	Abnormal
<b>Conduct problems score</b>	6-10	5	0-4

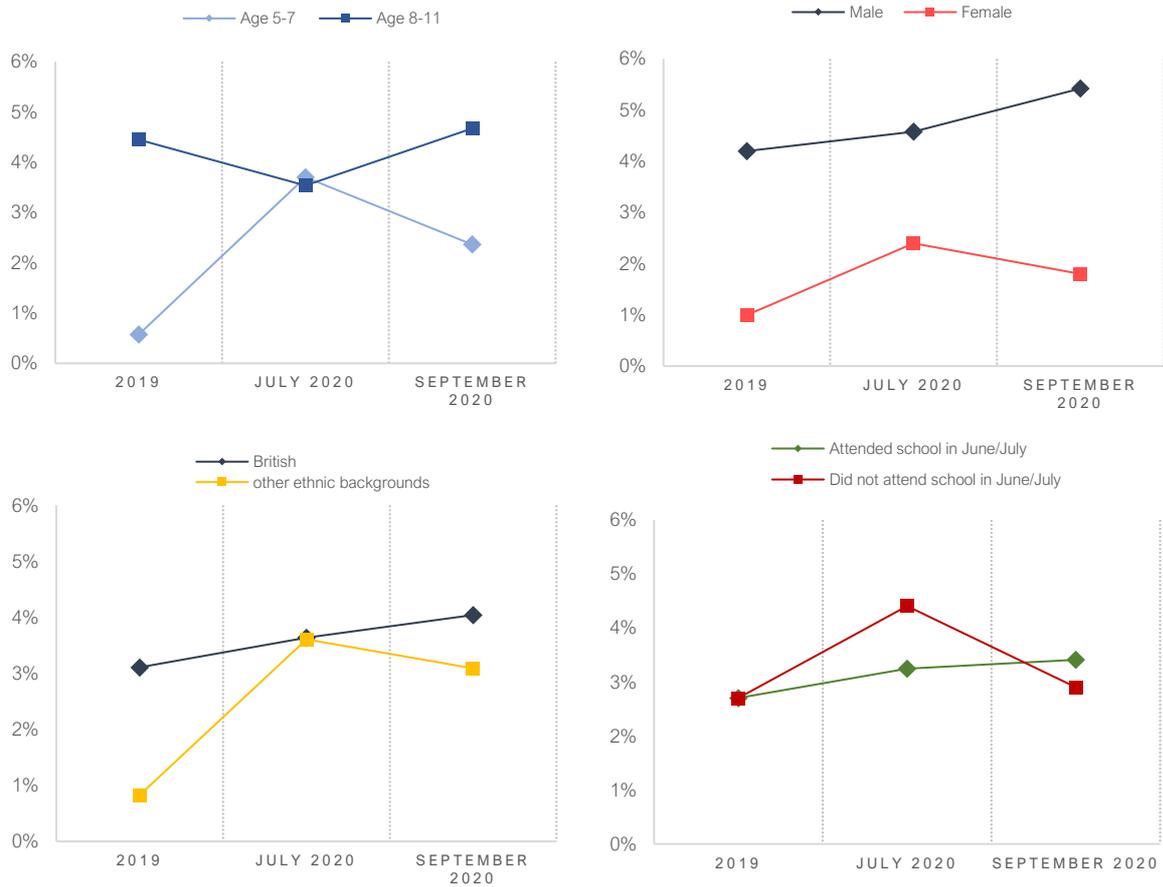
Figure 13 shows that, in September 2020, the proportion of children with abnormal prosocial score slightly rose slightly compared to 2019. The group of children aged 5 to 7 years (whose percentage of children with abnormal score was considerably low in 2019) have been the most affected. Indeed, in July 2020, the proportion rose to 4%, compared to 1% in 2019 (Figure 14).

**Figure 13. Proportion of children aged 5 to 11 years with an abnormal prosocial score**



Source: Understanding Society

**Figure 14. Proportion of children aged 5 to 11 years with an abnormal prosocial score, by age group, gender, ethnicity, and school attendance**

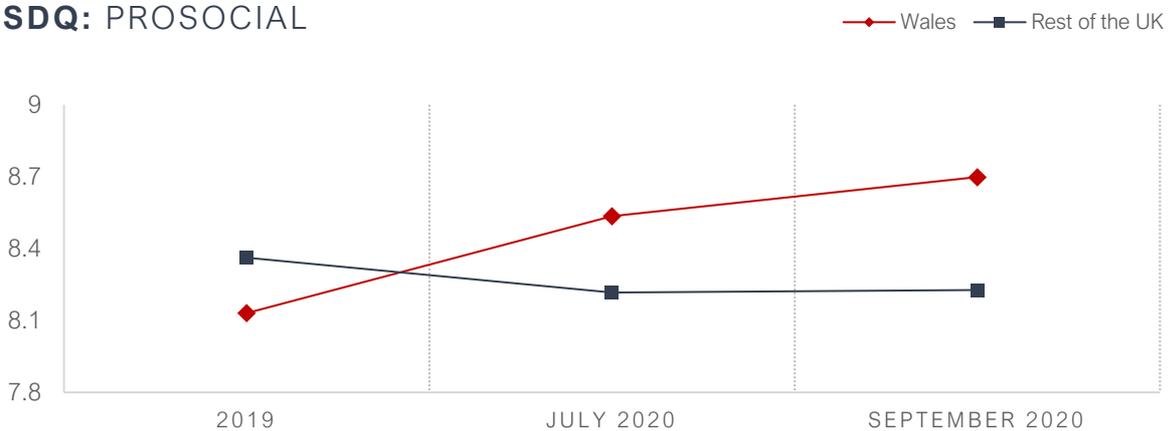


Source: Understanding Society

Overall, the average score does not seem to have been negatively affected during the pandemic. In particular, the average score of children living in Wales has increased since 2019, indicating less severe difficulties (Figure 15). The score remained relatively constant for children living in the rest of the UK.

**Figure 15. Prosocial score of children aged 5 to 11 years, by country of residence**

**SDQ: PROSOCIAL**



Source: Understanding Society

## Chapter 7

# Children aged 10 to 15 years Self completed Strength and Difficulties Questionnaire

### Summary of the findings

- The proportion of children aged 10 to 15 years with severe difficulties (i.e., abnormal scores) across the five subscales in July 2020 was not dissimilar to the one measured in 2019.
- Comparing the average score of children living in Wales and those living in the rest of the UK suggests that the average score remained relatively constant between 2019 and July 2020 both in Wales and in the rest of the UK and the average score is relatively similar between children living in Wales and those living in the rest of the UK.
- It is important to note that the self-reported SDQ might not be suitable for children with a reading age below 13 to 14 years.

This section provides an overview of the mental well-being outcomes for children aged 10 to 15 years surveyed in July 2020. Unlike the results presented in the last chapter, children in this sample self-completed the SDQ. Children were asked to complete the questionnaire only in July so there is limited information on how mental well-being outcomes evolved throughout the pandemic. Table 7 shows the characteristics of the children included in the sample.

**Table 7. Characteristics of children aged 10 to 15 years participating in the COVID-19 Study**

<b>Average age</b>	13
<b>% male</b>	50%
<b>% British</b>	70%
<b>% children living in Wales</b>	5%
<b>Sample size</b>	~ 1400

Source: Understanding Society

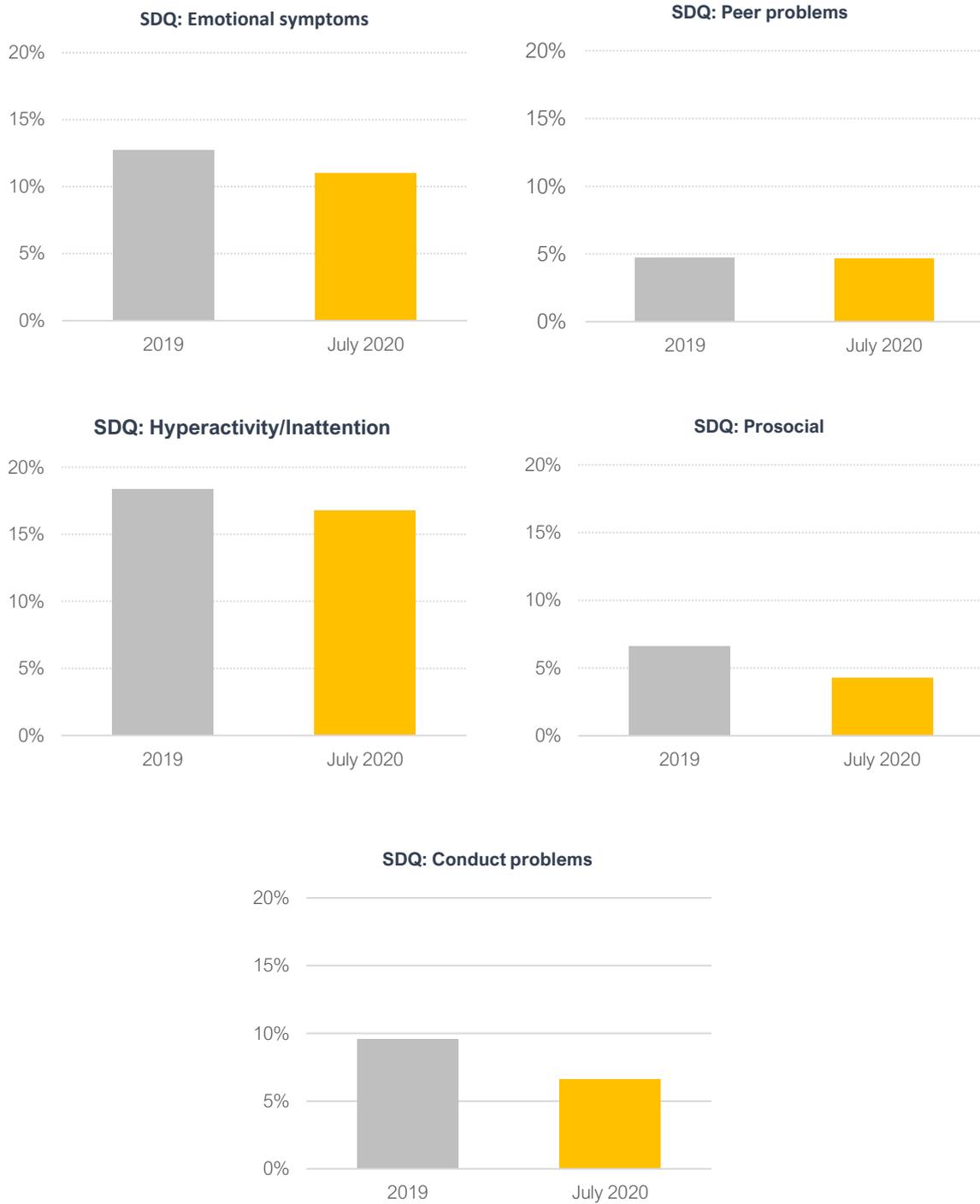
Figure 16 shows the proportion of children reporting abnormal score in the five SDQ subscales measured using the questionnaire. The results suggest that the proportion of children with severe difficulties (i.e., abnormal scores) across the five subscales in July 2020 was not dissimilar to the one measured in 2019. Results in July are similar to those in 2019. However, due to the lack of data, it is not possible to investigate in more detail the evolution of the mental well-being outcomes of children aged 10 to 15 years throughout the COVID-19 pandemic.

Figure 17 shows the average scores of children aged 10 to 15 years in the SDQ subscales by country of residence. Comparing the average score of children living in Wales and those living in the rest of the UK suggests that (i) the average score remained relatively constant between 2019 and July 2020 both in Wales and in the rest of the UK and (ii) the average score is relatively similar between children living in Wales and those living in the rest of the UK.

While these results suggest that the mental well-being outcomes of children aged 10 to 15 years did not change throughout the pandemic, it is worth mentioning that previous studies highlight that the self-reported SDQ might not be suitable for young people with a reading age below 13 to 14 years.

A recent study conducted by Patalay et al. (2018) found that while some subscales have a readability age of around 11 to 12 years, others (for example, emotional symptoms and hyperactivity) have substantially higher readability age (13 to 14 years), making the questionnaire hard to understand for children aged below 11 years. This suggests self-reported measures might not be reliable, possibly due to the difficulties that some children encounter in understanding and interpreting some of the questions.

**Figure 16. Proportion of children aged 10 to 15 years with an abnormal score**



Source: Understanding society

**Figure 17. Average score obtained in SDQ subscales by children aged 10 to 15 years, by country of residence**



Source: Understanding society

## Chapter 8

# Young people aged 16 to 24 years

### Summary of the findings

- The average mental well-being of young people aged 16 to 24 years worsened in the first months of the pandemic (April, May, and June), while it improved in July and September 2020.
- The proportion of young people declaring being less happy than usual increased by 12 percentage points between 2019 and April 2020. It remained relatively high until June, after which it started to decrease.
- Young people in the age group 21 to 24 years were more likely to feel less able to make decisions than those in the age group 16-20 years.
- The proportion of young people feeling that they were losing confidence more than usual shows a drastic jump at the beginning of the pandemic but decreases from May onwards.

Young people aged 16 to 24 years were asked to complete the 12-item version of the GHQ in each wave of the COVID-19 study. The GHQ is a self-administered screening questionnaire. It is commonly used to measure current mental health and mental well-being status and its development, as well as to detect psychological distress and risk for common mental disorders.

The GHQ consists of 12 items using a 4-point scale (from 0 to 3). The sum of each item's scores is used to generate a total score (from 0 to 36), with higher scores indicating worse condition.

For each item, the answers range from 'more than usual' through 'same as usual' and from 'worse/more than usual' to 'much worse/more than usual' options. The 12 items included in the GHQ are shown in Table 8.

**Table 8. GHQ 12 items**

Item	Score
Able to concentrate	0-3
Loss of sleep over worry	0-3
Playing a useful role	0-3

Capable of making decisions	0-3
Feel constantly under strain	0-3
Problem overcoming difficulties	0-3
Able to enjoy day-to-day activities	0-3
Able to face problems	0-3
Feeling unhappy or depressed	0-3
Losing confidence	0-3
Thinking of self as worthless	0-3
Feeling happy	0-3
<b>Likert score</b>	<b>0-36</b>

Like the analysis conducted for children aged 5 to 11 years, mental well-being outcomes were analysed across young people's characteristics:

- **Age**
- **Gender**
- **Health problems:** outcomes are compared between young people with a pre-existing health condition to those who report no health problems. Health problems are not related to COVID-19.
- **Employment status:** the outcomes are compared between young people in employment at the time of the survey and those not in employment (including full-time students, unemployed, apprenticeship etc.)

The final sample of young people aged 16 to 24 years participating in the COVID-19 Study includes approximately 4,500 respondents. Table 9 shows the characteristics of young people in the sample.

**Table 9. Characteristics of young people aged 16 to 24 years participating in the COVID-19 Study**

<b>Average age</b>	20
<b>% male</b>	43%
<b>% British</b>	66%
<b>% young people aged 16 to 20 years</b>	55%
<b>% young people living in Wales</b>	5%
<b>% young people in employment</b>	45%
<b>% young people with a health condition</b>	18%
<b>Sample size</b>	~ 4,500

Source: Understanding Society

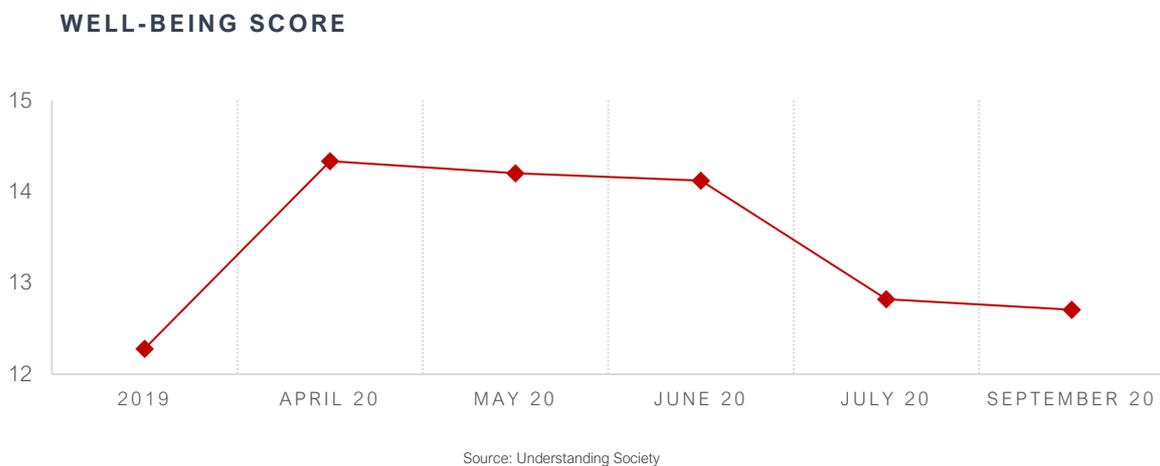
## Well-being score

As explained in a previous chapter, the subjective well-being score (Likert score) is calculated based on the scores obtained from the 12 items included in the GHQ. The score goes from 0-36, with higher scores indicating a lower level of mental well-being.

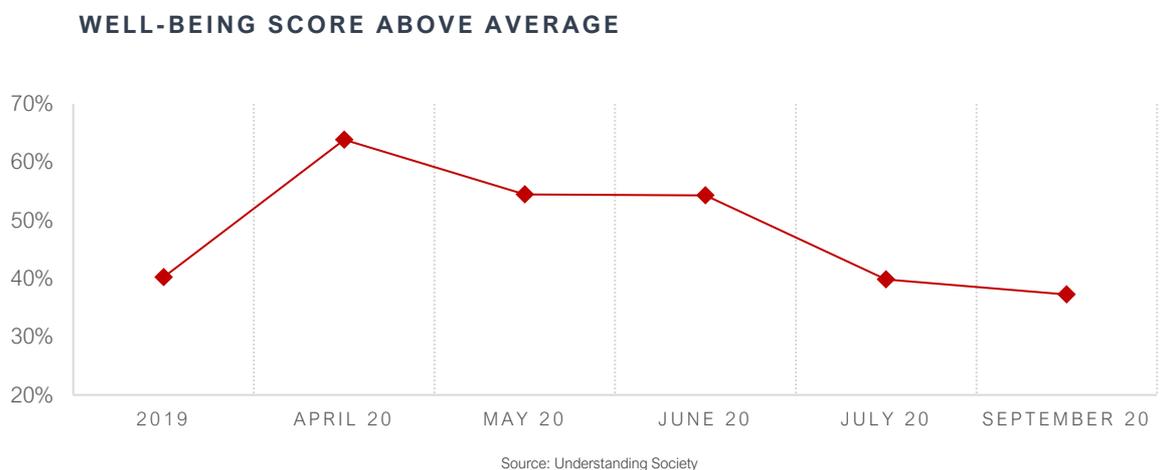
The average subjective well-being score for individuals aged 16 to 24 years is plotted in Figure 18. The figure shows that the average score increased in the first months of the pandemic (April, May, and June). This suggests that, overall, there was a drop in the level of mental well-being for young people. However, the average score decreased in July and remained constant in September.

A similar trend is shown in Figure 19. The figure reports the proportion of respondents whose subjective well-being score was above the average score (calculated in 2019). The proportion increased by more than 20 percentage points between 2019 and April 2020, rising from 40% to 64%. Since May 2020, the share of respondents with an above-average score has decreased steadily, and, in September 2020, it was lower (37%) than the 2019 baseline level.

**Figure 18. Well-being score of young people aged 16 to 24 years**



**Figure 19. Proportion of young people whose well-being score is above the average**



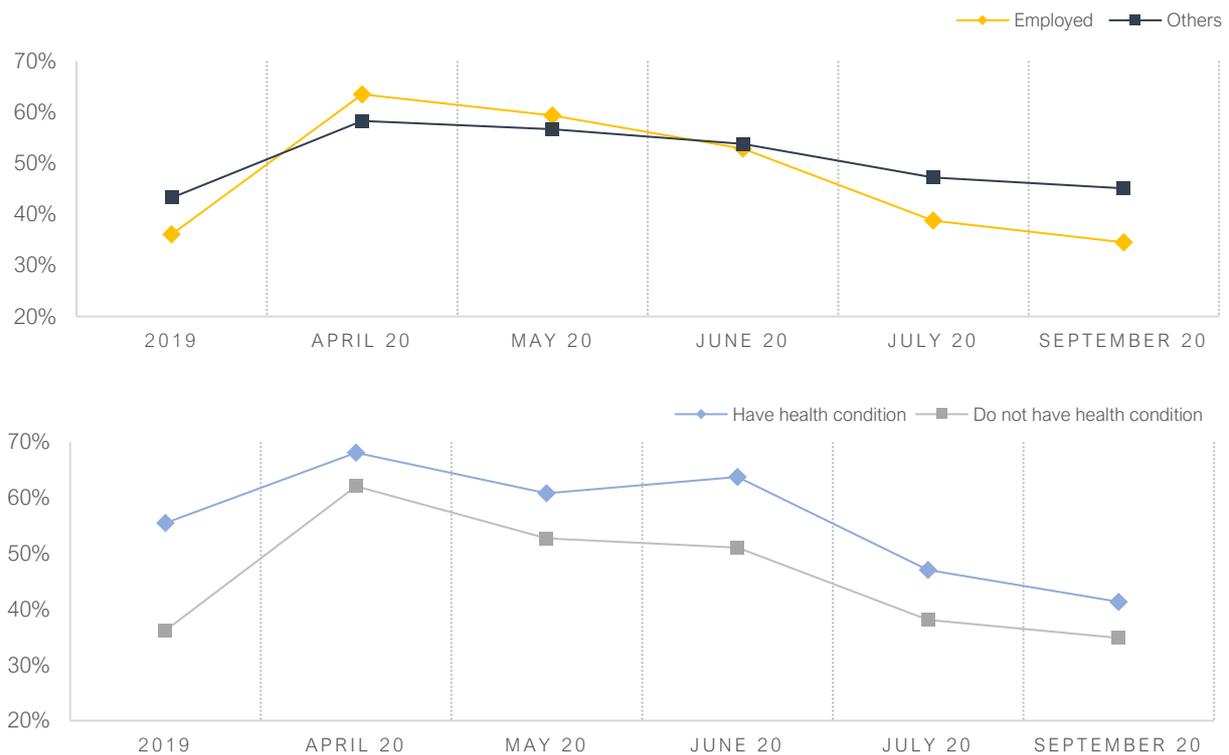
The percentage of young people whose score was above average that were employed at the time of the survey almost doubled between 2019 (36%) and April 2020 (66%). For those who are not employed the proportion increased from 43% in 2019 to 58% in April 2020 (Figure 20). For both employed and non-employed youth, the proportion follows a similar trend in the first months. In July and September, the proportion of those who are not employed with high score recovered slower than for those in employment.

Similar trends are also observed when comparing individuals with health problems to those without health problems. Interestingly, despite the initial wide gap between the two groups in 2019, when the proportion was much higher (55%) for individuals with health problems compared to those without (36%), the gap was smaller in September 2020. This was due to a sharp decrease in the proportion of individuals with health problems whose score is above the average.

Figure 21 shows the percentage of Welsh-based individuals whose mental well-being scores were above the average compared to those living in the rest of the UK. As the sample of Welsh respondents in September was very small, the figure shows the comparison between outcomes up to July 2020 (out of the sample of respondents in September 2020 only 32 lived in Wales). The figure shows a similar trend between Wales and the rest of the UK in the early months, with the proportion increasing similarly. Since May 2020, the proportion started to decrease more rapidly in Wales than the rest of the UK. In September, the share of respondents whose score was above the average was very similar among the two groups and comparable to the pre-COVID-19 level.

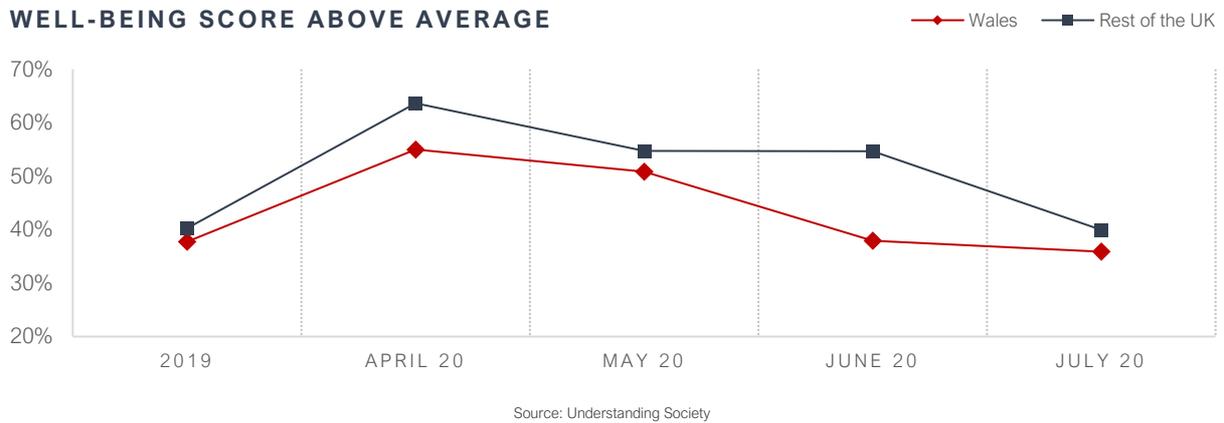
The sections below present the analysis of the 12 items included in the GHQ. The analysis will particularly focus on happiness, depression, confidence, and the ability to make decisions. An overview of the other items can be found at the end of the sections.

**Figure 20. Proportion of young people with well-being score above average, by employment status and health condition**



Source: Understanding Society

**Figure 21. Well-being score above average, by country of residence**



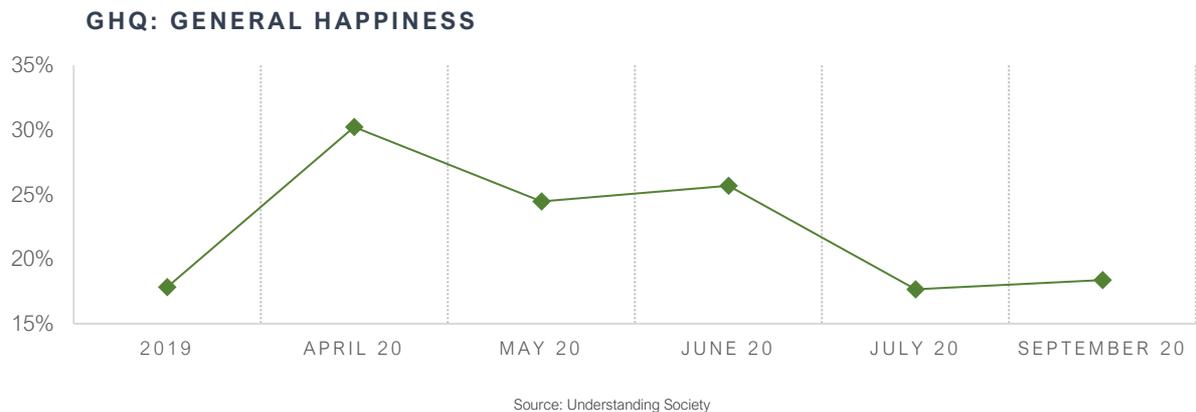
## General happiness

One of the 12 items included in the GHQ evaluates the general level of happiness of the respondents. Respondents were asked whether they felt more/same/or less (and much less) unhappy than usual.

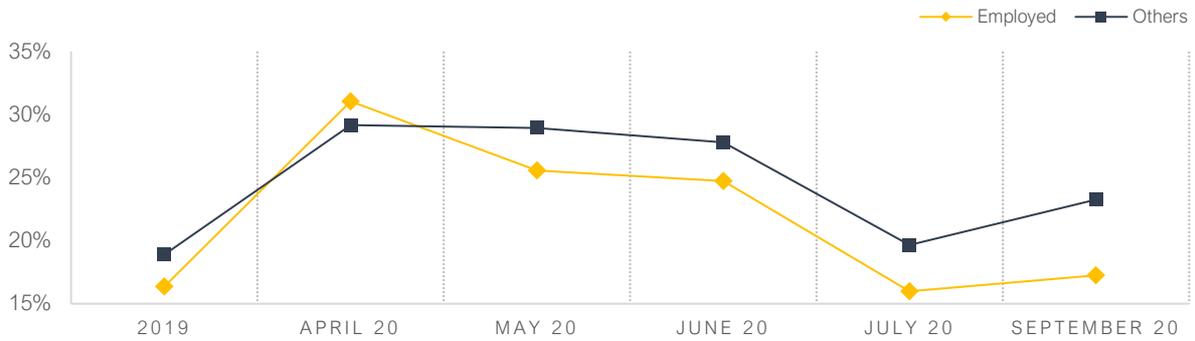
Figure 22 illustrates the proportion of respondents who reported being less (or much less) happy than usual. The proportion of young people declaring being less happy than usual increased by 12 percentage points between 2019 and April 2020. It remained relatively high until June, after which it started to decrease.

Figure 23 shows that the proportion of young people reporting being less happy than usual follows a similar trend for the employed and not employed until July. In the last wave of the survey, however, the proportion of the unemployed who reported being less happy than usual increased by almost 4 percentage points, while it remained constant for those in employment.

**Figure 22. Proportion of young people reporting to feel less (or much less) happy than usual**



**Figure 23. Proportion of young people reporting to feel less (or much less) happy than usual, by employment status**



Source: Understanding Society

## Unhappy or depressed

The GHQ included an additional question about happiness. Respondents were asked to report whether they felt more unhappy or depressed than usual. Like the question on general happiness described above, respondents choose between much more/more/same/less unhappy than usual.

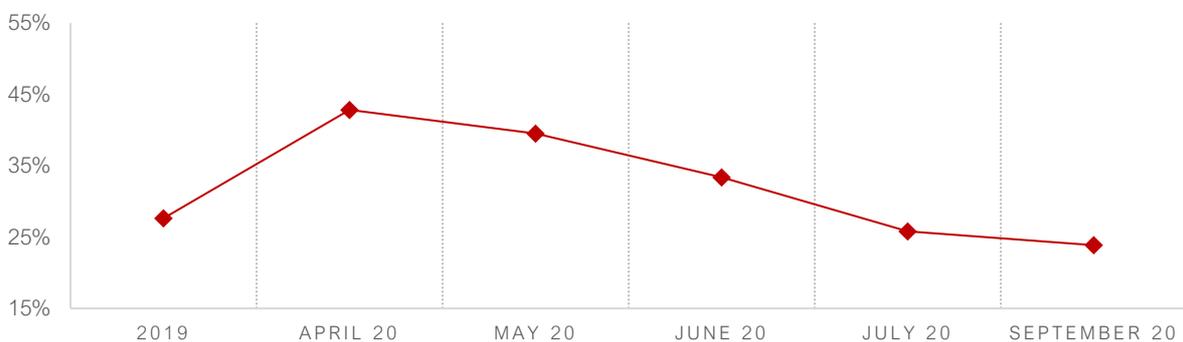
Figure 24 shows the percentage of young people reporting feeling more or much more unhappy or depressed than usual. The proportion almost doubled between 2019 and April 2020, with 43% of respondents declaring feeling less happy or more depressed. Since April, the proportion has decreased, reaching 24% in September (4 percentage point lower than the proportion in 2019).

Figure 25 shows that the share of young people reporting a higher level of unhappiness/depression at the beginning of the pandemic increased more among those employed (+22 percentage points) than those not in employment (+9 percentage points). However, since July, the proportion decreased faster for those in employment, while in September 2020, 28% of young people not in employment reported being less happy than usual.

The figure reveals that young women were more likely to report feeling more unhappy/depressed than usual, especially at the beginning of the pandemic. The gap between the two genders was smaller (10%) in September compared to April (32%) 2020. Indeed, the percentage of young men feeling less happy than usual throughout the pandemic remained relatively stable compared to young women.

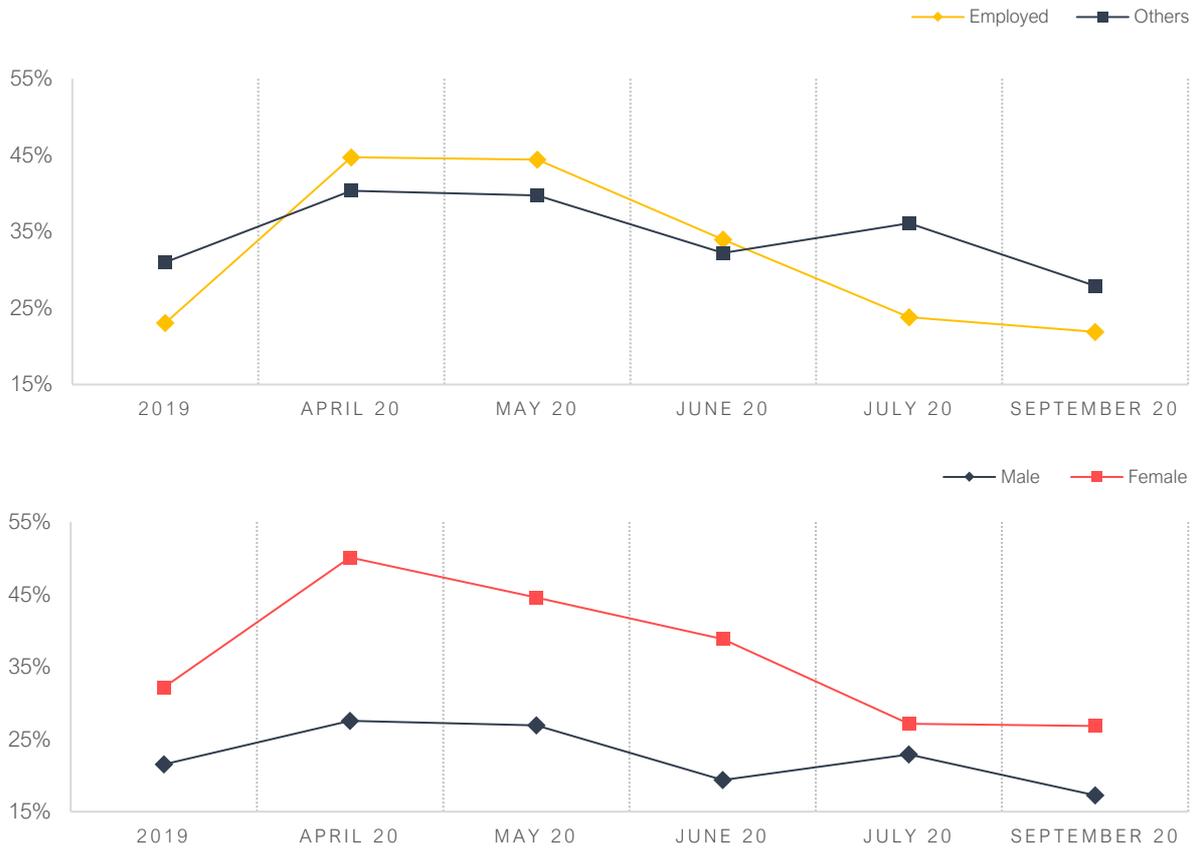
**Figure 24. Proportion of young people reporting to feel more (or much more) unhappy or depressed than usual**

### GHQ: UNHAPPY OR DEPRESSED



Source: Understanding Society

**Figure 25. Proportion of young people reporting to feel more (or much more) unhappy or depressed than usual, by employment status and gender**



Source: Understanding Society

## Losing confidence

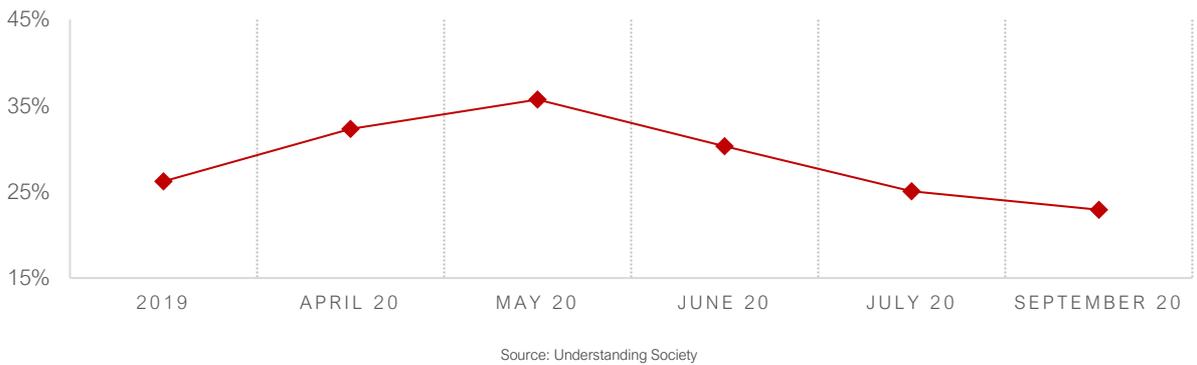
Another item that has been impacted during the COVID-19 pandemic is the sense of self-confidence experienced by young people. One of the GHQ questions asked respondents whether they felt they were losing confidence more (or less) than usual. Figure 26 displays the proportion of young people feeling that they were losing confidence more than usual. The trend is similar to the ones identified in previous items analysed. The figure shows a drastic jump at the beginning of the pandemic, while the proportion decreases from May onwards.

Figure 27 shows some differences in trends between young people based on their employment and health status. In particular, young people in employment were more likely to report losing confidence at the beginning of the pandemic, with the proportion increasing almost 20 percentage points from 2019 to April 2020. Both groups experienced a drop starting from May 2020; yet, while the proportion continued to decrease for those in employment, the proportion increased for those not in employment compared to July 2020. This supports the findings from the literature on unemployed youths' loss of confidence and generally lower mental well-being scores than their employed or in education counterparts.

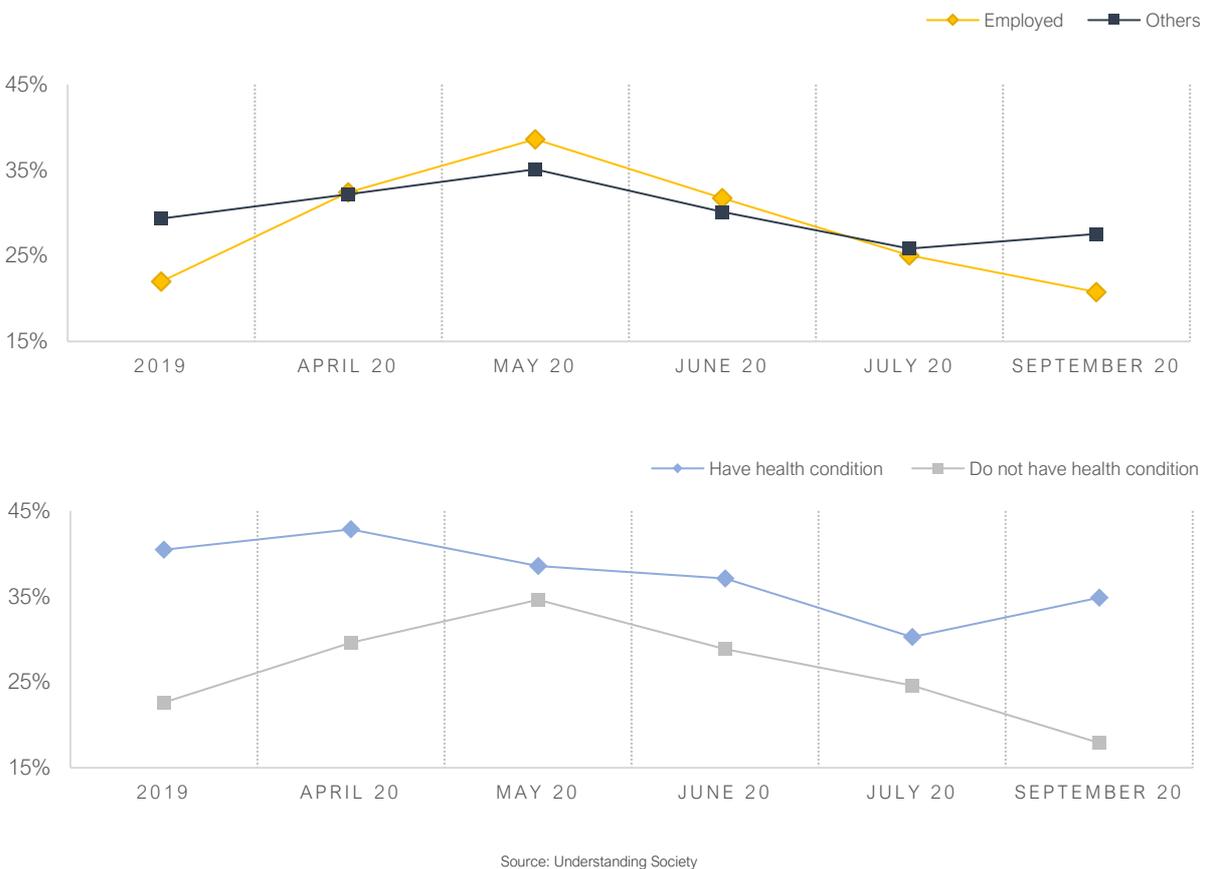
Figure 27 also shows a comparison between young people with health issues and those without. The two groups presented different levels in 2019, with young people reporting health issues being much more likely to report losing confidence. The gap between the two groups became much smaller in the middle of the pandemic (May 2020). However, while the proportion of young people with no health

conditions reporting losing confidence decreased since May, the opposite happened for those with health issues. In September, the proportion increased by 5 percentage points compared to July, while it decreased by 7 percentage points for young people with no health conditions.

**Figure 26. Proportion of young people reporting losing confidence more (or much more) than usual**  
**GHQ: LOSING CONFIDENCE**



**Figure 27. Proportion of young people reporting losing confidence more (or much more) than usual, by employment status and health condition**



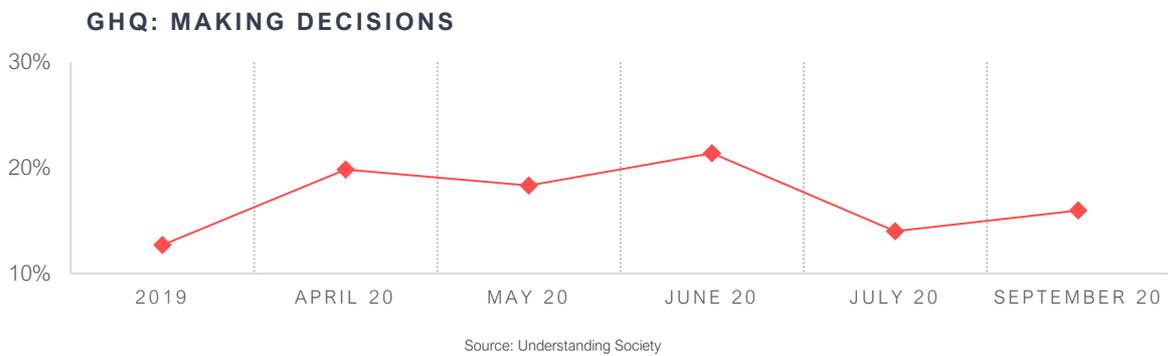
## Ability to make decisions

The final item analysed in this section relates to the ability to make decisions. Young people were asked whether they felt more or less capable of making decisions than usual. Along the lines of what

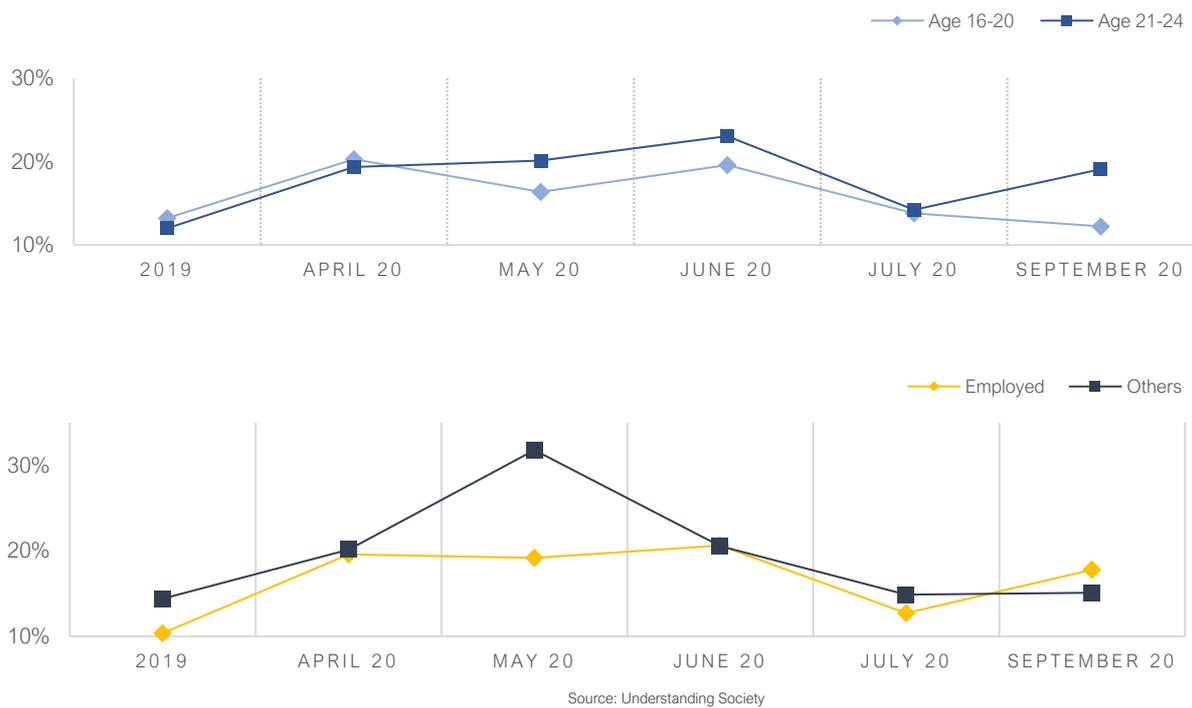
was observed for the previous items, the share of young people at the beginning of the pandemic who felt they were less capable of making decisions than usual increased compared to 2019. The proportion remained relatively high throughout the beginning of the summer, with approximately 20% of young people reporting they struggled to make decisions compared to 13% in 2019 (Figure 28).

Figure 29 shows that respondents in the age group 21 to 24 years were more likely to feel less able to make decisions than those in the age group 16-20 years. While the two groups showed relatively similar trends in the first waves of the survey, in September 2020, the percentage of young people incapable of making decisions was much higher among those aged 21 to 24 years compared to those aged 16 to 20 years. The figure also illustrates that young people not in employment felt less capable of making decisions, especially at the beginning of the pandemic compared to those in employment at the time of the survey. Finally, Figure 30 reports the trends of the other items included in the GHQ. As shown in the figure, all measures worsened in the first months of the pandemic compared to 2019.

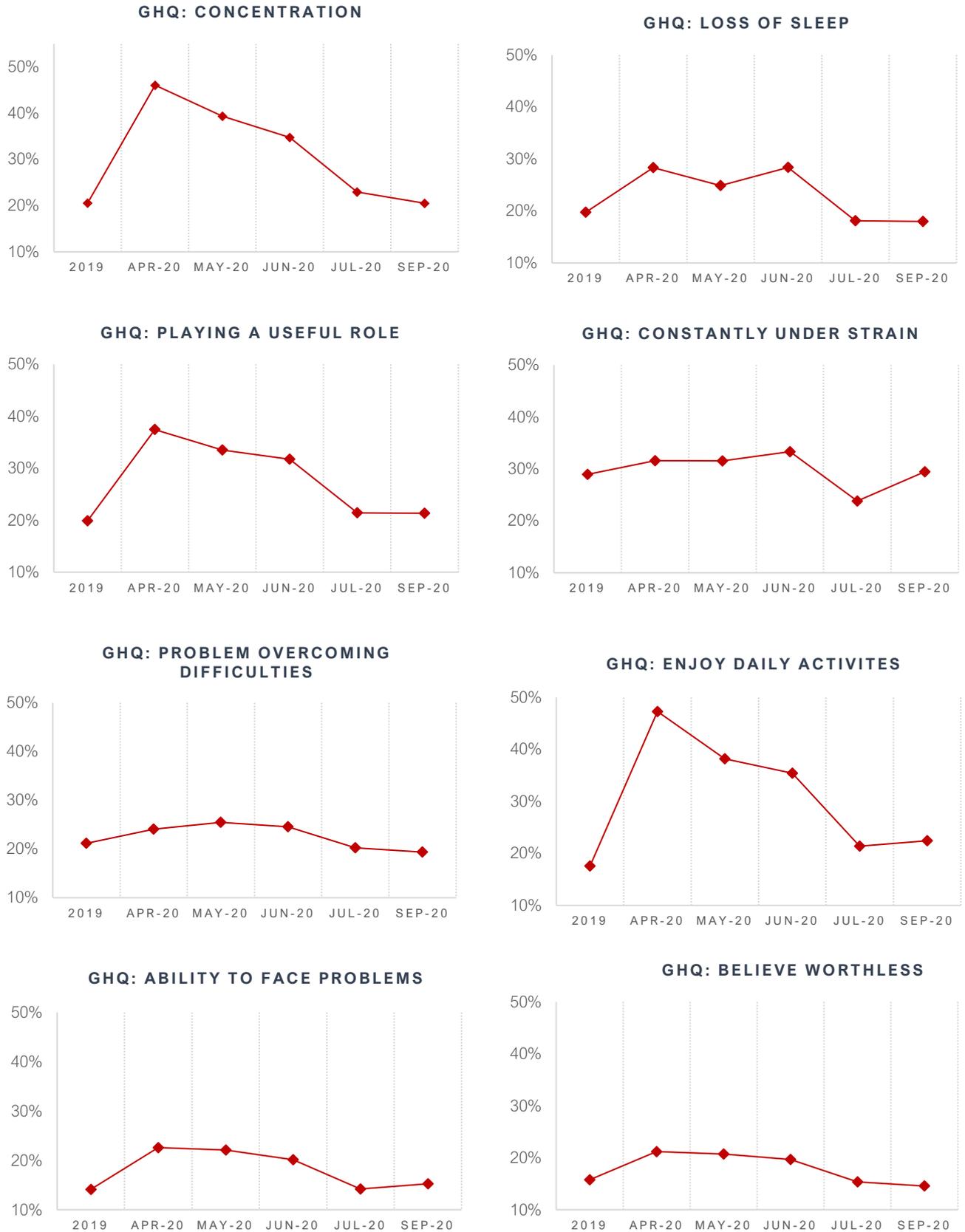
**Figure 28. Proportion of young people reporting to be less (or much less) able to make decisions**



**Figure 29. Proportion of young people reporting to be less (or much less) able to make decisions, by age group and employment status**



**Figure 30. Other items included in the General Health Questionnaire (the percentages relate to individuals finding these areas more difficult than usual or worse than usual)**



Source: Understanding Society

# Conclusion

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This report sought to assess and synthesise evidence on the impact of the pandemic and resulting policies on children and young people's mental well-being, aged from 0 to 24 years. This objective was achieved through a comprehensive literature review and an analysis of recent data capturing the changes in children and young people's mental well-being before and during the pandemic.

The literature is surprisingly rich given the novelty of the topic; yet there are still some noteworthy gaps and limitations. Only some of the studies undertake a comparison of outcomes before and during the pandemic, and those that do so tend to compare different respondents rather than following the same individuals over time. Additionally, numerous studies do not use standardised measures of mental well-being (such as the SDQ or similar) and suffer from various issues pertaining to sampling and questionnaire design errors. Notably absent from the literature is the impact of the pandemic on the mental well-being and development of babies and infants. Only one study tackles this issue, with the rest focusing on school-aged children, adolescents, and young people (Chapter 2). There is also scant literature exploring demographic characteristics, especially race and ethnicity.

Although the pandemic resulted in some positive outcomes (for example, feeling relief from social pressure and bullying, spending more time with families, taking up new hobbies, and having the time to adopt healthier behaviours), the evidence overwhelmingly points to a negative impact on all aspects of mental well-being among children and young people (Chapter 2). Parental stress and feelings of loneliness and isolation because of social distancing were associated with worse outcomes (Chapter 1). Extreme cases may be leading to an increase in the number of children who witness or fall victims to Violence against Women, domestic abuse, and sexual violence during their increased time at home. Indeed, evidence suggests that calls to the national domestic abuse helpline were much higher after lockdown than it was before (Chapter 2).

The evidence also suggests that educational disruption and school closures were responsible for many of the worries and anxieties children and young people have been experiencing (Chapter 3). This is due to two factors; the first relates to the accessibility of non-academic support from schools, such as providing nutritious meals, shelter, and counselling services, as well as fostering feelings of belonging and a sense of community. The second relates to academic changes and outcomes, including the quality of online teaching and learning, the unfamiliarity of the new teaching and assessment modalities, and the lack of clarity in communication from teachers and staff regarding their expectations from students.

Age was found to be one of the clearest determinants of mental well-being (Chapter 4). Adolescents and young adults exhibit depression, anxiety, and other adverse outcomes more so than older adults or younger peers. While some studies do not find differences in impact when it comes to gender, there is some evidence that suggests young women and girls are more severely affected by the pandemic than their male counterparts. Unsurprisingly, families from lower socio-economic backgrounds and young people not in education or employment experience the adverse impact of the pandemic much more severely.

Factors that serve to mitigate some of the negative implications of the pandemic include spending time outside, establishing routines, and being aware of the nature of the virus and its spread (Chapter 2). Risk prevention, control, and following government guidelines for social distancing also proved effective coping mechanisms. However, there is a cost to compliance as some measures (for example, social distancing) go against aspects that are important for children and young people's quality of life, including socialising with peers and seeking support (Chapter 1).

The data analysis indicates that mental well-being outcomes of children and young people were worse during the summer of 2020 compared to previous years (Chapters 6, 7 and 8). Some mental well-being outcomes improved in September 2020; yet others (such as happiness, worries, and hyperactivity) remained worse than pre-pandemic levels (Chapter 8). The percentage of children reporting severe hyperactivity or emotional and peer problems rose during the pandemic; in particular, the share of children who declared often feeling unhappy, solitary, or worried (Chapter 6).

The improvement in measures for all age groups at the end of summer (when restrictions were eased), may suggest that the negative impact of the pandemic will prove to be short lived. As the vaccination campaign progresses and restrictions are gradually eased, more research is required to shed much-needed light into the long-term impact of the pandemic on children and young people's mental well-being. Given that the strength and type of restrictions in place might play an important role in defining children and young people's mental well-being outcomes, further analysis using new data of the COVID-19 Study that will be published in the next months is recommended.

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# Appendix

To address the objectives of this report, the systematic literature review sought to provide evidence-based answers to the impact of the COVID-19 pandemic and the measures implemented by the government as a result on the well-being of children and young people aged 0 to 24 years.

The review included evidence focusing on the impact of COVID-19 on the four core MWIA protective factors for mental well-being: enhancing control, increasing resilience and community assets, facilitating participation and inclusion, and wider determinants of mental well-being, inequalities, and population characteristics. Table A1 sets out the inclusion and exclusion criteria for each study:

**Table A1. Inclusion and Exclusion Criteria**

	<b>Inclusion Criteria</b>	<b>Exclusion Criteria</b>
<b>Population characteristics</b>	Individuals aged 0-24 years.	Those over age 24 and those who have not been born.
<b>Areas of impact/outcomes</b>	Impacts on mental well-being.	Impacts on areas that are outside of mental well-being including those that only focus on mental ill-health health/physical ill-health with no mention of well-being. Studies that consider for example physical ill-health <i>and</i> mental well-being will be included.
<b>Methods</b>		Given the emerging evidence, no methods will be excluded from the review.
<b>Geographic area</b>		Given the universality of factors affecting mental well-being, no geographic area will be excluded from the review. However, studies will be excluded if findings cannot be transferred to the UK context and the COVID-19 context.
<b>Timing of publications</b>	Studies published in the last 20 years, with a focus on those published since March 2020.	Studies published prior to the year 2000. Note more recent studies will be excluded if findings cannot be transferred to the current UK context and the COVID-19 context.
<b>Language</b>	Articles published in English.	Non-English publications.
<b>Type of studies</b>	Peer-reviewed journal articles, non-peer-reviewed academic outputs, government-commissioned research, publications by research organisations, evidence by providers of interventions/support, government publications.	Newspaper articles and magazine articles.

The search strategy was designed to ensure it captures all the relevant studies that are related to answering the key research questions. Papers were collected up to the end of January 2021. Table A2 shows a list of keywords that were used to identify relevant sources of evidence. The first column lists search terms related to mental well-being and core protective factors (i.e., mental well-being outcomes), the second column lists terms related to COVID-19 pandemic and policies, and the last column includes additional terms that refer to the population of interests, including sub-groups with different socio-economic characteristics. Boolean operators were utilised to combine the search terms into different strings, which were then used for the searches. The databases and online libraries used during the review included BASE, Cochrane, Embase, ERIC and Education Database, Google Scholar, JSTOR, NICE Evidence Search, ProQuest, PsycInfo, PubMed, Science Direct, SpringerLink, TRIP. The first 10 pages of each search results from each of the databases were reviewed and saved into the long list.

**Table A2. List of search terms**

<b>Mental well-being</b>	<b>COVID-19 and policies</b>	<b>Groups of interest</b>	<b>Subgroups of interest</b>
<b>Mental well-being</b>	COVID-19	Infants	Poverty
<b>Well-being</b>	Coronavirus	Babies	Low income
<b>Development</b>	Epidemic	Adolescents	Gender
<b>Environment</b>	Isolation	Children	BAME
<b>Experience*</b>	Lockdown	Young adults	LGBT*
<b>Quality of Life</b>	Furlough	Young people	Disabled
<b>Happiness</b>	Home working/working from home	Students	Vulnerable
<b>Life satisfaction</b>	Natural disaster		Young (adult) workers
<b>Participation</b>	Pandemic		Looked after children
<b>Pro-social behaviour</b>	Quarantine		Inequality*
<b>Problem solving</b>	SARS		Communities
<b>Relationships</b>	MERS		Educational attainment
<b>Resilience</b>	School closure		Living standards
<b>Self-efficacy</b>	Social distance		Housing
<b>Stress</b>			Exams
<b>Sense of control/Locus of control</b>			Further education
<b>Sense of belonging</b>			Tertiary education
<b>School readiness</b>			

To get from the long list to the short list, the following steps were taken. The papers that are not in English, not relevant to youth or mental well-being, and focused only on mental health were excluded. The remaining papers were categorised into direct effect, intervening factors, policy papers, and subgroups of interest. The papers in the direct effect (scoring highest on relevance) were all put into the short list. As for the rest of the categories, they were assessed based on coherence, relevance, and form of evidence, with the top scoring ones included in the short list. The scoring criteria is detailed in Table A3.

**Table A3. Weight of Evidence Framework**

<b>Category</b>	<b>Description</b>	<b>Score</b>
<b>Coherence and integrity</b>	<p>Is the study coherent? Can findings be trusted?</p> <p>Has the study been peer-reviewed?</p> <p>This is a generic judgement about the coherence and integrity of the study. We define coherent and rigorous studies those providing an adequate and transparent description of the methods, analysis, and findings. Peer-review also adds to a study's integrity.</p>	1-3
<b>Form of evidence</b>	<p>Is the research design/methodology adopted appropriate to answer the research question?</p> <p>This is a judgment on whether the methodology applied is appropriate to answer the research question of the review.</p>	1-3
<b>Relevance</b>	<p>Does the study help to answer the research question?</p> <p>For example, a study may not have been undertaken in an appropriate context, or it might not have the type of sample that is central to the review question.</p>	1-3
<b>Overall judgment</b>	<p>Considering the above categories, what is the overall judgment?</p>	3-9

A separate strategy was implemented for the grey literature. The two-stage approach included i) a targeted internet search and ii) a call for evidence.

For the targeted internet search, keyword and manual search were used on websites of relevant organisations including the Bevan Foundation, Centre for Social Justice, Chatham House, Demos, the Early Intervention Foundation, the Education Endowment Foundation, the Education Foundation, Education Policy Institute, Institute for Fiscal Studies, IPPR, New Schools Network, National Foundation for Educational Research, Nuffield Foundation, Ofsted, ONS, Policy Network, Reform, the Sutton Trust, UCL Centre for Mental Health, UK Children's Commissioners, UNICEF, the Wales Centre for Public Policy, WHO Europe, WISERD, and Young Minds.

For the call for evidence, several organisations were contacted, including NHS Wales Confederation, Welsh councils (via the Welsh Local Government Association), Organisations involved in the PHW Advisory Group, and Schools Research Network. Some charities were also contacted including Children's Commissioner for Wales, Play Wales, Place2Be, Action for Children Wales, National Centre for Population Health and Well-being, and Healthy Schools Network. Finally, academic experts in Wales were also contacted. The call set out the purpose of the review, the research questions, and asked for any relevant evidence that can be shared to support the review. The team would like to thank these organisations for their contribution to the project.



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