



Effect of the COVID-19 Pandemic and Isolation Measures on the Mental Health Well-being of Sixth Form Grammar School Students in Cumbria

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Abbreviations

WEMWBS: Warwick Edinburgh Mental Wellbeing Scale- This is a scale to assess a population's mental well-being using 14 positively worded items; NHS: National Health Service- the publicly funded healthcare system in England; A-level: GCE Advanced Level- school leaving qualification offered in the UK by the educational bodies; GCSE: General Certificate of Secondary Education- an academic qualification taken in England, Wales, and Northern Ireland in a range of particular subjects

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Abstract

Background: COVID-19 affected many countries globally, including the UK, to which the UK responded by placing lockdown measures throughout the country. This meant that many people were restricted in their everyday lives, including students. This study is used to understand the impact of these measures on sixth form students.

Methods: The Warwick-Edinburgh Mental Wellbeing Scale was sent to students in a sixth-form grammar school in September 2021 to assess students' mental well-being. A semi-structured proforma was then also sent in May 2022 to compare students' experiences and mental health before and after the lockdown measures.

Results: On the well-being scale, 47.1% of sixth-form students scored below 44 (average to low mental well-being), while 31% of the 1st year sixth-form students and 27% of the 2nd year sixth-form students scored 40 and below (lower than average mental well-being).

In the semi-structured proforma, 73.90% of students (n=69) experienced quarantine since the pandemic started. 69.10% of them felt that the quarantines negatively impacted their mental health. In response to the question 'In your own words, what was the most difficult thing that you experienced during the COVID pandemic?' (n=55), 5 general themes were identified: Isolation, not socialising, loneliness, loss of teenage life/youth, and online learning.

Conclusions: The study showed that the mental well-being of sixth-form grammar school students in Cumbria was mostly negatively affected by the lockdown measures. The authors concluded that more accessible and approachable support should be provided to students in case of a similar event. More research is needed to understand the long-term impacts of such measures on students' school and social lives.

Introduction

Covid-19 has undeniably been one of the major catastrophes that have shocked everyone around the world [1]. Although it originated in Wuhan, China; no country was left untouched by COVID-19's repercussions by the year 2020 [2]. COVID-19 affected humankind at various levels namely physical health, education, quality of life, disrupted social life, and mental health. [3].

Likewise, within the UK, COVID-19 not only had an impact on the physical well-being of the population but also disrupted the normal way of living [4]. The UK responded by applying lockdown measures to slow the spread of the virus [5], which in turn had its own short and long-term implications [6]. Education in particular seems to have suffered greatly due to the pandemic and its restrictions [7]. The impact on education has been manifold but has been mainly around

the practicalities of delivering the lessons, the process of examinations, and higher education application processes [8]. Such changes have brought about uncertainty about the students' future, which could have a major impact on students in the long run [9].

Out of many student groups, the mental health of adolescents has been met with major concerns, especially those in older year groups who had been approaching exams and university application processes [10]. Adolescence undoubtedly is a critical age group to start with because of inherent stress and worry at that age [11]. Therefore, isolation and the COVID-19 pandemic could have further potential to exacerbate these feelings [10]. Unfortunately, not much can be found on the impact of COVID-19 and its restrictions on older teenagers, specifically at the crossroads of them leaving school and applying for higher education.

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Aims and Objectives

1. To study the current mental health and well-being of students (16 to 18 years) at a sixth-form grammar school.
2. To understand the experience of the COVID-19 pandemic and the lockdown restrictions on the students (16 to 18 years) at a sixth-form grammar school in the years between March 2020 until May 2022.
3. To identify various themes in the experiences shared by the students in the study.

Methodology

To investigate the effect of the COVID-19 pandemic on the mental health and well-being of students at a sixth-form grammar school (16 to 18 years old) in September 2021, the Warwick-Edinburgh Mental Wellbeing Scale was used.

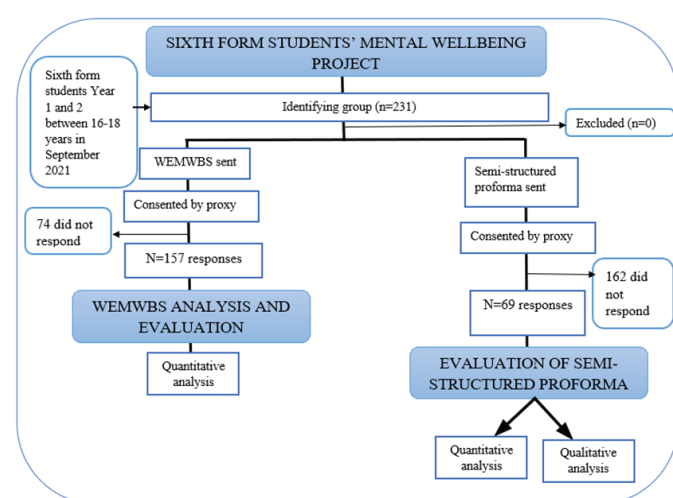


Figure 1. Investigation: Flow diagram chart

Tools

1. **Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) [12]:** (Appendix 1) The WEMWBS is a 14-item self-report questionnaire, measuring mental well-being. Participants are asked to consider how they have been feeling over the last 2 weeks, and respond to statements (e.g., "I've been feeling good about myself") on a 5-point Likert scale from "None of the time" to "All of the time."; this yields a score from 14 to 70, with higher scores indicating higher mental well-being. Higher scores indicate better psychological well-being. [12]. The measure has been validated for use in both clinical [13] and community populations. The measure showed good internal consistency ($\alpha = .91$); similar to previous research. The scale was developed and validated in the UK, including its use with young people aged 13–18 years. [14].
2. **Semi-structured proforma:** A semi-structured proforma was devised to capture the impact of COVID and its restrictions. A set of 14 questions was made by a psychiatrist working in Child and Adolescent Mental Health, NHS trust. The questionnaire was then shared with four independent Child and Adolescent Psychiatrists for face validity [15]. After the independent review by 4 psychiatrists, the questionnaire was shortlisted to 11 questions. The proforma was then shared with the school's safeguarding lead who further suggested the changes in

keeping with the school's safeguarding policy. Finally, a set of 8 questions (with questions 4,5,6,7 having their further subparts) was approved by the school's safeguarding team, and the proforma was sent to the participants.

Methods

The WEMWBS and the proforma were sent out to the students aged 16-18 years old in a sixth-form grammar school. The WEMWBS scale was intended to show the average mental well-being of students in September 2021 (when the restriction measures were easing), and the proforma to highlight any potential mental or physical changes perhaps due to COVID-19 in this age group. Participants were sent an email with WEMWBS in September 2021 and the proforma in May 2022. They were made aware of the study protocol and their choice to fill out the documents was taken as a proxy of their consent.

The participants answered questions on how they felt their mental health was before the pandemic, and how they felt it has changed compared to May 2022. Answers were recorded anonymously on Google Forms. The answers were then analysed to identify key themes and patterns to gain a deeper understanding of participants' perceptions and feelings. Results of WEMWBS were compared with the NHS data on the mental well-being of people across the UK completed in 2017 and 2021 and further analysed.

Results of WEMWBS in September 2021

70.0% of year 12 students and around 65.0% of year 13 students answered the survey. Results of the total scores of WEMWBS in year 12 and 13 during September 2021 were plotted on a frequency distribution curve.

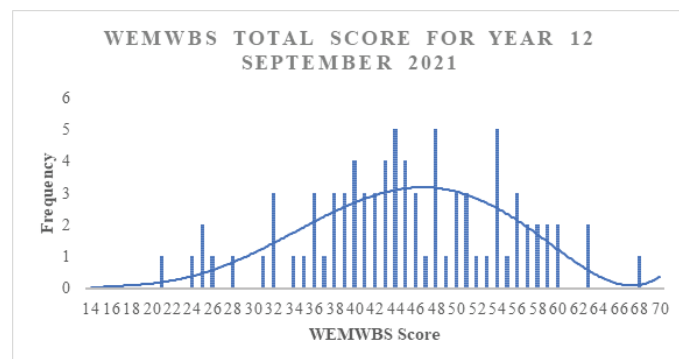


Figure 2. WEMWBS Total Scores for Year 12 (September 2021)

As shown in Figure 2, scores from 83 students in year 12 followed a dumbbell-shaped curve with a mean value of WEMWBS to be 45.0 (+9.83).

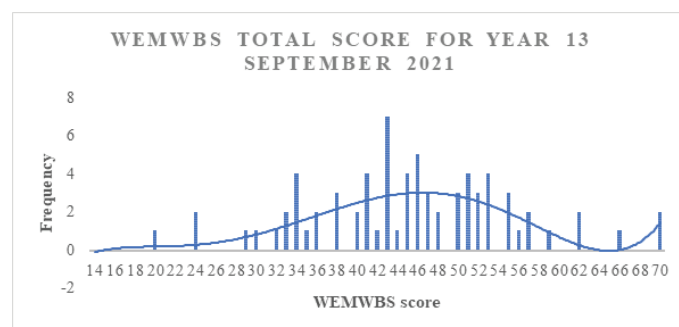


Figure 3. WEMWBS Total Scores for Year 13 (September 2021)

Table 1. Specific analysis of each question for year 12 and year 13 students combined was studied (n=157).

WEMWBS Question	Average Score	Standard Deviation
1) I've been feeling optimistic about the future	3.39	+0.9543
2) I've been feeling useful	3.1	+1.0171
3) I've been feeling relaxed	2.72	+1.0704
4) I've been feeling interested in other people	3.46	+1.0057
5) I've had energy to spare	2.62	+1.0797
6) I've been dealing with problems well	3.12	+1.1011
7) I've been thinking clearly	3.23	+1.0463
8) I've been feeling good about myself	3.15	+1.0084
9) I've been feeling close to other people	3.46	+1.0373
10) I've been feeling confident	3.24	+1.0084
11) I've been able to make up my own mind about things	3.58	+1.0373
12) I've been feeling loved	3.69	+1.008380926
13) I've been interested in new things	3.21	+1.037270708
14) I've been feeling cheerful	3.18	+1.008380926

Figure 3 displays a similar statistic for 74 students in year 13 with an average WEMWBS score of 45.3 (+10.0).

Scores lower than 44 on WEMWBS can be seen as indicators of average to low mental well-being, while scores of 40 and below are possibly seen as lower-than-average mental well-being. In our sample, 26/83 students (31%) in year 12 had a score of 40 or below, and 15/83 students (18.1%) in year 12 scored between 41-44, therefore around 49.4% of students scored 44 or below. For year 13; 20/74 students (27%) scored 40 or below and 13/74 students (17.6%) scored between 41-44, so around 44.6% of year 13 students had a score of 44 or below. The combined scores for year 12 and 13 are 47.1% scored below 44 and 52.9% above 44. The WEMWBS has a mean score in the general UK population of 51.0 [16].

Specific Analysis of Questions (Table 1)

Most of the scores are consistently around 3/5, however, two questions (Q3: "I've been feeling relaxed" and Q5: "I've had the energy to spare") scored lower than 3.

Results of a semi-structured proforma based survey in June 2022

8 questions from the semi-structured proforma were individually analysed. Out of 231 potential students (to whom the survey was sent), 69 responded (response rate = 29.87%).

Most people felt the COVID-19 pandemic negatively affected their pre-pandemic activities (66.7%). The majority of the study population (73.90%) experienced quarantine since the pandemic started. Out of these, 69.10% of the study population felt that such quarantines negatively impacted their mental health in some way. Physical health although was not equally affected (23.60%) in the study sample.

82% of the 6th-form students felt their mental health changed during the pandemic, in the form of change in confidence levels (66.70%) and altered sleep patterns (63.80%). Most of the students (41.30%) attribute the change to the pandemic/repercussions of the pandemic (quarantine/ lockdown).

There was a general feeling that the isolation measures impacted many aspects of students' lives, with many finding loneliness an area of difficulty during the pandemic. Students said the isolation measures made it easier for them to be alone.

"The isolation, being given a reason to not see people or leave the house makes it very easy to end up being alone all of the time, even with online calls available"

For a couple of students, they found that living with the same group of people throughout the lockdown periods was one of the harder aspects to deal with.

"Having to deal with the people around me at home"

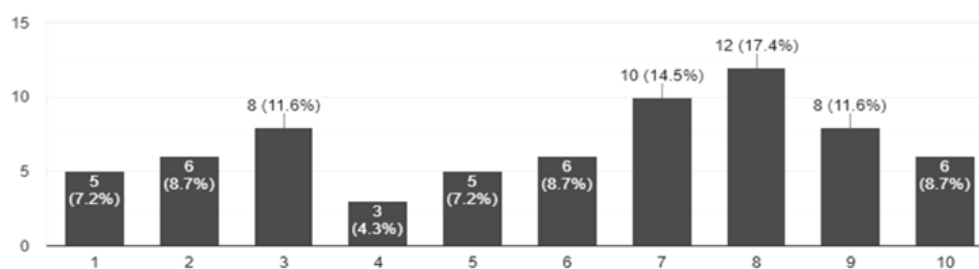
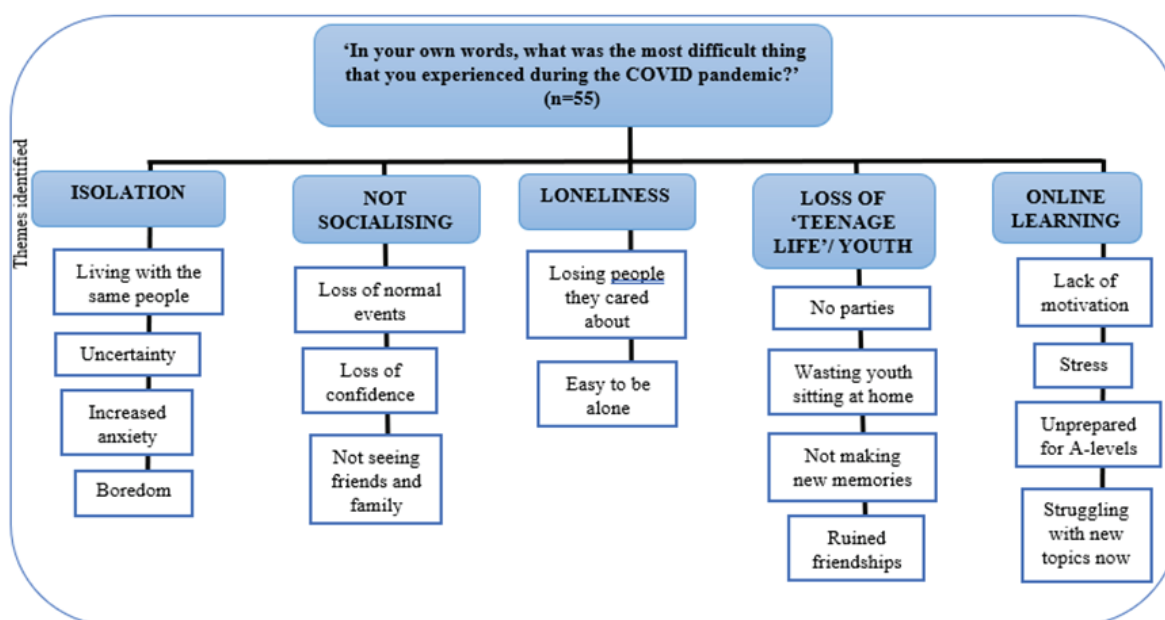


Figure 4. Perceived effect of COVID-19 on students in year 12 and 13. Scale 1-10 (with 1 being not affected and 10 being very affected)

Figure 2. Responses on 7 items of semi-structured proforma.

Question	Yes	No	Not sure
Q2) Do you think that the COVID-19 pandemic has negatively impacted any of your pre-pandemic activities? (n=69)	46 (66.70%)	17 (24.60%)	6 (8.70%)
Q3) Do you think that the COVID-19 pandemic has negatively affected your relationships in any way? (n=69)	27 (39.10%)	34 (49.30%)	8 (11.60%)
Q4) Have you ever been in quarantine since the pandemic started? (n=69)	51 (73.90%)	17 (24.60%)	1 (1.50%)
Q4a) Do you think that the quarantine periods have negatively impacted your physical health in any way? (n=55)	13 (23.60%)	38 (69.10%)	4 (7.30%)
Q4b) Do you think that the quarantine periods have negatively impacted your mental health in any way? (n=56)	31 (55.40%)	22 (39.30%)	3 (5.30%)
Q5) Do you feel that there has been a change in your confidence levels in the last two years? (n=69)	46 (66.70%)	16 (23.20%)	7 (10.10%)
Q5a) Do you think this could be due to the pandemic/ repercussions of the pandemic (Quarantine/ lockdowns)? (n=48)	29 (60.40%)	11 (22.90%)	8 (16.70%)
Q6) Do you think your mental health has changed over the past 2 years (during the COVID-19 pandemic)? (n=69)	57 (82.60%)	7 (10.20%)	5 (7.20%)
Q7) Do you think your sleep pattern has changed over the past 2 years (during the COVID-19 pandemic)? (n=69)	44 (63.80%)	22 (31.90%)	3 (4.30%)
Q7b) Do you think this could be due to the pandemic/ repercussions of the pandemic (Quarantine/ lockdowns)? (n=46)	19 (41.30%)	17 (37%)	10 (21.70%)

**Figure 5.** Semi-structured proforma results for Q8 in May 2022: 'In your own words, what was the most difficult thing that you experienced during the COVID pandemic?'

Students also mentioned that the isolation measures prevented them from meeting with their friends and knowing that they spent some part of their youth confined in their homes made them feel that they missed out on an important part of their life.

“For me, I was 16 and turning 17 in the pandemic, and I felt I was never living life enough. I never really had the experiences that other teenagers had, making memories, going to parties, meeting new people, etc. so I always felt I was wasting my youth sitting at home”

As this age group was part of the cohorts whose national exams were affected, many mentioned that this had a negative effect on their current studies and exams. This was exacerbated by online school, which some students found challenging.

“Loneliness and not doing GCSE exams which has made me feel unprepared for A-Level exams as I’ve never actually taken proper exams.”

“The time away from school has left me with topics I still struggle with today and have increased my stress and anxiety around exams as I cannot get my head around these topics.”

For a couple of students, the isolation measures negatively impacted some of their relationships, which has affected their social life coming out of the pandemic.

“Most difficult thing was not so much the pandemic itself but more the return to ‘normal’ - a number of perfectly good friendships from before are now over, which may well have been influenced by the difficulties around socialising caused by the pandemic (although I did not believe during lockdown that this would end up being the case).”

Discussion

Our study aimed to measure and compare the mental well-being of 16-18-year-old students in a sample of the UK population before and after the UK COVID-19 lockdown measures. Around 47.0% of students at a sixth-form grammar school in years 1 and 2 in September 2021 have possibly indicated low mental functioning, while 30.6% of students have an average to high mental well-being. Similar results were shown in Wang et al. [17] where 48.14% of the sample indicated poor mental health well-being secondary to COVID-19 [17]. On average, the lowest-scored question on the WEMWBS was ‘I’ve had the energy to spare’, suggesting a general mood of slight exhaustion, while the feeling of being loved was generally scored the highest. Feelings of exhaustion were measured in a sample from Turkey in a study by Morgul et al. [18] where 64.1% of the participants experienced physical and mental fatigue at the time of the survey, possibly due to pandemic-related fear and anxiety [18]. However, the effects of COVID-19 and the isolation measures were not universally negative and for some, could have improved mental health perhaps due to socioeconomic conditions or education levels [19]. This can be seen in the semi-structured proforma, where 37.7% of the students who felt their mental health had changed also felt that their mental health had improved after the pandemic. Furthermore, a few students found that they did not find anything difficult during the COVID pandemic and felt that the lockdown was ‘great’. This can also be seen in the UK NHS mental health surveys done in 2017 and 2021 where around 15.2% of 17–23-year-olds experienced an improvement in their mental health, and 2.3% of them said that the lockdowns had made their lives ‘much better’ [19]. This may have given a different view of the COVID-19 pandemic compared to others.

However, what we can also learn from these results is that the

COVID-19 lockdown measures could have contributed to the deterioration of some students’ mental well-being. In a study by Son et al. [20] 71% of the sample indicated increased stress and anxiety due to the COVID-19 outbreak [20]. Comparing this with our data from the qualitative survey, 69.10% of students who had been in quarantine felt that it had negatively impacted their mental health. Students generally felt this was because it not only prevented them from seeing their friends and family but also made them feel lonelier, which was difficult for most of the students during this period. Similar findings were shown in a study by Millar et al. [21] where 50% of 16–24-year-olds experienced ‘lockdown loneliness’ [22]. Furthermore, not being able to meet friends emphasised to some that they had missed out on ‘teenage life’. This can be described as going to parties, having ‘adventures’, and generally hanging out with friends, which gave them the feeling that they had missed out on an important period of their lives. A report from Thakur [10] mentions that adolescence is an important period for social development, and school closures because of the COVID-19 pandemic could worsen existing mental health issues or increase the risk of developing mental health issues [10]. In addition, learning remotely was another factor that some students found difficult during the COVID-19 pandemic. In a study by Wang et al. [17] a major contributor to an increase in stress related to academics, and its increased difficulty in transitioning and maintaining online classes [17]. Not only did some people mention that online learning was hard, but others also said that not being in school physically meant that they were now struggling to understand certain topics after the isolation. Furthermore, not doing actual national exams (e.g., cancellation of GCSE’s, etc.) has made some feel unprepared for the current national exams (A-Levels) which, for a few, has led to increased anxiety post-pandemic. The study by Millar et al. [21] also states similar evidence reviewed that suggests that some of the anxiety that young people experience relates to missing school, returning to school, and the future [22].

UK NHS mental health surveys in 2017 and 2021, where over half (52.5%) of young people aged 17-23 years old experienced a deterioration in their mental health, with 23.9% of them feeling that the isolation measures made their lives ‘much worse’ [19]. Although there is no data on this group of people in 2017 of their mental health, it can be inferred that there could have been a decline in mental wellbeing among adolescents between 2017 and 2021 [19]. Furthermore, in 2017, using the Warwick Edinburgh Mental Wellbeing Scale, the average mental well-being of 11–19-year-olds across the UK was 51.7 (which indicates somewhat high mental well-being) [23]. Using this to compare with the data collected above, the average mental well-being of 16-18-year-olds was 45.2.

Limitations

However, overall mental well-being has already been shown to be declining in the UK since 1999, so whether the pandemic has exacerbated the rate of mental health deterioration or not is a limitation of this study [23]. In addition, as there is no baseline data for this group of people, we cannot tell whether those who scored a high mental well-being on this study was due to an increase in mental well-being during the COVID-19 lockdowns, or whether they generally had a good mental health even before the pandemic. Therefore, a definitive comparison cannot be made of the students at the grammar school before and after lockdown measures/ restrictions. The sample size of this group is also generally small, and conclusions are based on the UK

NHS mental well-being surveys completed in 2017 and 2021 to be used as a guideline for the average change in mental health of this age group as a result. Furthermore, the qualitative survey was completed in June 2022, therefore some questions about their mental health before the pandemic might not be accurate.

Conclusion

The COVID-19 pandemic and social isolation measures mostly negatively affected the mental well-being of adolescents in a sixth-form grammar school due to many factors such as fear, poor family functioning, and influences from social media. To reduce the risks of future deterioration of mental well-being in adolescents, schools could invest in mental health support nurses permanently so students would have somebody to talk to. Furthermore, in case of another pandemic, creating suitable online platforms for students to be able to study properly, provide information and videos on how to maintain a daily, regular lifestyle, provide access to professional support/help or mental health advocates (peers from school), and provide accurate information on the pandemic for everyone to understand [24]. This would allow the mental well-being of adolescents to become less affected even if another pandemic and social isolation measures were to happen.

As pandemics could happen again in the future, the government would need to understand similar studies to be conscious of the effects of enforced isolation on the mental health of young people, as there can be permanent negative outcomes. Perhaps to understand these effects in greater detail, we would need results of adolescents' grades before and after a pandemic, suicide rates at the end of each year, the number of university applications each year, and school dropout rates each year. These would be used to compare before and after a pandemic to perhaps show that mental health deterioration during a pandemic could lead to permanent consequences.

As social media was one of the most influential factors in the mental well-being of adolescents during the COVID-19 pandemic, measures should be taken to mitigate the negative effects of social media. This would be to address sensationalising headlines by highlighting the need for clear, direct messages to provide a good understanding of the situation to the affected population so that fake news and fear-mongering are reduced [25]. Furthermore, a study on the effects of social media on young people post-pandemic would be useful to understand and mitigate potential online risks adolescents might face while isolating in future pandemics.

Acknowledgments

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Ethical information

As this project was part of a school project in the sixth form, the semi-structured proforma did not require detailed ethical clearance. However, the questions still had to be passed through and checked by the school's safeguarding lead, who only approved the proforma after the necessary changes were made.

Supplementary material

Supplementary materials provided with the manuscript are Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) and Semi-structured proforma (for qualitative analysis). A brief description of these is already given in the 'Tools' section of the paper.

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