Ordinary magic in extraordinary circumstances: Predictors of positive mental health outcomes for early adolescents during the COVID-19 pandemic

Emma Ashworth (e.l.ashworth@ljmu.ac.uk)
Liverpool John Moores University
David W. Putwain
Liverpool John Moores University
Shane McLoughlin
Liverpool John Moores University
Pooja Saini
Liverpool John Moores University
Jennifer Chopra
Liverpool John Moores University
Benjamin Rosser
Liverpool John Moores University
Catrin Eames
Liverpool John Moores University

Research Article

Keywords: COVID-19, adolescent mental health, resilience, protective factors

Posted Date: May 7th, 2021

DOI: https://doi.org/10.21203/rs.3.rs-504757/v1

Abstract

The COVID-19 pandemic and associated restrictions have had a negative impact on the mental health and wellbeing of many people worldwide, but there is evidence to suggest this has been a particularly challenging for adolescents. However, there is a paucity of research examining the factors that have promoted good mental health during this time. The aim of the current study was to identify the protective factors among early adolescents in the UK that promoted better mental health outcomes (internalising and externalising difficulties, and wellbeing) during the first national COVID-19 lockdown. Between September and December 2020, 290 11–14 year olds across the North West of England were recruited to complete an online survey, consisting of several measures pertaining to their experiences of lockdown, and their mental health and wellbeing. Hierarchical multiple regression was used to analyse the data. Results indicated that higher participant-rated lockdown experience (the extent to which it was fun, easy, and good) and higher levels of optimism were protective factors for all three outcomes of interest. Greater adherence to Government guidance was also a protective factor for internalising difficulties and general wellbeing. Stronger family connection was a protective factor for externalising difficulties only, while stronger peer connection was a protective factor for general wellbeing only. In summary, the 'ordinary magic' of supportive relationships and positive experiences appear to be some of the key factors needed to ensure adolescents maintain good mental health and wellbeing, and to help them overcome the difficulties posed by the COVID-19 pandemic.

Introduction

Worldwide restrictions to prevent infection during the COVID-19 pandemic have included isolation, social distancing, and school closures (1). Whilst these measures are implemented to reduce the spread of infection and prevent loss of life (2), such measures can have a negative impact on mental health. Risk factors associated with poorer mental health, including uncertainty, anxiety, social isolation and loneliness, are heightened during pandemics due to both the disease itself and the associated restrictions (3), and are considered to present particular challenges to adolescents (4). Evidence suggests that, relative to adults, adolescents are at an increased likelihood of experiencing mental health problems such as depression, anxiety, and heightened stress, including post-traumatic stress, as a result of COVID-19 (5–7). However, there is currently a paucity of research exploring the promotive and protective factors among early adolescents that reduce the likelihood of mental health difficulties during this time. Further knowledge in this area will be useful in enhancing the support that is available for young people, to help ensure they continue to thrive, despite the challenging circumstances.

Disruption during the COVID-19 pandemic

Early adolescence (ages 11–14 years) is a key period of development, when young people typically grow in independence and begin to prioritise relationships with peers over family members (8). Peer relationships are associated with positive wellbeing and adjustment during adolescence (9), serving as important sources of social support and influence, and helping to shape young people's behaviour, identity, and attitudes (10). In the UK, repeated school closures (March-July 2020 and January-March 2021 to date), alongside community-wide Governmental advice such as staying at home, reducing social contact, and closure of leisure and retail businesses, have likely resulted in reduced face-to-face contact with peers and changes to routines that are difficult to adjust to (11). As such, adolescents' normative developmental experiences are likely to have been disrupted during this time. Whilst the long-term psychological effects of lockdown are unknown, evidence from previous pandemics indicates that loneliness during quarantines is associated with long-term depression and anxiety in adolescents (12).

UNESCO (13) have highlighted the interruption to learning as a key adverse consequence of the pandemic, with lockdown exacerbating existing disparities and health inequalities within the education system. Furthermore, many young people rely on other school-based provision such as access to teaching facilities, free school meals and pastoral/wellbeing or safeguarding teams; all of which were substantially reduced during lockdowns (8, 14). School closures have meant that many young people with poor mental health or those experiencing other adversities (e.g., poor living conditions, family relations, or poverty) may have missed out on this vital support; resulting in potentially detrimental consequences to the most vulnerable young people in our society. For those adolescents who identify with mental health needs, school routines are seen as important coping mechanisms (11).

Early adolescence is a critical period for the onset of mental health difficulties, with 50% of lifetime conditions having their first onset by the age of 14 years old (15). One in seven 11–16 year olds were thought to have at least one mental health condition before the COVID-19 pandemic (16). Specifically, internalising disorders (i.e., emotional or inward-facing difficulties such as anxiety and depression) were the most common type of disorder (9%), with girls at an increased likelihood of experiencing difficulties in this domain (10.9% vs. 7.1%). Conversely, externalising difficulties (i.e., behavioural or outward-facing difficulties such as conduct or hyperactivity disorders) were more common in boys (10.6% vs. 5.7%; NHS Digital, 2018). When combining these existing rates with the heightened adversity and disruption young people may have faced during the COVID-19 pandemic, adolescents could be at an even greater risk of developing potentially long-term mental health difficulties.

Overcoming adversity

In acknowledging the heightened risk factors and negative impacts of the COVID-19 pandemic and associated restrictions, it is important to highlight the resilience process that some adolescents use to cope and thrive despite adversity (17, 18). The concept of resilience focuses on strengths as well as deficits and can be understood in terms of both risks and protective/promotive factors (19). This definition stipulates that in order to demonstrate resilience, children must be flourishing despite exposure to adversity (20), and is considered a dynamic process that all children are capable of demonstrating if the right mechanisms are in place (19, 21). The literature has historically centred on identifying individual characteristics predictive of resilience in children; coping skills, problem solving, self-efficacy, self-regulation, expressiveness, reflectiveness, sense of competence, optimism, autonomy, cognitive skills, temperament and communication skills have all been identified (21–24).

However, recent research in the resilience field has indicated a shift in focus from the individual child to the child's interactions with their environment, and there is increased emphasis on the factors that facilitate the development of wellbeing under stress (25, 26). Wellbeing is defined not simply as the absence of

poor mental health, but also the presence of good mental health, whereby individuals with strong general wellbeing are feeling good and functioning well; in other words, they are flourishing (27). Resilience work is therefore moving away from the study of vulnerable children, to a focus on the socio-ecological factors that operate at multiple levels to promote good wellbeing; thus, family and community factors are also integral (28). Furthermore, in keeping with Bronfenbrenner's ecological systems theory (29), it is thought that these levels interact with and impact one another (30). Thus, Goldstein and Brooks (31) advocate that resilience research should centre on the interaction between the child and their social environment. Ungar (32) further developed this by suggesting that resilience could be understood as the child's ability to access the resources they need from the community, to establish and maintain their wellbeing in the face of risk or adversity. These resources, known as protective factors, and are thought to come from 'everyday' elements of their environment, such as having trusted friendships and supportive family; in other words, protective factors are considered to be 'ordinary magic' (21).

Whilst optimism is closely aligned with resilience, it is considered distinct - defined as a stable personality trait, with generalised positive outcome expectancies (33, 34), thought to be most relevant in situations with little scope for personal control (35, 36). Optimism has been found to be positively related to psychological wellbeing, and negatively with depression and anxiety (35), with higher levels of optimism related to better subjective wellbeing in times of adversity (37). Optimism has been positively associated with coping styles in light of stressful events, demonstrating flexibility of adopting problem-focused coping with controllable stressors and emotion-focused coping with uncontrollable stressors as the situation demands (38).

While many promotive and protective factors (individual, social, and environmental attributes that are associated with positive youth development; 39) have previously been established in the extant evidence base, there is limited research explicitly examining the protective factors during the COVID-19 pandemic and its associated restrictions, such as school closures. Given the change in social and familial circumstances for young people as a result of COVID-19 related restrictions, the resources typically drawn from in terms of resilience may also be limited. Dispositional optimism may therefore act as a protective factor when community factors are disrupted. There is also sparse research exploring the specific COVID-19 related factors that may boost adolescents' wellbeing during the pandemic, such as family shielding or keyworker status, and individuals' understanding of and level of worry regarding COVID-19.

Resilience during the COVID-19 pandemic

Just as we need to understand which young people are at increased risk of mental health difficulties during this pandemic, it is also vital we understand the factors that help to ensure adolescents continue to thrive. Unification of evidence relating to both risk and protective factors provides a more holistic picture of what is happening in young people's lives (40). Furthermore, an understanding of the effective protective factors for positive mental health and wellbeing can advance our understanding of how young people respond to crises, and can help inform the services and resources offered (17).

Emerging evidence suggests that optimism is important for promoting resilience during the COVID-19 pandemic (41), with 12–18 year olds in China who report higher levels of optimism for the COVID-19 pandemic reporting lower levels of anxiety and depression symptoms (42). Furthermore, older adolescents aged 16–19 years in a qualitative study in the UK reported adopting a positive outlook (e.g., remaining hopeful and optimistic for the future) as an intentional coping strategy for promoting good wellbeing during the COVID-19 pandemic (43), with similar themes regarding intentional coping strategies reported amongst 16–24 year olds in Portugal (4). Repeated lockdown phases (that is, strict Government-led restrictions of limited social contact, social movement not allowed between social households and school, leisure and non-essential business closures) indicate shifts in attitudes towards lockdown experiences, with 2,438 13–25 year olds surveyed in January 2021 in the UK reporting having implemented and established coping mechanisms and routines they had learnt from two earlier periods of strict lockdown restrictions to support their mental health, and 79% believing their mental health will improve once restrictions are lifted (44). However, most of these protective factors are individual-level attributes, and so the social and environmental (and specifically the pandemic-related) factors that are associated with better adolescent mental health outcomes are currently unknown.

The current study

While evidence continues to emerge for the effects of the COVID-19 pandemic and associated restrictions on the mental health and wellbeing of young people, most research has focused specifically on the negative outcomes. Indeed, evidence so far suggests that the pandemic has put young people at increased risk of experiencing poor mental health (e.g., Loades et al., 2020). Thus, more research is needed regarding the protective factors that counteract this risk and contribute to good mental health outcomes in young people, and in particular, the protective factors related specifically to the pandemic. Furthermore, most COVID-19 related research has investigated the impact on adults or older adolescents (16–19 years e.g., Demkowicz et al., 2020; Pascual-sanchez et al., 2020); less evidence exists regarding the effects on younger adolescents. This is particularly important given that they are at a critical stage in their development and a point of heightened vulnerability to mental health difficulties (15).

Thus, this study aims to examine not only the psychological protective factors, but also the social and environmental factors, that promoted better mental health outcomes during the first lockdown in early adolescents in the UK. Specifically, we aim to identify the factors associated with home, school, peers, and the community, as well as the factors associated with the pandemic specifically (e.g., adherence to guidelines, living with key workers) that were associated with better mental health outcomes, namely internalising difficulties (inward facing difficulties e.g., emotional problems), externalising difficulties (outward facing difficulties e.g., conduct problems), and general wellbeing, during this time.

Materials And Methods

Participants and recruitment

Five secondary schools participated in the study, three were coeducational and two were single sex (one boys' and one girls'). The single sex schools were also academically selective, and the girls' school was fee paying. Two hundred and ninety pupils in years 7–9 (the first three years of secondary education) participated, aged between 11 and 14 years (M = 11.95; SD = .85). Of the participants, 52.8% identified as male and 45.2% as female, with the remaining 2% identifying as 'other' or indicating that they preferred not to say. Sixteen per cent reported that they were in receipt of free school meals (FSM; a proxy for

belonging to a low-income household). Other demographic data is presented in Table 1. The sample is broadly in line with the national average for pupils of this age in terms of proportion eligible for FSM (17.3%) and belonging to a Black or Minority Ethnic (BAME) group (32.3%) (46).

An a priori sample size calculation, performed using the G*Power software v. 3.1.9.2 (47, 48) showed a minimum sample of size of 208 participants would be required to detect a moderate effect size ($f^2 = .15$) at standard alpha ($p < .05$) and power (.95) values for 17 predictor variables. There were 12.8% of values missing in the data. In order to establish any systematic variation in patterns of missingness, an omnibus test for missing completely at random (MCAR) was conducted using Little's test (Little, 1988). Little's test was not statistically significant, $\chi^2(1266) = 1333.54$, $p = .09$, indicating MCAR can be assumed. Accordingly, missing data were handled using an Expectation Maximisation (EM) algorithm in the SPSS v.25 software. EM is preferred to listwise and pairwise deletion which can result in biased parameter estimates (49).

Table 1
Demographic data

Demographic	%
Gender	
Male	52.8
Female	45.2
Other/prefer not to say	2.0
Ethnicity	
White	76.9
Asian/Asian British	8.8
Mixed Ethnicity	7.5
Chinese/Chinese British	2.0
Black/Black British	1.0
Another Ethnic Group	2.0
Sexuality	
Heterosexual	79.9
LGBTQIA+	9.5
Prefer not to say	10.2
Religion	
Christianity	32.7
Islam	8.2
Hinduism	1.4
Receiving Free School Meals	16

Measures

The survey consisted of three parts: Part 1 asked participants a series of questions relating to their demographic characteristics, Part 2 asked about experiences of lockdown, and Part 3 presented a series of measures pertaining to participants' mental health and wellbeing.

Demographics

Part 1 presented a series of questions regarding participants' age, gender identity, ethnic group, religion, sexuality, and FSM status. All questions were optional and offered a 'prefer not to say' response.

Lockdown factors

Part 2 contained a series of questions designed for this study, asking about participants' experiences of COVID-19 and what their lockdown looked like. Questions asked about their home and who they were living with (e.g., *'who is looking after you?'; 1 parent/2 parents/carers/grandparents/other family member/other*), including if any household members were shielding or were key workers (*yes/no/don't know/prefer not to say*). There were also questions asking participants' to rate theirs and their family members' perceived knowledge level regarding COVID-19 (*1 = poor; 7 = good)*, and the extent to which they were following the guidance (*1 = not at all; 7 = completely*). Six items pertained to 'fear of COVID-19', asking participants to rate the extent to which they were worried about themselves or their family member becoming unwell with COVID-19 (e.g., '*if my friends and family were to develop COVID-19 they would suffer badly from it'; 1 = strongly disagree, 5 = strongly agree)*. Participants were also asked about their experiences of lockdown. Participants were presented with three items relating to lockdown, and were asked to rate their experiences of each on five-point Likert scales (*very bad-very good; very hard-very easy; very*

boring-very fun). Scores for these items were summed, to form an overarching 'lockdown experience' variable, with higher scores indicating a better lockdown experience.

Mental Health Difficulties

Me and My Feelings (M&MF; Deighton et al., 2013) was used to measure mental health difficulties. M&MF is a brief, 16-item school-based self-report measure of child mental health, covering two broad domains: internalising difficulties (e.g., emotional problems) and externalising difficulties (e.g., behavioural problems). Statements are provided (e.g., *I feel lonely; I lose my temper*), and young people are asked to rate the extent to which they feel each statement represents them on a three-point Likert scale (*never/sometimes/always*). The first 10 items comprise the internalising difficulties subscale, while the remaining six form the externalising difficulties subscale. Scores are summed for each subscale, with higher scores indicating higher levels of difficulties. Internal consistency in the context of the present data was αs = 0.77–0.80. Psychometric properties are well reported, including previously established construct, convergent, and discriminant validity, and the measure has been validated for use with children aged eight years and over (50, 51).

Wellbeing

The Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS; 2008) was utilised as a measure of mental wellbeing. SWEMWBS is a seven-item self-report measure, consisting of a series of positively-worded statements about thoughts and feelings (e.g., *I've been feeling relaxed*). Participants are asked to rate each statement on a five-point Likert scale (*1 = none of the time, 2 = rarely, 3 = some of the time, 4 = often, and 5 = all of the time*) that best describes their experiences over the last two weeks. Scores are summed, with higher scores indicative of higher positive mental wellbeing. The SWEMWBS is recommended for use with secondary school pupils ((27, 53)) and has established convergent and construct validity (54). Internal consistency for the current study was α = 0.88.

Resilience

Sources of support

Four subscales from the Student Resilience Survey (SRS; Lereya et al., 2016) were used to measure participants' perceptions of their protective factors at the individual-level, as well as those embedded in the environment. Specifically, the family connection (four items), peer support (11 items), community connection (four items), and school connection (four items) subscales were used. Respondents are presented with a series of statements (e.g., *at school there is an adult who really cares about me*), and they are asked to rate the extent to which each statement fits them best on a five-point Likert scale (*1 = never; 5 = always*). Scores are summed for each subscale, with higher scores indicating greater levels of protective factors in each domain. Psychometric properties include criterion validity, and validated for use in children aged 11 years and over (55). Internal consistency in the current study was α = 0.80–0.93.

Optimism

The revised Life Orientation Test (LOT-R; Herzberg et al., 2006) was used as a measure of optimism. The LOT-R is a 10-item self-report measure designed to assess individual differences in generalised optimism versus pessimism. Participants are presented with a series of statements (e.g., *in uncertain times, I usually expect the best*; *if something can go wrong for me, it will*), and are asked to rate the extent to which they agree on a five-point Likert scale (*strongly disagree/disagree/neutral/agree/strongly agree*). Scores are summed, with higher values indicating higher levels of optimism. The LOT-R has successfully been utilised with secondary school aged children and has reported discriminant validity (57, 58). In the current study, internal consistency was α = 0.60–0.78.

Design and procedure

The current cross-sectional study utilised quantitative survey data collected as part of the Adolescents' Lockdown-Induced Coping Experiences (ALICE) study. The ALICE study was conducted in the North West of England with five secondary schools, between September and December 2020, following the first UK lockdown. Secondary schools were recruited to participate via social media, and through existing networks and connections. Schools sent information sheets to the parents/carers of all pupils in years 7–9, along with a link to an online survey, consisting of a suite of measures exploring young people's mental health and wellbeing during the COVID-19 pandemic, and their experiences of lockdown. If the parents/carers consented to their child taking part, they were asked to provide them with the survey link. Informed assent was sought from the young people, who were asked to tick a box at the beginning of the survey if they consented to taking part. The ALICE study received ethical approval from the institutional Research Ethics Committee (Ref: 20/NSP/037).

Analytic strategy

Hierarchical multiple regression analyses were conducted to establish how much variance in the three outcome variables of interest (internalising difficulties, externalising difficulties, and wellbeing) could be accounted for by the predictor variables (lockdown factors and resilience factors), after controlling for demographic characteristics (gender, age, and FSM status). For each of the three models, demographic variables were added in step 1 in order to control for their effects, lockdown factors added in step 2 to establish the unique variance explained by predictors relating specifically to the COVID-19 pandemic, and finally resilience factors added in step 3.

Results

Descriptive statistics

Descriptive statistics are presented in Table 2. Participants generally rated themselves as having high levels of support from home, school, the community, and their peers, with support from home rated highest. Levels of wellbeing were in line with population norms for SWEMWBS (27). Mean scores for optimism, internalising difficulties, and externalising difficulties fell around the mid-way point for all three variables (3.3/5, 1.7/3, 1.5/3 respectively).

Table 2
Descriptive Statistics

	Mean	SD	Observed Ranges	Skewness	Kurtosis
PART 2					
Experience of Lockdown	2.93	0.94	1–5	0.08	-0.33
Fear of COVID-19	3.75	1.36	1–7	0.24	-0.59
Number of Parents at Home	1.85	0.36	1–2	-1.98	1.95
Number of Siblings at Home	1.30	1.13	0–8	2.28	9.84
Personal Knowledge of COVID-19	5.53	1.27	1–7	-0.48	-0.44
Family Knowledge of COVID-19	6.17	1.00	1–7	-1.08	0.68
Following Government Guidance	5.77	1.16	2–7	-0.77	0.01
PART 3					
Resilience: Family Connection	4.55	0.59	1.25-5	-2.07	5. 43
Resilience: School Connection	3.79	0.91	1–5	-0.55	-0.10
Resilience: Community Connection	4.15	1.05	1–5	-1.02	0.52
Resilience: Peer Support	4.11	0.83	1.36-5	-1.02	0.52
Optimism	3.30	0.57	1.6–4.9	-0.21	0.36
OUTCOMES					
Internalising Difficulties	1.69	0.42	1-2.8	0.42	2.33
Externalising Difficulties	1.49	0.40	1-2.83	0.92	0.82
Wellbeing	3.49	0.72	1.14-5	-0.38	0.29

Bivariate Correlations

Bivariate correlations are presented in Table 3. Levels of optimism had the strongest relationship with all three outcome variables. Regarding lockdown-related factors, the majority were associated with levels of internalising difficulties, externalising difficulties, and wellbeing. Number of parents at home and having a family member shielding at home, as well as the number of siblings at home was associated with internalising difficulties only, and fear of COVID-19 with wellbeing only. Home connection was the resilience factor most strongly associated with lower levels of internalising and externalising difficulties, whilst peer support was the resilience factor most strongly associated with higher levels of wellbeing.

Hierarchical regression analyses

Internalising difficulties

For Model 1 (internalising difficulties) a significant model was identified in step 3 (Table 4), $F(17,272) = 23.72$, $p < .001$. The R^2 indicates the predictors in the model accounted for approximately 59% of the variance in internalising difficulties, indicative of a large effect size (59). After controlling for demographic factors, two lockdown factors emerged as significant predictors, lockdown experience and the extent to which participants followed Government guidance, with more positively rated lockdown experiences ($\beta = -.27$, $p < .001$) and higher levels of adherence to guidance (β=-.12, $p = .006$) were associated with lower levels of internalising difficulties. Lockdown experience was a stronger predictor of internalising difficulties than guidance adherence. Only one resilience factor, optimism, emerged as a significant predictor in step 3, with higher levels of optimism associated with lower levels of internalising difficulties ($\beta = -.47$, $p < .001$). Several additional predictors were also identified at step 2 of the model, but these coefficients were no longer significant at step 3 of the model, after resilience factors were included (see Table 5 for details).

Externalising difficulties

For Model 2 (externalising difficulties), a significant model was identified in step 3, $F(17, 272) = 7.83$, $p < .001$. The R^2 indicates the predictors in the model accounted for approximately 33% of the variance in externalising difficulties, indicative of a large effect size. After controlling for demographic factors, one lockdown factor significantly predicted externalising difficulties, lockdown experience, with a more positively rated lockdown experience associated with lower levels of externalising difficulties ($\beta = -.22$, $p < .001$). Furthermore, two resilience factors, family connection and optimism, were also significant predictors, with higher levels of family connection ($\beta = -.20$, $p = .012$) and optimism ($\beta = -.20$, $p = .003$) associated with lower levels of externalising difficulties. Several additional predictors were also identified at step 2 of the model, but these coefficients were no longer significant at step 3 of the model, after resilience factors were included (see Table 5 for details).

Wellbeing

For Model 3 (wellbeing), a significant model emerged in step 3, $F(17, 272) = 32.75$, $p < .001$. The R^2 indicates the predictors in the model accounted for 67% of the variance in wellbeing, indicative of a large effect size. After controlling for demographic factors, three lockdown factors emerged as significant predictors,

lockdown experience, fear of COVID-19, and the extent to which they followed the guidance, with more positively rated lockdown experiences ($\beta = .17$, $p < .001$), higher levels of concern about COVID-19 ($\beta = .12$, $p = .006$), and higher levels of adherence to the rules ($\beta = .13$, $p = .002$) associated with higher levels of wellbeing. Two resilience factors, peer connection and optimism, emerged as significant predictors in step 3, with higher peer connection ($\beta = .21$, $p < .001$) and optimism ($\beta = .50$, $p < .001$) associated with higher levels of wellbeing. Optimism was a stronger predictor of wellbeing than peer support. Several additional predictors were also identified at step 2 of the model, but these coefficients were no longer significant at step 3 of the model, after resilience factors were included (see Table 5 for details).

Table 3
Bivariate correlations

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Experience	—	− .11	.06	.06	.01	− .12	− .03	.07	.17**	.23**	.08	.11	.13*	.28**	− .46**	− .34
2. Fear		—	.07	.13*	− .14*	.22**	− .03	− .04	− .10	− .13*	.01	− .06	− .13*	− .22**	.23**	.16*
3. *N* Parents			—	.14*	.01	− .03	− .04	.01	− .04	.02	.06	.01	.02	.11	− .09	− .11
4. *N* Siblings				—	− .12*	.08	− .15*	− .29**	− .09	− .25**	− .13*	− .13*	− .19**	− .04	.08	.13*
5. keyworker					—	− .04	.06	.11	.11	.07	.11	− .04	.08	.11	− .12*	− .15
6. Shielding						—	.07	.18**	.02	.73	.03	− .002	.01	− .06	.07	.10
7. Personal Knowledge							—	.63**	.29**	.29**	.24**	.11	.19**	.21**	− .14*	− .18
8. Family Knowledge								—	.26**	.37**	.22**	.15*	.25**	.24**	− .19**	− .17
9. Guidance									—	.38**	.24**	.19**	.22**	.21**	− .32**	− .26
10. Home Support										—	.43**	.60**	.54**	.52**	− .49**	− .43
11. School Support											—	.46**	.51**	.31**	− .35**	− .28
12. Community Support												—	.49**	.38**	− .39**	− .28
13. Peer Support													—	.49**	− .44**	− .28
14. Optimism														—	− .68**	− .43
15. Internalising															—	.49*
16. Externalising																—
17. Wellbeing																

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4.

Hierarchical multiple regression models (step 3)

	Internalising Problems		Externalising Problems		Wellbeing	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1: Demographics	.035*		.026*		.047**	
Gender		.047		.037		− .034
Age		.204		.035		− .006
FSM		.020		.017		− .051
Step 2: Lockdown Predictors	.298***		.207***		.268***	
Experience of Lockdown		− .265***		− .222***		.170***
Fear of COVID-19		.060		.026		.103**
Number of Parents at Home		− .027		− .086		− .015
Number of Siblings at Home		.027		.073		− .021
Personal Knowledge of COVID-19		.034		− .094		− .030
Family Knowledge of COVID-19		.016		.076		.079
Following Government Guidance		− .121**		− .061		.121**
Family member shielding		.001		.045		− .024

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
Family member keyworker								− .026				− .077			.097	
Step 3: Resilience Predictors						.263***				.095***			.356***			
Home Connection								− .024				− .196*			.015	
School Connection								− .079				− .098			.039	
Community Connection								− .083				− .024			.054	
Peer Support								− .051				.055			.213***	
Optimism								− .474***				− .200**			.499***	
Total R^2						.590				.328			.671			

Note. Standardised regression coefficients reported from Step 3 of the model.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5
Hierarchical multiple regression models (step 2)

	Internalising Problems		Externalising Problems		Wellbeing	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1: Demographics	.035*		.026*		.047**	
Gender		.067		.050		− .050
Age		.120*		.116*		− .125*
FSM		.018		.028		− .067
Step 2: Lockdown Predictors	.298***		.207***		.268***	
Experience of Lockdown		− .407***		− .312***		.328***
Fear of COVID-19		.128*		.052		.017
Number of Parents at Home		− .095		− .124*		.056
Number of Siblings at Home		.054		.111		− .059
Personal Knowledge of COVID-19		− .047		− .147*		.055
Family Knowledge of COVID-19		− .058		.018		.168*
Following Government Guidance		− .178**		− .123*		.186**
Family member shielding		.002		.042		.125*
Family member keyworker		− .049		− .085		.125*
Total R^2	.333		.467		.315	

Note. Standardised regression coefficients reported from Step 2 of the model.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The present study aimed to identify the individual, social, environmental, and COVID-19 specific protective factors associated with better mental health outcomes (namely internalising and externalising difficulties, and wellbeing) for 11–14 year olds following the first UK lockdown. Results indicated that higher participant-rated lockdown experience (perceptions of the extent to which it was fun, easy, and good) and higher levels of optimism were protective factors for all three outcomes of interest. Greater adherence to Government guidance was also a protective factor for internalising difficulties and general wellbeing. Stronger family connection was a protective factor for externalising difficulties only, while stronger peer connection was a protective factor for general wellbeing only.

It is particularly noteworthy that despite the significant impact COVID-19 has had on the daily lives of adolescents, mean scores for lockdown experience ratings (i.e., the extent to which they thought it was good, fun, and easy) were approximately three out of five, indicating that, generally, adolescents in this study did not find it to be a completely negative experience; a potentially reassuring sign. Indeed, research conducted during the COVID-19 pandemic suggests that on average there has been wide spread resilience in response to the pandemic (60). However, it is important to bear in mind that this score is the average, and some young people in this study reported a very challenging lockdown. Given that lockdown experience was a protective factor across all three aspects of mental health and wellbeing, this is particularly concerning. Thus, it is vital that, moving forward, young people who experienced a difficult lockdown are

identified, and receive appropriate intervention and support (32). Furthermore, should any further lockdowns be required, it will be of upmost importance that these adolescents are appropriately supported, and their lockdown experience improved as far as possible.

Schools are typically considered to be a valuable location for the early identification of children experiencing mental health difficulties and the implementation of mental health interventions (e.g., promoting mental health literacy, social and emotional wellbeing, coping skills; Caan et al., 2015; Vostanis et al., 2013). It is now recognised that all schools have a responsibility for supporting the mental health of their pupils, particularly following the recent Government Green Paper recommending that all English schools appoint a designated mental health lead (63). However, prioritising mental health conflicts with more recent Governmental concerns regarding pupils' academic progress, which places schools under considerable pressure to ensure their pupils 'catch up' following the school closures (e.g., (64)). Thus, schools may find themselves in a position where they are in a conundrum regarding whether to reach targets for academic progress, or prioritise ensuring the mental wellbeing of their pupils. Nevertheless, given the importance of peer support to adolescents' general wellbeing identified in the present study (and in previous research e.g., (9)) it appears that, particularly for those who have had a difficult lockdown, allowing time in school for adolescents to socialise with their friends and build relationships may be invaluable in counteracting the negative experiences of lockdown. In case any further lockdowns occur, it will also be vital that, as far as possible, schools help to ensure their pupils' experiences of learning in lockdown are positive; for instance, through the provision of pastoral support and frequent contact with teachers. Qualitative research highlights the importance of teachers, with adolescents emphasising the value of having access to teachers for their learning and wellbeing during school closures (65).

More broadly, Government policy must prioritise the provision of effective support and resources for young people who are experiencing, or who have previously experienced, difficult lockdowns. This may be in the form of strategies that can directly improve a young person's lockdown (e.g., providing support to families experiencing poverty, or technology for adolescents to access schoolwork), or the availability of resources and support services (e.g., adolescent mental health services) that can help to mitigate the longer-term impact of any negative experiences. Findings from the Mental Health Foundation's (60) research echo this need, calling on the Government to speed up the roll out of evidence-informed psychotherapeutic digital mental health interventions, implement trauma-informed therapies, and provide safe places for social connection and interaction in the community.

Regarding optimism, greater levels of optimism predicted greater wellbeing, and less internal and externalising difficulties. These findings highlight optimism as a personality trait which is associated with resilience and wellbeing, often in the face of a lack of personal control, where dispositional optimism is considered a stress buffer on mental health in adolescents (66). The COVID-19 pandemic, and in particular the first lockdown phase considered in the current study, presented a time of uncertainty, and results suggest that those adolescents who have a more optimistic stance are more likely to experience fewer psychological difficulties and greater wellbeing, thus potentially mitigating the psychological impact of COVID-19 (67). This is consistent with findings that suggest optimism mediates the relationship between stress related to COVID-19 and psychological difficulties (68, 69). Whilst in this study dispositional optimism is explored, learned optimism can also be applied as a useful intervention in enhancing wellbeing and a movement towards flourishing for the individual (70).

Another noteworthy finding from the present study is the importance of relationships; specifically, the association between strong family connection and lower levels of externalising difficulties, and strong peer connection and improved wellbeing. This finding is consistent with qualitative research with older adolescents that suggests family disputes and tension could be a source of difficulty during lockdowns, whereas keeping in touch with peers was considered beneficial (43). The impact of family relationships on adolescents' mental health is perhaps unsurprising given that the vast majority of participants were likely solely with their family for prolonged periods during lockdown, and the existing evidence highlighting the important role of family relationships. For instance, even in the absence of risk, well-structured home environments and warm relationships within the family are important for positive development (55), but having a supportive family has been found to be particularly valuable for children trying to cope with stressful experiences (71, 72), as is the case at present for many young people.

Conversely, the relationship between stronger family connection and lower levels of externalising difficulties specifically is interesting. Previous research has found similar results with family functioning, suggesting children's externalising difficulties are more strongly associated with poorer family functioning than internalising difficulties (73). However, a longitudinal study by Mastrotheodoros et al. (74) indicated that adolescents (aged 15) with higher levels of externalising difficulties tended to be those who later experienced worse family functioning, but not vice versa, suggesting that higher externalising difficulties in children cause poorer family functioning. Thus, it may be that the relationship between externalising difficulties and family connection found in the present study was a result of pre-existing difficulties (or the absence thereof). Unfortunately, the cross-sectional nature of the current study does not allow for an identification of the direction of these relationships. However, previous studies have focused on family functioning; less research has looked at family *connection*, and so the direction of the relationship remains unclear.

Nevertheless, the findings from the current study, combined with existing evidence, still highlight the importance of fostering good relationships with family members, in order to effectively promote adolescents' mental health during the pandemic. Various strategies exist, such as family support programs, which aim to improve parent wellbeing and parenting, and in turn improve adolescent mental and behavioural health (75), or the provision of family support workers (FSWs) for those identified as at-risk. FSWs can help to strengthen parents' and children's social supports and coping skills through the provision of a range of behavioural and parent-training interventions, in order to prevent the escalation of more severe difficulties (76). Alternatively, parenting classes may provide a less resource-intensive and more readily available option that can be implemented in the community, while still strengthening family connections (77).

Outside of the family, peer connection was associated with higher levels of general wellbeing. Early adolescence is a crucial period of social development; young people spend more time building relationships outside of the family, and peers become increasingly important in terms of identity formation, fostering independence, and the development of social skills (78). Thus, given the circumstances of lockdown, whereby young people could not socialise with their peers face-to-face, maintaining strong peer connection may have been more important than ever for promoting adolescents' wellbeing. Furthermore, early adolescence is a time where peers are increasingly relied upon for social support (10). Previous research in the field of help-seeking suggests that young

people have a preference for informal sources of support, such as peers, if they are experiencing mental health difficulties (79, 80), which may also explain why stronger peer connections protected against poorer wellbeing during the coronavirus lockdowns.

Other research has highlighted similar concerns regarding adolescents' peer groups, with young people reporting they found maintaining relationships during lockdown difficult (43, 65), and 41% of 8–24 year olds saying they are lonelier than pre-pandemic (81). As mentioned previously, allowing young people to spend time with peers and develop their relationships on their return to school will be of upmost importance. Indeed, a panel of child mental health experts have already written to the Government, urging them to prioritise children's social and emotional wellbeing when re-opening schools, and emphasising the importance of play (82). Strategies such as peer support initiatives may also be beneficial in schools. These can include approaches such as peer tutoring or mentoring, peer counselling, befriending, or buddy systems. Previous research suggests peer support initiatives cannot only promote wellbeing and positive mental health, but also facilitate appropriate and quality access to help and signposting for further support (83). Given adolescent's tendency to seek help from peers first, these initiatives may be particularly valuable for this age group.

Finally, it is worth noting that only one COVID-19 specific predictor, adherence to Government guidance, was identified as a significant protective factor for both internalising difficulties and wellbeing. While the reason for this is unclear, there is a potential that the families who adhered to the guidance were those who were more accepting and/or understanding of the COVID-19 pandemic, resulting in children feeling less anxiety or stress during this time. Interestingly, no other COVID-19 specific factors, such as having a parent who was shielding or a keyworker, were significantly associated with children's mental health outcomes. Thus, although largely null results were identified regarding these predictors, the absence of significant negative mental health outcomes for these groups of children could be considered a good sign, and still contributes to the evidence base regarding the COVID-19 related factors that are (or are not) a cause for concern.

Limitations

There are several limitations of the present study that should be noted. In terms of the sample size, there were a relatively small number of participants (n = 290) limited to one regional area in England (the North West). Secondly, participants were also self-selecting, as the survey was sent home via their school, and they were free to choose whether to participate. Thus, there is potential that the findings were not representative of the experiences of this age group nationally. However, participant demographics were broadly reflective of national averages (46) in terms of the proportion of young people eligible for FSM and those belonging to a BAME background. Third, the proportion of missing data was relatively high (12.8%). To account for this, an EM algorithm was used, in order to reduce bias (49), and so this was not considered to be problematic. Furthermore, it was not possible to include all possible candidate protective factors in the present study, and so some significant contributors to adolescent mental health outcomes may have been missed. Finally, the cross-sectional nature of this study limits the extent to which causation can be inferred. Thus, the direction of the relationships between the predictor and outcome variables cannot be confirmed.

It is also worth highlighting potential issues with the use of the term 'protective factors' in the present study. There is some contention in the resilience literature regarding the use of the terms protective and promotive factors; some suggest the use of the term 'protective factors' is only appropriate when examining the interaction term or moderating effect of factors on the relationship between risk factors and poorer mental health outcomes. Conversely, 'promotive' should be used for factors that are directly associated with positive outcomes, regardless of risk status (84). As risk factors or interaction terms were not directly explored in the present study, there may be some question over whether protective factors were truly identified. However, Luthar et al. (19) have suggested that the importance of interaction effects should not detract from the significance of main-effect associations, and the term 'protective' should be used in a broader sense, referring to all constructs linked with positive adaptation in at-risk groups. Arguably the COVID-19 pandemic has been a risk factor for all adolescents in terms of their mental health and wellbeing and, although they have not all had equal experiences, emerging evidence suggests that as a group they are at increased risk of developing mental health difficulties as a result of the pandemic (e.g., (45)). Nevertheless, in time, future research should seek to explore longitudinally the distinct promotive and protective factors that contributed to the onset of adolescent mental health difficulties for at-risk groups, as a direct consequence of the pandemic.

Conclusion

The present study aimed to address a key gap in the present literature by examining protective factors across multiple domains for positive mental health outcomes among early adolescents, during the COVID-19 pandemic. Findings highlight the value of ensuring that young people have a positive experience during any future lockdowns, and the importance of identifying and intervening with any who have had negative experiences. Importantly, the role of optimism is highlighted as a protective factor in the face of adverse experiences that are beyond our control. Furthermore, results also emphasise the need to boost young people's connections with others on the return to formal schooling, and during the easing of lockdown restrictions in the future. In summary, the 'ordinary magic' of supportive relationships and positive experiences appear to be some of the key factors needed to ensure adolescents maintain good mental health and wellbeing, and to help them overcome the difficulties posed by the COVID-19 pandemic. Thus, results mirror what Masten (21) first posited twenty years ago: "resilience does not come from rare or special qualities, but from the everyday magic of the ordinary, normative human resources in… children, in their families and relationships, and in their communities".

Declarations

Acknowledgements

The authors thank the schools, young people, and their parents for participating in this study. We would also like to thank the wider LJMU Suicide and Self-Harm research group for their help, advice, and support with data collection.

References

1. Gov.UK. Coronavirus (COVID 19) [Internet]. 2021 [cited 2021 Feb 16]. Available from: https://www.gov.uk/coronavirus
2. British Medical Association. The impact of COVID-19 on mental health in England; Supporting services to go beyond parity of esteem. Bma [Internet]. 2020; Available from: https://www.bma.org.uk/media/2774/emb07072020-bma-mental-health-paper.pdf
3. Shanahan L, Steinhoff A, Bechtiger L, Murray AL, Nivette A, Hepp U, et al. Emotional Distress in Young Adults during the COVID-19 Pandemic: Evidence of Risk and Resilience from a Longitudinal Cohort Study. Psychol Med. 2020;
4. Branquinho C, Kelly C, Arevalo LC, Santos A, Gaspar de Matos M. "Hey, we also have something to say": A qualitative study of Portuguese adolescents' and young people's experiences under COVID-19. J Community Psychol. 2020;48(8):2740–52.
5. Liang L, Ren H, Cao R, Hu Y, Qin Z, Li C, et al. The Effect of COVID-19 on Youth Mental Health. Psychiatr Q. 2020;91(3):841–52.
6. Raccanello D, Vicentini G, Rocca E, Barnaba V, Hall R, Burro R. Development and early implementation of a public communication campaign to help adults to support children and adolescents to cope with Coronavirus-related emotions: A community case study. Front Psychol. 2020;11(September).
7. Pascual-sanchez A, Nicholls D, Patalay P, Crosby L, Mccloud T, Hudson L, et al. You-COPE: Mental health consequences experienced by young people aged 16–24 during first months of the COVID-19 lockdown. 2020;(July):1–11.
8. The Lancet Child & Adolescent Health. Pandemic school closures: risks and opportunities. Lancet [Internet]. 2020;4(5):341. Available from: http://dx.doi.org/10.1016/S2352-4642(20)30105-X
9. Žukauskiene R. Adolescence and Well-Being. In: Ben-Arieh A, Casas F, Frønes I, Korbin JE, editors. Handbook of Child Well-Being: Theories, Methods and Policies in Global Perspective [Internet]. Dordrecht: Springer Netherlands; 2014. p. 1713–38. Available from: https://doi.org/10.1007/978-90-481-9063-8_67
10. Telzer EH, Hoorn J Van, Rogers CR, Do KT. Social influence on positive youth development: A developmental neuroscience perspective. Adv Child Dev Behav. 2018;54:215–58.
11. Lee J. Mental health effects of school closures during COVID-19. Lancet Child Adolesc Heal [Internet]. 2020;4(6):421. Available from: http://dx.doi.org/10.1016/S2352-4642(20)30109-7
12. Sprang G, Silman M. Posttraumatic stress disorder in parents and youth after health-related disasters. Disaster Med Public Health Prep. 2013;7(1):105–10.
13. UNESCO. Adverse consequences of school closures [Internet]. 2020 [cited 2021 Feb 16]. Available from: https://en.unesco.org/covid19/educationresponse/consequences
14. Clemens V, Deschamps P, Fegert JM, Anagnostopoulos D, Bailey S, Doyle M, et al. Potential effects of "social" distancing measures and school lockdown on child and adolescent mental health. Eur Child Adolesc Psychiatry [Internet]. 2020;29(6):739–42. Available from: https://doi.org/10.1007/s00787-020-01549-w
15. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. Arch Gen Psychiatry. 2005;62(6):593–602.
16. Sadler K, Vizard T, Ford T, Goodman A, Goodman R, McManus S. Mental health of children and young people in England, 2017: Summary of key findings [Internet]. 2018. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2017/2017
17. Dvorsky MR, Breaux R, Becker SP. Finding ordinary magic in extraordinary times: child and adolescent resilience during the COVID-19 pandemic. Eur Child Adolesc Psychiatry [Internet]. 2020;8–10. Available from: https://doi.org/10.1007/s00787-020-01583-8
18. Wright M, Masten A, Narayan A. Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In: Goldstein S, Brooks R, editors. Handbook of Resilience in Children [Internet]. New York: Springer Science & Business Media; 2013. p. 15–37. Available from: http://books.google.com/books?id=YrBlgRE8li4C&pgis=1
19. Luthar SS, Cicchetti D. The construct of resilience: Implications for interventions and social policies. Dev Psychopathol. 2000;12(4):857–85.
20. Masten A, Powell J. A Resilience Framework for Research, Policy, and Practice. In: Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities. 2003. p. 1–25.
21. Masten A. Ordinary magic: Resilience processes in development. Am Psychol. 2001;56(3):227–38.
22. Alvord MK, Grados JJ. Enhancing resilience in children: A proactive approach. Prof Psychol Res Pract. 2005;36(3):238–45.
23. Bonanno GA, Mancini AD. The human capacity to thrive in the face of potential trauma. Pediatrics. 2008;121(2):369–75.
24. Daniel B, Wassell S. Assessing and promoting resilience in vulnerable children. Jessica Kingsley; 2002.
25. Ungar M. The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. Am J Orthopsychiatry. 2011;81(1):1–17.
26. Ungar M. The social ecoogy of resilience: A handbook of theory of practice. Springer; 2012.
27. Ng Fat L, Scholes S, Boniface S, Mindell J, Stewart-Brown S. Evaluating and establishing national norms for mental wellbeing using the short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS): findings from the Health Survey for England. Qual Life Res. 2017;26(5):1129–44.
28. Landau J. Communities that care for families: The LINC model for enhancing individual, family, and community resilience. Am J Orthopsychiatry. 2010;80(4):516–24.
29. Bronfenbrenner U. Toward an Experimental Ecology of Human Development. Am Psychol. 1977;32(7):513–31.
30. Masten A. Resilience in developing systems: Progress and promise as the fourth wave rises. Dev Psychopathol. 2007;19(3):921–30.

31. Goldstein S, Brooks R. Why study resilience? In: Handbook of Resilience in Children. Springer; 2013. p. 3–14.
32. Ungar M. Community resilience for youth and families: Facilitative physical and social capital in contexts of adversity. Child Youth Serv Rev [Internet]. 2011;33(9):1742–8. Available from: http://dx.doi.org/10.1016/j.childyouth.2011.04.027
33. Scheier M, Carver C. Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. Heal Psychol. 1985;4:219–47.
34. Snyder CR, Harris C, Anderson JR, Holleran SA, et al. The will and the ways: Development and validation of an individual-differences measure of hope. J Pers Soc Psychol. 1991;60(4):570–85.
35. Alarcon GM, Bowling NA, Khazon S. Great expectations: A meta-analytic examination of optimism and hope. Pers Individ Dif [Internet]. 2013;54(7):821–7. Available from: http://dx.doi.org/10.1016/j.paid.2012.12.004
36. Gallagher MW, Lopez SJ. Positive expectancies and mental health: Identifying the unique contributions of hope and optimism. J Posit Psychol. 2009;4(6):548–56.
37. Carver CS, Scheier MF, Segerstrom SC. Optimism. Clin Psychol Rev. 2010;30(7):879–89.
38. Solberg Nes L, Segerstrom SC. Dispositional optimism and coping: A meta-analytic review. Personal Soc Psychol Rev. 2006;10(3):235–51.
39. Fergus S, Zimmerman MA. Adolescent resilience: A framework for understanding healthy development in the face of risk. Annu Rev Public Health. 2005;26:399–419.
40. Wood AM, Tarrier N. Positive Clinical Psychology: A new vision and strategy for integrated research and practice. Clin Psychol Rev [Internet]. 2010;30(7):819–29. Available from: http://dx.doi.org/10.1016/j.cpr.2010.06.003
41. Xie X, Xue Q, Zhou Y, Zhu K, Liu Q, Zhang J, et al. Mental health status among children in home confinement during the coronavirus disease 2019 outbreak in Hubei Province, China. JAMA Pediatr. 2020;174:898–900.
42. Zhou SJ, Zhang LG, Wang LL, Guo ZC, Wang JQ, Chen JC, et al. Prevalence and socio-demographic correlates of psychological health problems in Chinese adolescents during the outbreak of COVID-19. Eur Child Adolesc Psychiatry [Internet]. 2020;29(6):749–58. Available from: https://doi.org/10.1007/s00787-020-01541-4
43. Demkowicz O, Ashworth E, O'Neill A, Hanley T, Pert K. Teenagers' experiences of life in lockdown: Main briefing. University of Manchester; 2020. 216–225 p.
44. YoungMinds. Coronavirus: Impact on young people with mental health needs Survey 2: Summer 2020. YoungMinds [Internet]. 2020;(February):1–18. Available from: https://youngminds.org.uk/about-us/reports/coronavirus-impact-on-young-people-with-mental-health-needs/
45. Loades ME, Chatburn E, Higson-Sweeney N, Reynolds S, Shafran R, Brigden A, et al. Rapid Systematic Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of COVID-19. J Am Acad Child Adolesc Psychiatry [Internet]. 2020;59(11):1218–1239.e3. Available from: https://doi.org/10.1016/j.jaac.2020.05.009
46. Department for Education. Schools, pupils and their characteristics: Academic year 2019/20. 2021.
47. Faul F, Erdfelder E, Lang AG, Buchner A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods. 2007;39:175–91.
48. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. Behav Res Methods. 2009;41:1149–60.
49. Graham J. Missing data: Analysis and design. Springer; 2012.
50. Deighton J, Tymms P, Vostanis P, Belsky J, Fonagy P, Brown A, et al. The development of a school-based measure of child mental health. J Psychoeduc Assess. 2013;31(3):247–57.
51. Patalay P, Deighton J, Fonagy P, Vostanis P, Wolpert M. Clinical validity of the Me and My School questionnaire: A self-report mental health measure for children and adolescents. Child Adolesc Psychiatry Ment Health. 2014;8(1):1–7.
52. University of Warwick, University of Edinburgh. Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS). NHS Health Scotland; 2008.
53. Evidence Based Practice Unit. Learning from HeadStart: Wellbeing measurement framework for secondary schools. 2018.
54. Ringdal R, Bradley Eilertsen ME, Bjørnsen HN, Espnes GA, Moksnes UK. Validation of two versions of the Warwick-Edinburgh Mental Well-Being Scale among Norwegian adolescents. Scand J Public Health. 2018;46(7):718–25.
55. Lereya ST, Humphrey N, Patalay P, Wolpert M, Böhnke JR, Macdougall A, et al. The student resilience survey: Psychometric validation and associations with mental health. Child Adolesc Psychiatry Ment Health. 2016;10(1).
56. Herzberg PY, Glaesmer H, Hoyer J. Separating optimism and pessimism: A robust psychometric analysis of the revised Life Orientation Test (LOT-R). Psychol Assess. 2006;18(4):433–8.
57. Creed PA, Patton W, Bartrum D. Multidimensional properties of the LOT-R: Effects of optimism and pessimism on career and well-being related variables in adolescents. J Career Assess. 2002;10(1):42–61.
58. Wong SS, Lim T. Hope versus optimism in Singaporean adolescents: Contributions to depression and life satisfaction. Pers Individ Dif [Internet]. 2009;46(5–6):648–52. Available from: http://dx.doi.org/10.1016/j.paid.2009.01.009
59. Cohen J. A power primer. Psychol Bull [Internet]. 1992;112(1):155–9. Available from: http://doi.apa.org/getdoi.cfm?doi=10.1037/0033-2909.112.1.155
60. Mental Health Foundation. Resilience across the UK during the coronavirus pandemic [Internet]. 2020. Available from: https://www.mentalhealth.org.uk/coronavirus/resilience-across-uk-coronavirus-pandemic
61. Caan W, Cassidy J, Coverdale G, Ha MA, Nicholson W, Rao M. The value of using schools as community assets for health. Public Health. 2015;129(1):3–16.

62. Vostanis P, Humphrey N, Fitzgerald N, Deighton J, Wolpert M. How do schools promote emotional well-being among their pupils? Findings from a national scoping survey of mental health provision in English schools. Child Adolesc Ment Health. 2013;18(3):151–7.
63. Department of Health, Department for Education. Transforming children and young people's mental health provision: A green paper. Crown; 2017.
64. Department for Education. Restricting attendance during the national lockdown: schools: Guidance for all schools in England. 2021.
65. Ashworth E, Hunt A, Chopra J, Eames C, Putwain DW, Duffy K, et al. Adolescents' lockdown-induced coping experiences (ALICE) study: A qualitative exploration of early adolescents' experiences of lockdown and reintegration. Advance. Preprint.
66. Lai J. Dispositional optimism buffers the impact of daily hassles on mental health in Chinese adolescents. Pers Individ Dif [Internet]. 2009;47(4):247–9. Available from: http://dx.doi.org/10.1016/j.paid.2009.03.007
67. Muñoz-Fernández N, Rodríguez-Meirinhos A. Adolescents' Concerns, Routines, Peer Activities, Frustration, and Optimism in the Time of COVID-19 Confinement in Spain. J Clin Med. 2021;10(4):798.
68. Arslan G, Yıldırım M. Coronavirus stress, meaningful living, optimism, and depressive symptoms: a study of moderated mediation model. Aust J Psychol [Internet]. 2021;00(00):1–12. Available from: https://doi.org/10.1080/00049530.2021.1882273
69. Arslan G, Yıldırım M, Tanhan A, Buluş M, Allen KA. Coronavirus stress, optimism-pessimism, psychological inflexibility, and psychological health: Psychometric properties of the coronavirus stress measure. Int J Ment Health Addict. 2020;2(Who).
70. Seligman MEP. Learned optimism: How to change your mind and your life. Vintage; 2006.
71. Bai S, Repetti RL. Short-term resilience processes in the family. Fam Relat. 2015;64(1):108–19.
72. Masten A, Shaffer A. How families matter in child development: Reflections from research on risk and resilience. In: Clarke-Stewart A, Dunn J, editors Families count: effects on child and adolescent development. Cambridge University Press; 2006. p. 5–25.
73. Sikora D, Moran E, Orlich F, Hall TA, Kovacs EA, Delahaye J, et al. The relationship between family functioning and behavior problems in children with autism spectrum disorders. Res Autism Spectr Disord [Internet]. 2013;7(2):307–15. Available from: http://dx.doi.org/10.1016/j.rasd.2012.09.006
74. Mastrotheodoros S, Canário C, Cristina Gugliandolo M, Merkas M, Keijsers L. Family Functioning and Adolescent Internalizing and Externalizing Problems: Disentangling between-, and Within-Family Associations. J Youth Adolesc [Internet]. 2020;49(4):804–17. Available from: http://dx.doi.org/10.1007/s10964-019-01094-z
75. Laird R, Kuhn E. Family support programs and adolescent mental health: review of evidence. Adolesc Health Med Ther. 2014;127.
76. Window S, Richards M, Vostanis P. Parents' and children's perceptions of a family support intervention for child behavioural problems. J Soc Work Pract. 2004;18(1):113–31.
77. Brotman LM, Calzada E, Huang KY, Kingston S, Dawson-McClure S, Kamboukos D, et al. Promoting Effective Parenting Practices and Preventing Child Behavior Problems in School Among Ethnically Diverse Families From Underserved, Urban Communities. Child Dev. 2011;82(1):258–76.
78. Shanahan L, McHale SM, Osgood W, Crouter AC. Conflict frequency with mothers and fathers from middle childhood to late adolescence: Within- and between-families comparisons. Dev Psychol. 2007;43(3):539–50.
79. Rickwood D, Deane FP, Wilson CJ, Ciarrochi J. Young people's help-seeking for mental health problems. Aust e-Journal Adv Ment Heal. 2005;4(3):218–51.
80. Radez J, Reardon T, Creswell C, Lawrence PJ, Evdoka-Burton G, Waite P. Why do children and adolescents (not) seek and access professional help for their mental health problems? A systematic review of quantitative and qualitative studies. Eur Child Adolesc Psychiatry [Internet]. 2020; Available from: https://doi.org/10.1007/s00787-019-01469-4
81. Youth Sport Trust. The impact of COVID-19 on children and young people [Internet]. 2020. Available from: https://www.childrenssociety.org.uk/sites/default/files/the-impact-of-covid-19-on-children-and-young-people-briefing.pdf
82. Cartwright-Hatton S, Dodd H, Lester K. Play first: Supporting children's social and emotional wellbeing during and after lockdown [Internet]. 2020. Available from: http://www.infocoponline.es/pdf/Childrens-right-to-play.pdf
83. AFNCCF. Peer support for children and young people' s mental health and emotional wellbeing: Programme facilitator toolkit. 2019.
84. Luthar S, Zelazo L. Research on resilience: An integrative review. In: Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities. 2003. p. 510–48.