



Feature

Adolescents navigating the COVID-19 pandemic



Drawing by Lydia Pastore

For the study on COVID-19 illness duration and profile in UK school-aged children see [Articles](#) page 708

For the study of mental health of young people during the pandemic in Iceland see [Articles](#) *Lancet Psychiatry* 2021; 8: 663-72

For the neurological manifestations of SARS-CoV-2 infection in children and adolescents see [Articles](#) *Lancet Child Adolesc Health* 2021; 5: 631-41

For the analysis of US emergency department visits see *MMWR Morb Mortal Wkly Rep* 2021; 70: 888-94

COVID-19 has disrupted the lives of individuals and families around the world, and the consequences have been multifaceted, reaching beyond the physical to encompass social, emotional, psychological, and financial aspects. Although much research has focused on older individuals in terms of morbidity and mortality, children and adolescents are especially vulnerable to the mental health consequences of the pandemic. Further complicating the issue, prolonged symptoms after initial SARS-CoV-2 infection have recently been brought to attention.

Despite progress in understanding COVID-19, researchers still know little about COVID-19 with prolonged illness duration, known as long COVID. The exact definition and criteria are still under debate. "There are studies about so-called 'long-haulers'; long is relative since the infection is relatively new. But while most people clear the virus quickly, others have suffered for 5-6 months and longer", says Professor Jeffrey V Lazarus, who specialises in health systems and policy research at the University of Barcelona, Spain. The US Centers for Disease Control and Prevention (CDC) describes long COVID as a range of symptoms that can last weeks or months in patients after first being infected with SARS-CoV-2. Several studies are being conducted to better understand post-COVID-19 conditions, with an emphasis on risk factors, duration, therapeutic options, and their impact on social functioning. In a new study of children aged 5-17 years in the UK, about 4% of participating children who tested positive for COVID-19 had an illness duration of 4 weeks, with the most common symptoms being fatigue and headache, and about 2% still had symptoms at 8 weeks.

At present, the management of long COVID focuses on optimising quality

of life. According to the CDC, many post-COVID sequelae can be improved through already well recognised symptom management programmes, such as breathing exercises for shortness of breath. Furthermore, the CDC recommends creating a comprehensive rehabilitation plan for patients, including physical and occupational therapy, speech and language therapy, vocational therapy, and neurological rehabilitation for cognitive manifestations. "Symptoms not explained by, or out of proportion to, objective findings are not uncommon after COVID-19 and should not be dismissed even if there is not yet a full understanding of their aetiology and the expected duration", a CDC spokesperson told *The Lancet Child & Adolescent Health*.

Even less understood than long COVID are the effects of symptoms and the pandemic in general on adolescents' wellbeing and mental health. "[In addition] to fatigue and respiratory problems, societal and self-stigma [are] having a terrible effect on long-haulers", Lazarus told *The Lancet Child & Adolescent Health*. "The pandemic has been devastating for adolescents. They live in the moment and have lost a year of growing up, experimenting, and exploring", Lazarus added. Adolescents have been deeply affected by being restricted to their homes and losing social connections. Barriers to health care and financial problems have also been major issues. A new population-based survey administered to 13-18 year-olds in Iceland showed an increase in depressive symptoms and worsened mental wellbeing during the pandemic (in October, 2020) compared to peers of the same age in 2016 and 2018. "There appear to be impacts for teens' mental health during COVID-19, though the picture won't be clearer until we have more studies and particularly those that have followed individuals

over time during the pandemic", says Dr Stephen P Becker, a child and adolescent psychologist at Cincinnati Children's Hospital Medical Center (OH, USA). Although data on COVID-19 in youth are less robust than for adults in terms of the number and magnitude of studies, some studies have shown that younger patients experience highly debilitating post-COVID effects, such as neurological complications. "Adolescents' mental health, which was struggling pre-pandemic, may have further deteriorated during the COVID-19 pandemic", says Marci Hertz, senior health scientist in adolescent and school health at the CDC (GA, USA). Hertz notes that for some children, the pandemic might have been experienced as a trauma whose effects were exacerbated by pre-existing mental health challenges, such as depression, anxiety, or other previous or co-occurring traumas like child abuse or neglect, economic or food insecurities, or witnessing domestic violence.

Several factors are likely to influence adolescents' recovery from COVID-19 and the mental health effects of the pandemic, including their mental health status before the pandemic and their personal experiences during it. According to Hertz, negative mental health outcomes are associated with having a close friend or family member dying or being hospitalised, consuming hours of COVID-19-related media coverage, experiencing challenges with online schooling, and not having social support. Generally, feeling connected to school and family and being able to access mental health services is associated with healthier outcomes, Hertz says.

A recent analysis of US emergency department data showed a progressive increase in emergency department visits for suspected suicide attempts during the pandemic. Data from January, 2019, to May, 2021, showed

that adolescent mental health-related visits during the pandemic in 2020 increased by 31% for individuals aged 12–17 years, compared with 2019. Adolescent girls were disproportionately affected. For example, in July–August, 2020, the number of emergency department visits for suspected suicide attempts among girls aged 12–17 years was 26% higher than the corresponding time in the previous year. By February–March 2021, such visits were 51% higher than the same time the preceding year. By comparison, these visits increased by 4% for boys during the same period. Although previous reports have consistently shown higher rates of self-reported suicide attempts among females, this study highlights the level of suicide attempts in adolescent girls.

Other studies have also found associations between COVID-19 and mental health challenges in young people. An increase in symptoms of depression, anxiety, and a decrease in life satisfaction during the pandemic were reported in an Australian study of adolescents. There, the risk factors that predicted these negative mental health consequences were COVID-19-related stresses, remote learning difficulties, and increased conflict with parents, whereas a protective factor against them was feeling socially connected.

As various countries begin to recover from the pandemic, families and schools should partner to support adolescent mental health. “School and family connectedness is associated with positive adolescent mental health in non-pandemic times” said Hertz. A survey from June to July, 2020, of families of students in pre-kindergarten to 12th grade (roughly aged 4–18 years) in public schools of Chicago (IL, USA) assessed psychological wellbeing during the pandemic. As COVID-19 exposure and associated stressors increased, the probability of all mental health concerns increased and the probability for “positive adjustment”

characteristics decreased. Positive adjustments assessed in the study included having positive peer relationships, being hopeful, having positive interactions with family, being relaxed, and talking about plans for the future. Young people who were reported to have these positive adjustments were less likely to experience negative mental health concerns during the lockdown. These findings emphasise the importance of public health initiatives engaging parents to better address adolescent mental health needs.

As in-person learning in schools begins to resume, teachers can play an important role in promoting mental health and wellbeing for students. Hertz pointed out that studies show that social and emotional learning (SEL) programmes have evidence of increasing protective factors for suicide (eg, problem solving and coping skills) as well as reducing risk factors associated with suicide (eg, substance use). The implementation or expansion of SEL programmes could therefore be considered at schools as they re-open. In addition, SEL programmes lead to reductions in clinical diagnoses across racial, ethnic, and socioeconomic status groups, persisting even several years after programme implementation. For those with more severe clinical needs, individual and family counselling would be recommended. Lazarus highlighted the need for self-help meetings to help adolescents deal with the pandemic. This is particularly the case for young people in difficult financial or social situations.

Admirably, some peer-to-peer initiatives have been established by young people themselves, which can be a powerful form of support. For example, Lydia Pastore, a 16-year-old high school junior from Arizona, USA, has created a website called Chronic Connections. The website is geared towards giving teenage

“COVID long haulers” a platform for providing emotional support and practical advice. The website features a symptom tracking journal and contains monthly positive affirmations. Virtual zoom meetings are held monthly, which function as an invaluable outlet for many adolescents. “Chronic Connections has not only acted as a resource of social support for teenagers enduring long-haul COVID, but has also allowed for the opportunity for international discussion surrounding the topic of adolescent post-COVID care”, says Pastore. “[It] offers a group in which teens can share their symptoms without the fear of being stigmatised, and can benefit from a sense of validation and reciprocal empathy”, she added. Another resource is Long Covid Kids, which has support groups for families and caregivers of children with SARS-CoV-2 infection in the USA, UK, and Canada. Long Covid Kids gives opportunities for families to connect with one another, share their stories, and provide peer-to-peer support, and it supports research on long COVID in children. The organisation seeks to aid the medical community in developing a definition and better understanding of long COVID in children by sharing data from their member surveys.

The persistence of COVID-19 symptoms and the effect of them and the pandemic on the mental health of adolescents is concerning. Further research on COVID-19 and adolescents should focus on developing a consensus definition of long COVID-19 and post-COVID effects, on the pathogenesis of such effects, and on targeted therapeutic interventions. Furthermore, future pandemic preparations should address access to mental health services during closures. We are hopeful that voices like Pastore’s will help create greater awareness for adolescent long haulers and ultimately lead to improved outcomes.

Farooq Kazi, Ammara Mushtaq

For the **Australian study of changes in adolescent health during the pandemic** see *J Youth Adolesc* 2021; 50: 44–57

For the **survey of psychological wellbeing during the pandemic** see *JAMA Network Open* 2021; 4: e2111103

For the **Chronic Connections website** see <https://www.chronicconnections.org>

For the **Long Covid Kids website** see <https://www.longcovidkids.org>