Living through lockdown - an exploration of the COVID-19 pandemic and its impact on child and adolescent mental health.

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Introduction

The Covid-19 pandemic (CP) had an enormous impact on many aspects of society: with multiple lockdowns, business closures, unemployment, worsened health inequalities and disruptions to education.(1) These have led to direct and indirect impacts on mental health over the last three years. Initial evidence showed that child and adolescent mental health (CAMH) was disproportionately negatively impacted.(2) The UK saw an 81% increase in referrals to child and adolescent mental health services(CAMHS) in 2021, versus 2019, compared to 11% for adult services.(2) Some effects were positive, but many detrimental to our population's mental health. The long-term effects, severity, and duration of the impacts on CAMH, whether positive or negative, were varied and largely determined by a variety of factors, such as past psychiatric history, family life, socio-economic status, friendships, school experiences, ethnicity, and sexuality.(1)

CAMH has had substantial UK news coverage in the last few months, highlighting the increasing gap between supply and demand for CAMHS. CAMHS referrals have increased by 39% in one year,(3) only accounting for those perceived as severe enough for referral, with many more needing support. From 2017 to 2021 a rise from one in nine 6-16 year olds experiencing a mental health condition(MHC) to one in six from 2017 to 2021 occurred.(4) Now in 2023 rates are likely to be higher, with this an underestimate.

There is a substantial volume of literature examining the effects of the CP on CAMH. However, as little time has passed since the CP peak, it is impossible for the literature to represent the long-term impacts on CAMH, which we will see unfold in the coming years. Additionally, as the whole globe was affected, determining causation over correlation and whether these changes would have occurred in the absence of the CP is challenging. There are limitations of the literature, many of the

studies were short in duration, used samples poorly representative of the general population of children and young people(CYP) and outcome measures were subjective as mostly self-reported. Most data collection was undertaken in 2020, during the initial lockdown. However, many countries had subsequent lockdowns and restrictions, so consequences from these would not have been captured. Despite the suboptimal quality of the evidence, it can be seen anecdotally and in the media that CAMH is worsening at a rate healthcare providers cannot keep up with. Therefore, identifying the precipitating and perpetuating factors is required to best address this issue, treat MHCs and prevent relapses.
Finally, by examining the aspects of the CP and its restrictions that have contributed to poor CAMH, decision-makers can be more informed for any future similar circumstances.

Have there been any benefits?

The effects of the CP were not all negative, with some benefits to CAMH. Lockdown offered an opportunity for personal growth, with more time for creativity, hobbies, relaxation activities and developing stress management strategies, which have been recognised as protective factors against MHCs.(5)
Those CYP who experienced bullying and challenges at school benefitted, as many countries had a prolonged period of school closure offering them relief.(5) Bullying has been well-recognised as a predisposing factor for future development of MHCs(6). There was evidence to support this, finding an association between school closures and decreased psychological symptoms for some.(7) This was especially the case for those who experienced pre-pandemic behavioural and mental health difficulties. Relief of academic and exam pressures from school closures also contributed to improved CAMH.(8) Sleep quality and routines are involved in precipitating, perpetuating and exacerbating mental health symptoms, therefore, with school closures and slowing down of society, many people, including CYP benefited from increased and improved sleep quality. This was associated with lower psychological symptoms.(7)

Although these changes appear to have been beneficial, there is no evidence evaluating whether when returning to ‘normal’, these benefits were maintained and

there was no rebound decline in CAMH. Aside from CYP with social anxiety, where evidence found lockdown measures offered this group a break from anxiety-provoking situations, but as restrictions eased their symptoms worsened,(9) a well-recognised phenomenon: avoidance initially relieves anxiety but in the long-term worsens it.(10)

One of the main widespread benefits was increased family time, enabling greater family cohesion and intimacy.(5) Evidence recognises the impact family relationships have on the development of MHCs in CYP, specifically during the CP. Those with stronger positive relationships with parents and siblings were less psychologically impacted.(8) Therefore, this time with reduced external stressors and distractions provided opportunity for family relationships to evolve and protect against poor mental health consequences,(11) specifically by mitigating loneliness associated with lockdown.(12) However, it is impossible to determine whether symptom improvement was attributable to the pandemic and lockdown measures, or whether this was the natural course of their symptoms.

Family challenges, conflicts, child maltreatment and neglect

With the onset of lockdown, during stressful and uncertain times families were forced together, increasing family conflict.(13) Child and parent conflict is linked to poor CAMH,(14) specifically depression.(12) When combined with other risk factors and the loss of protective factors, such as reduced interaction with other supportive adult figures, poor CAMH was perpetuated. Literature implies familial conflict was a prominent factor contributing to increased CAMHS referrals.(7)

During lockdown there was UK news coverage expressing concerns about CYP's safety, with a rise of 30% in suspected child abuse referrals after just the first lockdown.(15) Not only were those CYP already experiencing maltreatment at increased risk, but there was evidence of more being maltreated, neglected and witness to domestic violence. As seen previously economic recessions have been linked to increased domestic violence, more controlling perpetrators, marital conflict and all forms of child abuse.(5)

During the CP families were under even more pressure than previous recessions, with the additional pressures associated with facilitating home-schooling, working from home, managing uncertainty and potentially grief, adding to the growing problem. There is widespread appreciation that child abuse, maltreatment, exposure to marital conflict and domestic violence can significantly impair lifelong mental health through behavioural maladaptation and disruption of early brain development,(5) leading to MHCs such as eating disorders(EDs) and post-traumatic stress disorder(PTSD).(16) This has all been compounded by lockdown measures hindering CYP's coping mechanisms, distractions, external support and access to child protection services.(17) This rendered victims stuck, unable to escape their dangerous circumstances.

Adults were not immune and faced many challenges as a result of the CP, and so similarly to CYP experienced increased psychological distress, anxiety, depression, PTSD and suicidal ideation.(18) Having parents with poor mental health is a risk factor for poor CAMH(12), with parental stress or distress contributing towards childhood behavioural problems and poorer emotional regulation.(9) Multiple studies have highlighted specifically the link between increased parental stress during the pandemic and CYP's mental illness,(19) an Italian study identified an association between mother's stress and children's depressive symptoms during lockdown.(20,21)

Recognising the link between distress in parents and their children will allow interventions to be more specific to the individual CYP and their family, aiming for better outcomes.

School closure/online school

School is central to the lives of the majority of CYP, offering a place for academic, physical, emotional, social and moral development, access to social and health

services and a social life for many.(7) During the pandemic more than 1.5 billion children in 193 countries were affected by school closures and transition to online education.(22)

Evidence from the literature is dominated by examining the impact school closure and online learning have had on CAMH, representing its significance. Most CYP's daily routines and social lives revolve around school, therefore school closure has drastically altered their daily routines, having a knock on effect on sleep hygiene, eating patterns, physical activity, screen time and emotional wellbeing.(23) Poorer nutrition, less physical activity and increased screen time have been correlated with worse mental health outcomes.(8) These lifestyle changes have become more prominent over the last decade, offering a possible reason independent of the CP, for worsening CAMH. The importance of daily school routines is most prominent for those with pre-existing mental health difficulties, making an already vulnerable group of CYP even more vulnerable during the lockdown period.(8) Research has identified factors that could help mitigate the effects of the CP on CAMH, these included maintaining daily routines, proper sleep schedules, healthy eating patterns with families eating meals together and physical activity;(24) demonstrating their importance by highlighting the negative effects when these were lost as a result of school closure.

A huge number of CYP access physical health, social and mental health support services through school, many of which would have been abruptly stopped as schools closed.(24) This has directly impacted mental health through loss of school-based mental health promotion, prevention and interventions. In the USA 60% of adolescents who used mental health services did so in educational settings, with one third, equating to around 3 million CYP only accessing this support through school.(25) In addition, potentially more harmful, difficult to identify and subsequently mitigate would have been the loss of access to support services that indirectly impact mental health. An example was access to free or reduced price school meals, without which led to greater financial stress in parents, fears of food scarcity and poorer nutrition,(24) which are all known to have negative effects on CAMH.

With the transition of learning to online, a whole host of issues and uncertainty for CYP and their parents was raised. All studies identified showed remote learning to be inferior to in person learning with regards to academic performance. In the Netherlands, where school closures were only for 8 weeks CYP lost on average three percentile points, equating to a fifth of a school year in academic performance,(7) it would be reasonable to hypothesise that the impacts were greater in countries where school closures were longer and repeated. Additionally, there were issues with attendance, with reduced teacher monitoring. Having spoken to many school pupils they would often officially join the online lessons, but not physically be present at their screen. This is likely to continue to have long-term negative effects on CAMH, due to increased pressure to catch up on school and the consequences of poorer educational achievement.(5) Simulation modelling has suggested such school closures may precipitate poor economic outcomes, negative relationships and poor physical health throughout an individual's whole lifespan, which are all risk factors for negative mental health outcomes and ultimately may result in decreased life expectancy.(26)

Remote schooling's impact on CAMH is likely multifactorial, with common hypotheses for it, including lack of access to adequate technology, lack of concentration, reduced motivation, poorer understanding and lack of support from and interaction with teachers and peers.(12) Multiple studies have identified an association between remote schooling and negative mental health outcomes. There has specifically been an increase in depression,(14) in addition to many CYP reporting remote learning to be more distressing, challenging and increasing anxiety related to academic performance.(24) The impacts varied between different age groups, but the studies were inconsistent in which age groups had the greatest effects. In a USA study of 2300 children, 17 year olds were reported to find 2.4 times more difficulty with remote learning compared to a group of the same age partaking in in-person learning.(24) Many of the impacts of the pandemic have disproportionately affected certain and often already vulnerable groups of the population, with remote learning being no different. CYP from financially and educationally disadvantaged backgrounds faced more challenges with remote learning due to poor access to technology and less support from family members and educators. In contrast, children from UK schools where remote learning was

implicated quickly and there was higher ownership of digital devices had fewer symptoms of depression and reduced stress during remote learning.(8)

School is often the first step in identifying social issues in CYP, such as abuse, neglect and domestic violence exposure and it acts as a safety net for social services.(7) As a result with CYP no longer physically attending school there was a lack of identification and support for those who experienced abuse or maltreatment,(24) coupled with the increased risk of abuse and neglect discussed previously, the impacts on CAMH are profound and likely ongoing.

For CYP, but especially adolescents, school is one of the most important environments for social interaction and plays a key role in their wellbeing, sense of self, behaviour and social development.(23) Losing this environment, which is proven to protect against mental illness for many, would leave a noticeable gap in the development of a CYP's wellbeing, therefore contributing to poor mental health outcomes. This was further compounded by the other challenges brought by the pandemic, including widespread uncertainty and anxiety, financial stress and potentially other difficult family circumstances and losses.

Social isolation

Due to the infectivity of Covid-19, one of the main methods to reduce transmission was social distancing, which inevitably led to social isolation. Over recent years there has been greater portrayal of the importance of social interaction in wellbeing.(1) As a result, the sudden rise in social isolation has had harmful consequences for CAMH. Social interaction is vital in normal childhood development and from an evolutionary perspective spatial distancing between humans is unnatural.(23) Furthermore, in psychiatry social isolation is well-recognised as a risk factor and perpetuating factor for many, if not all mental illnesses, including adulthood depression, EDs and susceptibility to abuse.(23) With isolation being one of the most effective infection control measures, this drastic change to daily life was perceived as necessary to protect the population's physical health, especially the elderly and physically unwell. However, this was possibly at the detriment of our and especially CYP's mental health. This was the case for many CYP, with social isolation being

one of their greatest concerns related to the CP. A study conducted in Australian 13-16 year olds found participant's greatest covid related distress to be inability to see their friends, with an associated statistically significant increase in depression, anxiety symptoms and decrease in life satisfaction compared with baseline.(14) This is consistent with the findings of other studies conducted in other countries, however, this study is unique in that baseline measurements were taken pre-pandemic as part of a larger study looking at adolescent wellbeing that began before the pandemic. Therefore, unlike most of the other studies the changes in mental health were not just perceived changes, increasing reliability.

This was further supported by findings of a UK study of 4-16 year olds; where social isolation leading to loneliness was significantly associated with self-reported and parent-reported increased levels of emotional symptoms, conduct problems, hyperactivity inattention and psychological distress.(14) However, these results cannot be generalised to all CYP, as certain factors were not controlled for, which have been shown to exacerbate these symptoms, such as older age, poor relationship with parents and social media use.(8)

Social isolation alone is significantly linked with mental health outcomes; however, it also contributes to other behaviours that can separately worsen CAMH. A Chinese study recognised that social isolation can induce increased food intake, decreased physical activity and weight gain, which have all been linked to poorer psychological health.(7) However, this is quite a generalised link and it may be that increased food intake and weight gain lead to social isolation. There are also many other factors at play, including increased social media use, poor family relationships and poor access to nutritious food and healthy lifestyle education.

At the time of writing there are no longer any restrictions (in the UK) on socialising and so it may seem that the effects of social isolation are no longer present. However, many CYP are left with the mental health consequences, such as depression, worry, anger, and PTSD symptoms. They have also lost relationships, have fewer friendships and as a result reduced confidence and increased mental health symptoms, making building new relationships more challenging than before.

This maintains an element of social isolation for these CYP and as a consequence may result in continual negative mental health outcomes.
There are certain groups of CYP who were more vulnerable to social isolation and its impacts during the pandemic. One group at increased risk were those CYP with underlying physical health conditions, such as cancer and chronic respiratory diseases.(8) For these CYP social distancing was of greater importance and was carried out for longer due to the physical health risks posed to these CYP if they were infected with covid-19. This is likely to explain, at least in part, the poorer mental health outcomes in this group. Furthermore, these CYP had higher levels of anxiety specifically related to contracting covid, likely on top of the anxiety associated with the other changes and pressures caused by the pandemic and its restrictions that most CYP faced. An Italian study identified that 96% of young cancer patients were between a little to severely fearful about contracting the virus.(27)

For the majority of CYP evidence has suggested increased screen time and social media use worsened CAMH outcomes during the pandemic.(24) However, a systematic review looking to summarise the impacts of the pandemic of CYP's mental health globally found that social media was able to buffer some of the impacts of loneliness in certain groups, specifically those identifying as LGBTQ+.(8) This highlights the importance of social interaction, in that even virtually it can still have positive impacts on CYP.

Findings from previous epidemics supported the effect of social isolation, as an infection prevention measure, on CAMH.(5) 30% of children who were isolated in epidemics, including the SARS and H1N1 epidemics met the criteria for PTSD.(11) This is not the only circumstance where the role of social connections in adolescent's mental health has been seen, which demonstrates the power social interaction has. For example, evidence has shown that those who are left home alone all day have greater levels of depression and anxiety.(14)

<u>Healthcare services</u>

Access to all types of healthcare services was limited during the CP, with resources directed towards intensive care and treatment of Covid-19 patients, leaving an even greater lack of resources for CAMH than prior to the CP.(5) There were substantial disruptions to ongoing treatment for children already facing mental health difficulties.(11) Therefore, it would be reasonable to assume that access to diagnosis and treatment services for CYP presenting during the pandemic was impaired. One of the most important prognostic factors for CYP with mental illness is speed of intervention and duration of untreated illness, therefore rapid intervention is essential to optimise recovery.(28) With less face to face appointments recognising those at risk early was challenging and so often missed, leading to more CYP presenting at crisis point. Emergency crisis care referrals increased by 59% in 2020-2021 compared with 2019-2020.(2) Even once these CYP were recognised they were faced with long delays and rising waiting times due to reduced service availability, some were unable to access support at all.(9,12) 20% of CYP waited more than 12 weeks for follow up appointments between April 2020 and March 2021.(2) CYP from lower socio-economic backgrounds were more susceptible to the consequences of limited CAMHS access, not only because they had a greater risk of requiring mental health support, but also because accessing private treatment would not have been financially feasible. CAMHS are now faced with the resultant pressures of rapidly growing waiting lists and more CYP reaching crisis points than before.

Direct Covid-19 related mental illness.

The mental health consequences of the pandemic were mostly attributed to restrictions to curb transmission. However, there is a small body of evidence suggesting acute viral illnesses, including Covid-19 have been linked to onset or exacerbation of mental distress and psychiatric disorders.(5,11) This includes anxiety, depression, PTSD, and a few cases of paediatric acute onset neuropsychiatric syndrome, which leads to obsessive compulsive disorder or ED behaviours post-infection.(29) This is an important differential to consider when presented with a CYP with new and acute onset psychiatric symptoms. However, it is much rarer than the mental illnesses many CYP are presenting with as a result of

the pandemic, but ultimately aside from managing the infection, the treatment options are the same.(30)

Eating disorders

EDs appeared to be the mental illness most adversely impacted by the pandemic and its restrictions.(31) In the UK the number of CYP awaiting treatment for suspected EDs in September 2021 quadrupled compared to before the pandemic and emergency department attendances for EDs doubled between October 2019 and October 2021.(2) Given EDs have the highest mortality of any mental illness(32) and their strong association with other MHCs,(33) the burden they exert on the individual, their family and health services is enormous. This has been reported by those working in the field and seen first-hand on clinical placements. Furthermore, with limited access to healthcare and strict criteria to access secondary care, it is almost certain that an even greater number of CYP are experiencing detrimental disordered eating.

Explaining the increased incidence of EDs is complex and multifactorial, with the pandemic a large contributor. During times of increased stress and uncertainty people turn to their own coping strategies, often undereating and/or overeating, representing an unhealthy relationship with food and resultant increased risk of future ED.(24) EDs at their core are coping mechanisms, providing an individual with a sense of control when other aspects of life are out of their control. Therefore, during the pandemic where daily life was restricted and dictated by others many CYP turned to disordered eating as a focus, distraction and to gain the perception of having control.(9) Furthermore, there was substantial societal focus on weight and exercise, with constant reporting that overweight and obese individuals were at greater risk from covid-19 infection. Additionally, exercise was one of the few opportunities for freedom and social media was saturated by exercise challenges, home workouts and healthy eating. All of these exposures increase the risk and perpetuate EDs in CYP.(34) The case example discussed below will help to demonstrate and outline the major precipitating factors of EDs at an individual level

and provoke discussion as to whether without the CP and lockdowns this individual, like many others, would have developed an ED or not. This is especially complex as there are many other societal changes that may be contributing to the rise in EDs. With social media, government strategies to tackle obesity, introduction of calories on menus and constant societal drive for weight loss it is impossible to attribute the increased burden of EDs solely to the pandemic and its restrictions.

Case study

The case example outlined below is a real-life anecdotal example I have seen first-hand. The patient (AT) has been anonymised and consented to the use of their story.

This story highlights the multifactorial impact the pandemic and its restrictions have had on CAMH, as discussed above. It also demonstrates some aspects of the dialogue surrounding the unprecedented rise in EDs and whether this is mostly attributable to the CP or other aspects of society.

AT's Background:

AT is now a 19-year-old female who was diagnosed with anorexia nervosa in 2021, during the third UK lockdown. She was a high achiever, aiming to study Medicine. Her ED began during the first UK lockdown and progressed rapidly, reaching the worst in January 2021. She has since been receiving medical and psychological treatment and made significant progress in recovery. However, it has had a large impact on her life plans, relationships, and experiences as a young adult.

AT's story:

AT said she felt unable to ignore the constant news reports about how those who were overweight/obese were at much greater risk from Covid-19. This caused her to reflect on her own weight and physical health. She reported struggling with her weight for most of her childhood, lacking body confidence, hating exercise, being

larger than her friends and being told by her father and grandparents that she was 'fat' and 'would not fade away if she missed a meal'. She recalled her father never allowing crisps, butter, biscuits, and cakes at home and was told to avoid certain foods at parties whilst in primary school. As a result, she was encouraged to hide these foods. She was frequently told to do more exercise, to 'burn the food off' and was praised for any she did. She remembers children at school calling her 'fat' or 'the big one', this continued into secondary school. During the same time she reported there were a few years where her father would weigh her brother, who also struggled with overeating, every Sunday morning and if his weight had gone up there would be a day full of arguments and tears.
Despite this, she reported having never talked to anyone about this until 2021 and she never felt in the right place or with enough time to change her exercise habits, body image or eating patterns, until lockdown.

During lockdown social media was swarmed with posts of young people doing exercise challenges. With increased time to ruminate, overthink and worry, coupled with frequent weight loss and exercise messages, she reported that she decided to begin what she at the time regarded as a 'harmless health kick'. At the time she felt it was the perfect opportunity to finally lose the weight she had been told she needed to. She said she found lots of information and ideas online about low calorie foods, calorie counting, best weight loss exercises and identified her 'target BMI'. She recollected that this developed into increasingly intense and obsessive calorie counting, fasting, daily running and daily weigh-ins, with the weight target constantly getting lower. AT said she cannot recall at what point she began becoming anxious around food and not achieving a certain amount of exercise, but this is where she ended up in late 2020. She managed to keep up with her academic work, with online learning giving her more time for exercise and obsessive food planning. She continued with some socialising but said Covid-19 was a 'perfect excuse to not go out for meals, alcoholic drinks or to cook with her friends'. She reported that in hindsight things were getting rapidly worse, but at the time she was oblivious and frequently ignored her mother's concerns and the warning signs her body was giving her. However, this was until she started what she called, 'the bad eating', which from her descriptions sounds like binge eating. She said she finally reached out for help in

Spring 2021. She spent almost a year waiting for NHS treatment, but said she was fortunate that her parents could help her get private treatment.

Case Study Discussion

This case, like the literature, demonstrates how many of the aspects of the CP and lockdown measures acted as risk factors and precipitators for CAMH problems, especially EDs. One of the main points this highlights was the role of media and weight stigma in CAMH during the pandemic.

From AT's recollection of her experience, many well-evidenced risk and predisposing factors for the development of an ED, including family challenges, bullying, being 'a high achiever' and increased social media exposure, can be recognised. However, it seems her precipitating factors were all a consequence of the CP: fear of becoming unwell, social isolation and increased exercise focus, which were recognised by the literature. Therefore, it is impossible to ascertain whether she would have developed anorexia nervosa without the CP as something else may have been the precipitator. This reflects the challenge of determining correlation versus causation as a limitation of the evidence. It could be argued that the CP worsened her outcome and without it her symptom onset may have been more gradual, with increased protective factors and quicker recognition and intervention, due to school attendance, social interaction, and greater overall support. Despite this, the CP provided a period of time for recovery, learning from home to maintain education, a break from external stressors and fewer missed social opportunities or events.

Furthermore, AT's case indirectly illustrates the inequalities and heightened risks for financially disadvantaged individuals, worsened by the pandemic. AT's ED progressed rapidly, despite access to treatment almost a year before NHS treatment. With long NHS waiting times and greater demands CYP with EDs are at risk of poorer outcomes, longer recovery, and greater consequences, which is currently the situation we face. Like the studies identified in the literature review, the long-term impacts and AT's mental health outcomes are unable to be assessed at this time.

Additional issues surrounding EDs can be seen from this case, including media representation, access to treatment and weight stigma, however, this is beyond the scope of this essay.

Conclusion

The impacts of the Covid-19 pandemic have affected everyone and been much greater and more varied than expected. However, the general consensus among a variety of organisations and specialists, including the United Nations, is that CYP, specifically CAMH, was and continues to be disproportionately and most severely affected.(35) Through a literature review and real-life case example this essay has explored these impacts and complexities of the effects on CAMH. The literature suggests school closure, social isolation and limited access to mental health services are the main factors that led to poor CAMH outcomes, but with the interplay of many other factors, such as family grief and media exposure.

However, the breadth, interconnectedness of the issues, heterogeneity, and limitations of the literature there is much more to discuss. Identifying these issues should enable improved future decision making. Nevertheless, now the priority is to utilise this information to provide CYP with high quality, individualised support to prevent the pandemic from leaving them with lifelong challenges. Finally, given the recentness of the CP, future research into the long-term health impacts resulting from the pandemic, would offer higher quality evidence to inform actions for future pandemics, allow provision of more targeted support and hopefully drive funding improvements for CAMH services.

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