Mental health and wellbeing of children and adolescents during the covid-19 pandemic

Elizabeth A Rider, 1 Eman Ansari, 2 Pamela H Varrin, 3 Joshua Sparrow 4

What you need to know

- When assessing mental health and wellbeing, consider developmental stage, functional or behavioural manifestations, proximity to and severity of pandemic related hardships, and individual, family, and community strengths, supports, and protective factors
- A child or adolescent may show no observable or reported symptoms of distress, or may show them at some later time
- Primary care physicians’ roles include screening, outreach, identification, referral, ongoing monitoring or surveillance, support, and coordination with specialist clinicians
- Encourage resilience in all patients, not just those presenting with mental health and wellbeing concerns

What does the evidence show?

At the time of writing, most research on covid-19 has focused on adults. 7-20 Research on the mental health effects of the pandemic on children, adolescents, and their families is limited and in some instances contradictory. 21-24 Many of the studies use life satisfaction and wellbeing assessments that are, in general, not intended to detect or predict diagnosable mental health disorders.

Most evidence specific to covid-19 depends on data that are limited because of self-selected/self-reporting participants, smaller sample sizes, virtual-only data collection, heterogeneous samples limiting data aggregation, and short term only outcomes.

The strongest evidence is not about the mental health effects of covid-19—that will emerge over the years to come—but for previously well established mental health disorders in children, for example, depression, anxiety, post-traumatic stress disorder, and for risk and protective factors for these disorders.

While longer term outcomes specific to covid-19 remain unknown, guidance can be extrapolated from previous large scale disasters, for example, the Indian Ocean earthquake/tsunami of 2004, the Nepal earthquakes in 2015, the Deepwater Horizon Gulf of Mexico oil spill in 2010, Hurricane Katrina in 2005, and disease outbreaks including the HiNi influenza pandemic of 2009 and the Ebola epidemic of 2014. 25-30

The advice in this article is based on a comprehensive evidence based literature search and analysis; guidelines and policy papers; consensus based guidance from national and international organisations; input from patients and parents; input from clinical, academic, and patient reviewers; and our own clinical experience.

Varying evidence

Some data are contradictory, at times reflecting divergent effects of the pandemic on younger children and adolescents, individual differences and contexts, and the impact of social determinants of health.

For example

- Data from studies in multiple countries—including a longitudinal probability study that assessed youth in 2017 and 2020; 31 a retrospective comparison of emergency department suicide risk screens comparing results from January-July 2019 with January-July 2020; 32 a cross-sectional study of emergency department patients between January 2018 and January 2021; and a study of
Systematic and narrative reviews and technical reports show that significant frequency of mental health disruption and mental health disorders during the pandemic, and that prior mental health disorders can increase the risk of pandemic related or induced mental health trauma. However, a proportion of these data also shows that some children with prior and/or ongoing mental health disorders have had reduced symptoms during the pandemic. This may be because of a pause on the demands of in-person schooling (peer interactions, sensory over-stimulation, etc) as well as increased access to supportive parents who are forced to stay at home.

How do you assess mental health and wellbeing?

The following information is relevant to most consultations; ie, for children or adolescents attending expressly for mental health concerns, as well as those presenting with other symptoms. All children and families have experienced the pandemic in some way.

Start with a brief history of pre-pandemic physical and mental health and school functioning, and compare pandemic related findings with this baseline.

Include an interview with the child or adolescent, as well as the parent or adult caregiver whenever possible (see box 1 for prompts).

Box 1: Suggested prompts for children or adolescents, according to developmental stage

Young children (ages 3-5)
- Did you hear about the virus that has been making some people sick? If the child does not respond or answers no, stop here, and ask parents
- Did you know about anyone who got sick? What happened to them?
- Do you think anyone else might get sick?
- Did anyone in your family have to stay at home while this virus was making people sick? Who? What did you think about that?

Older children (ages 6-11) and adolescents
- Did you know about anyone who got sick from the virus? What happened to them?
- Do you think anyone else might get sick?
- Did you hear about the vaccines? What do you think about that?
- Did you or anyone in your family have to stay at home during this pandemic?
- What was that like?
- Did anyone in your family lose their job or have more trouble making money?
- Did you get in touch with your friends when everyone had to stay at home? How did that go?
- What was the worst part of this whole thing for you?
- Were there any things you liked about it?
- What do you think is going to happen after this pandemic?

Keeping in mind developmental stages, ask children about their understanding of the pandemic: Why did it happen? How have they responded? How has it affected them? What are their fears and worries? What helps them to feel safe? Validate their descriptions of any negative effects on their wellbeing and on friends, families, and activities.

What are their immediate needs (eg, food, shelter, safety, adult caregiver availability)? What is the current family constellation? What is the parent/family experience of and response to the pandemic (eg, job loss, new or exacerbated parental mental health challenges)? What supports currently exist (eg, family or social network; financial or material resources; access to healthcare and social supports; longstanding effective mechanisms for coping with adversity; spirituality/religious community)?

Consider what factors might be affecting mental health and wellbeing

Has the child or their family been exposed previously to trauma, separation, or loss, including adverse childhood experiences? Is there a history of mental health disorder? Prior school performance challenges? What coping capacities has the child previously used? Is the child readily able to accept adult help?

Inquire about experiences related to covid-19, eg, deaths, serious illness, separations, hunger, safety, financial hardships, parental unemployment, food and housing security, school disruption, disrupted peer interactions, disrupted physical and extracurricular activities.

Grief after a death in the family is expected. However, grief complicated by disruption of traditional grieving rituals, multiple deaths, limited or no access to social or professional support, can increase the risk of mental health disorders. Inquire about parents’ grief or depressive symptoms (these may impact the child/adolescent).

Factors that can contribute to child or adolescent vulnerability during the covid-19 pandemic are summarised in fig 1 and table 1.
Fig 1 | Factors contributing to child and adolescent vulnerability during the covid-19 pandemic

- Separation, loss, and grief
- Social determinants of health
- Social isolation, quarantine, and loneliness
- Special needs and/or disability
- Disrupted home and school routines
- Prior trauma
- Prior mental health disorder
Ask about the effects of covid-19 related events or experiences

What have been the physical and emotional effects of the child’s or adolescent’s experiences of covid-19? Limited comprehension of pandemic related changes in routines and circumstances, frustration, and distress are often expressed through behaviour and can affect functioning in developmental domains such as sleeping, feeding or eating, behavioural control or regulation, mood, cognitive capacities (eg, attention, concentration, school performance), and family and peer relationships.

Common behavioural and functional responses to extraordinary circumstances, like the covid-19 pandemic, are summarised in table 2.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Examples of factors contributing to child and adolescent vulnerability during the pandemic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor</strong></td>
<td><strong>Examples</strong></td>
</tr>
<tr>
<td>Separation, loss, and grief</td>
<td>• Separation from primary caregivers or other family owing to illness, quarantine/lockdown and caregiver death can cause anxiety, sadness, or fear of their own or another caregiver’s death. This is compounded when caregivers are frontline or essential workers at increased risk of contracting covid-19. Grieving processes can be disrupted when traditional rituals such as funerals and family gatherings are impeded.</td>
</tr>
<tr>
<td>Social determinants of health</td>
<td>• Caregiver or family financial hardship and food or housing insecurity, inadequate internet/device access for learning, and poor access to green space can affect wellbeing. • In communities with higher rates of severe illness or death, the chance of experiencing multiple losses in short order is greater. • 20% of Black children in the US (versus 14% of the total population) have experienced death of a caregiver from covid-19. Many Native American sovereign nations and communities have experienced high death rates owing to chronically inadequate healthcare resources, while some remote communities have successfully reduced infection rates by mandating masks, providing rapid testing and sufficient personal protective equipment (PPE), and shielding older people. • Globally, some studies of indigenous peoples suggest lower covid-19 fatality rates, possibly because of isolation. Inadequate access to covid-19 testing and low quality data hinder accurate conclusions.</td>
</tr>
<tr>
<td>Social isolation, quarantine, and loneliness</td>
<td>• Facility closure (schools, community centres, spiritual institutions, food programmes) has caused loss of connection with teachers, friends, peers; lack of access to usual support systems; reduced physical activity; loss of instructional time; and increased screen time from virtual learning/socialising/gaming/digital media use. • These factors potentially lead to increased risk of depression and anxiety, emotional dysregulation, hyperactivity/inattention and conduct problems in children aged 4–10; screen fatigue, exposure to cybercrime, and post-traumatic stress reactions. • Additional parenting demands/loss of previous childcare place some children at increased risk for maltreatment, but key reporters and observers of maltreatment (ie, school personnel) are not physically available during school closures. • While important in mitigating infection, masks, physical distancing, and lockdowns can potentially affect peer relationships, communication, and social-emotional development; particularly of children under 4 and developmentally vulnerable children. • Increased exposure to social media and news reporting has heightened anxiety and stress, worsening or triggering behavioural health conditions, and is associated with disruption to sleep and circadian rhythm, and increased vulnerability to bullying and abuse. However, social media use also can help cope with stress and social isolation, increasing social connection, self-expression, and access to information, especially for adolescents. • Thirty per cent of isolated or quarantined children and adolescents during the SARS, Ebola, and the 2009 and 2010 H1N1 influenza pandemics developed PTSD, a statistically significant higher number than those not isolated. Prevalence was higher with &gt;10 days of quarantine.</td>
</tr>
<tr>
<td>Physical, intellectual, and/or learning disabilities</td>
<td>• Access to in-person evaluations, physical and occupational therapy, speech and language therapy, and medication/nutrition support previously provided in the school setting may be lost. • Parents may lose contact with supportive adults and respite options. • School closures reduce opportunities for social skill development. • Online learning is more difficult for students with executive functioning skills challenges such as difficulty paying attention and focusing, and limited impulse control, perseverance, and frustration tolerance.</td>
</tr>
<tr>
<td>Disrupted home and school routines</td>
<td>• Can increase child and parental stress, increase screen time, reduce physical activity, and increase risk of domestic violence exposure or abuse.</td>
</tr>
<tr>
<td>Prior trauma</td>
<td>• Domestic violence, child abuse/maltreatment, and adverse childhood events, are risk factors for pandemic-related trauma and exacerbated pandemic effects.</td>
</tr>
<tr>
<td>Prior mental health disorder</td>
<td>• As well as increasing the risk for pandemic related or induced trauma leading to functional disruption, the pandemic has also interfered with access to ongoing mental health treatment previously available at schools (35% of US youth receiving mental health services access these services exclusively in school).</td>
</tr>
</tbody>
</table>
Observe and inquire about the severity and duration of distress associated with these functioning domains. These will depend, in part, on the proximity to pandemic related traumatic events and hardships, and to the severity of these events and hardships (eg, separations from/losses of primary caregivers,59 91 as well as on developmental stage. The longer distress persists over time, the more likely it is to disrupt peer and family relationships and school performance.

Look for responses that might indicate a mental health disorder

The behavioural responses listed in table 2 fall on a continuum from developmentally expected and mildly distressing to severely disruptive to the child/adolescent and/or others. Severe disruption of one or more functional areas is more likely to indicate a mental health disorder than mild distress.

The length of time a behaviour has persisted might also indicate the presence of a mental health disorder—the DSM V, for example, specifies minimum duration of symptoms qualifying for diagnoses of disorders such as depressive and anxiety disorders, and trauma reactions.97 Generally, consider diagnosing a mental health disorder when responses occur for long enough to affect functioning.

Assessing distress

Distress associated with some areas of functioning may be subjective and may not be reported. A toddler, for example, may express distress through facial or verbal expressions of worry. More severe disruption in functioning may include relentless clinging to the caregiver, refusing to let the caregiver leave, loss of usual play behaviours when the caregiver is not present, etc.

Mildly distressing fears could be expressed by articulating fearfulness; whereas disruptive functioning might include panic attacks, or extreme avoidance of the sources of fear, eg, refusal to leave home when necessary.

Mild sleep disturbance in any age group may include occasionally taking longer to fall asleep and/or waking feeling fatigued.

* None to all responses might be present. These responses may present on a continuum from mildly distressing to severely disruptive.
Disruption in sleep functioning, however, would include prolonged difficulty falling asleep on most nights, resulting in persistent daytime fatigue and related irritability.

Children/adolescents may also present to primary care or to the emergency department with medically unexplainable physical symptoms (eg, abdominal pain, headache) that are a manifestation of their distress, with or without clear signs or symptoms that are more commonly associated with mental health disorders (eg, depressed mood, loss of interest and pleasure in usual activities, low energy, anxiety, sleep disturbances, withdrawal/social isolation, suicidal ideation).

Severity of distress can also be determined by pervasiveness of symptoms across developmental domains (eg, more than one of the functional areas listed above), or across more than one self-regulatory capacity (eg, attention, frustration, tolerance, perseverance, impulse control, expressing emotions), or across more than one formal or informal learning capacity (eg, curiosity, exploration, motivation for learning, constructive risk taking in service of learning).

Many children and adolescents experiencing distress, whether reported or observable or not, may not develop symptoms of a mental health disorder, or may only develop them at some later time.98 99

**Screening**

Simple, brief mental health screening (as recommended at regular intervals from infancy through adolescence by the American Academy of Pediatrics), including programmes that consider the whole family, may be used to help assess for emotional symptoms, behavioural functioning symptoms, and psychosocial symptoms100 101 (box 2).

**Box 2: Screening tools**

- Mental health screening can be used to detect emotional and behavioural functioning/psychosocial symptoms, and can help identify when referral for evaluation and treatment or other supports are needed100
- Since 2016, the US Preventive Services Task Force has recommended screening for major depressive disorder for all adolescents aged 12–18,102 and notes that the Patient Health Questionnaire for Adolescents (PHQ-A) and the primary care version of the Beck Depression Inventory are the screening tools used most often
- The National Institute of Mental Health recommends suicide screening for all children ages 8 and above presenting to the emergency department, outpatient, and inpatient settings using the four-item brief screening questionnaire ASQ (Ask Suicide-screening Questions)103 104
- Recent studies comparing the PHQ-9A and the ASQ in 803 adolescents aged 12 and older in June 2019 to October 2020105 and 600 medical inpatients aged 10–21106 found the ASQ suicide risk screening identified patients not identified by other depression screening
- A list of paediatric mental health screening tools, including global tools, can be downloaded from the American Academy of Pediatrics’ website.107 These and other tools100 101 can help assess and identify children and adolescents who require referral for formal psychiatric evaluation109 111

**Box 3: Behavioural responses and signs that could indicate a mental health disorder, and when to refer for specialist assessment**

Consider referral for specialty care when these symptoms are present (as soon as possible, according to local protocol)6 82 98:

- Anxiety and/or depressive symptoms
- Increased arousal, mood changes, irritability, withdrawal, emotional numbing, being overwhelmed
- Physical symptoms such as fatigue, headaches, or stomach aches that cannot be medically explained
- Disordered eating habits
- Sleep disturbances, including unrestful sleep, trouble falling asleep, middle of the night waking
- Traumatic grief
- Symptoms of post-traumatic stress disorder—eg, that disrupt functioning and/or can create risk of harm to self or others
  - Nightmares
  - Re-experiencing the event/disaster
  - Intrusive thoughts—eg, that interfere with focus, concentration, attention
  - Increased arousal—eg, that may lead to aggressive behaviour
  - Hypervigilance—eg, that may lead to aggressive behaviour
  - Avoidance of activities, experiences, or places associated with the event or disaster and/or more general withdrawal
  - Emotional dysregulation or dissociation

These symptoms require referral for emergency/immediate mental health evaluation98:

- Suicide attempt; suicidal ideation, intent or plan
- First known self-cutting; repeat self-cutting if patient has no existing mental health clinician
- Intense fear, anxiety, helplessness, panic or horror, especially if these disrupt basic areas of functioning such as sleep, eating, family and peer interactions, academic performance
- Presence of dissociative symptoms such as detachment, depersonalisation, derealisation, eg, child may appear distant, aloof, confused, daydreaming
- Extreme confusion or inability to make simple decisions
- Uncontrollable and intense grief
- Intrusive thoughts or severe cognitive impairment
- Debilitating physical complaints suggestive of bodily symptoms in the absence of medical explanation

**How can you manage children’s and adolescents’ mental health and wellbeing?**

Trauma informed management in primary care12 can help patients and families to access community supports, and, when indicated, to access mental health treatment and specialty care. In the face of the covid-19 pandemic, all children/adolescents/parents may benefit from resources and support to restore their resilience (“the ability to maintain or regain mental wellbeing, despite adversity”110). A smaller group requires additional support and guidance; and an even smaller number need specialist treatment.

We have adapted the stepwise, trauma informed management approach that is recommended by the Center for Pediatric Traumatic Stress13 114 and others115 116 to be applicable during the covid-19 pandemic (fig 2).
Support parents and caregivers and encourage consistency and sensitivity

Strong family relationships and positive interactions (in person, by phone, or online) are protective factors that can bolster resilience. Appreciate and reinforce parents’ efforts to be present and empathetic, to focus on the present, help their children to grow and continue learning, and model positive coping and stress reduction strategies—e.g., physical activity, regular use of safe green spaces, and pursuing social connections and routines (while adhering to physical distancing or mask use). These efforts can help reduce effects of the pandemic in children and adolescents such as hypervigilance, lack of trust in adults, self-regulation issues, and inappropriate social interactions, and can provide protection from developing a mental health disorder.\(^{15}\)

Encourage open, age appropriate parent-child-family discussion about coping with the pandemic, including addressing concerns.\(^{39,63}\) Cross sectional surveys and narrative reviews emphasise the importance of communication in mitigating symptoms of anxiety, depression, and stress.\(^{39,64}\)

Counsel parents in talking about illness or death—how to provide simple, clear information about family health problems, in calm and neutral tones, while avoiding minimisation of any serious health threats; and realistic reassurance (e.g., “Your parents are doing everything they can to make sure you and they stay healthy”). Avoid false promises that may not be possible to keep and might later damage the child’s ability to trust (e.g., “Don’t worry, you will be fine”). Box 4 offers advice about children or adolescents who have experienced the death of one or more caregivers or family members.

**Box 4: Death of a family member**

In the US, alone, at the time of writing, approximately 37 300 to 43 000 children and adolescents have experienced a parent’s death from COVID-19.\(^{73}\) Globally, more than 1.5 million children under age 18 lost a parent, custodial grandparent, or secondary caregiver in the first 14 months of the pandemic.\(^{117}\) Here is some advice, based on clinical experience, for working with children or adolescents who have experienced the death of a caregiver or family member:

- Ask adult caregivers and the child about family members, friends, teachers, and others who are providing emotional and material support and whether the child experiences these as helpful, comforting, and trustworthy.
- Consider referring for mental health evaluation if family and/or social supports are lacking.
- Confer with adult caregivers about, and monitor for, depression, behavioural changes, or disruptions in development and learning.

---

**Fig 2** | A stepwise model for management,* adapted from the Pediatric Preventative Psychosocial Health Model\(^{113,114}\) and the Multi-tiered System of Support model.\(^{115,116}\) See box 3 for symptoms requiring emergency/immediate mental health intervention.
Support parents, and acknowledge the understandable pandemic related stresses affecting all parents, as well as those specific to their situation. Offer information about referrals and available resources—psychological, physical, social, spiritual, formal and informal—that support wellbeing. Acknowledge the variable capacity of communities and governments to make needed resources available, and empathise with the hardships that result from inadequate resources. Work with teachers and schools, public health professionals, and other community bodies to secure access to food, housing, physical and mental health services, and reliable childcare.

Encourage parental self-care, including creative outlets, supportive social interactions (with appropriate safety precautions), healthy nutrition, physical activities and exercise. Consider discussion of mindfulness, spiritual practices, and cultural traditions for sense making and healing.

Provide anticipatory guidance and suggested interventions to parents and caregivers, keeping in mind developmental stages (table 3).

Table 3 | Practical guidance to share with parents and caregivers by developmental stage*

<table>
<thead>
<tr>
<th>Stage</th>
<th>Suggested interventions and guidance</th>
</tr>
</thead>
</table>
| Infants and toddlers    | • Identify supports and activities that help adult caregivers remain calm, patient, and reassuring with infants and toddlers  
  (0-3 years)             | • Attempt, whenever possible, to preserve normal routines  
                           | • Shield toddlers from media coverage  
                           | • “Special time” with parent/caregiver when possible  
                           |
| Preschool children      | • Provide reassurance about the child’s and family’s safety and what is being done to prevent future infection (eg, handwashing, staying home, mask wearing, vaccination)  
  (3-5 years)             | • Answer questions simply and watch the child’s face to know when the child has heard enough  
                           | • Label and validate the child’s feelings  
                           | • Attempt to preserve, as much as possible, normal routines  
                           | • Limit television/media exposure; young children do not understand the images they see and may be frightened by them  
                           | • Ensure that the child knows parents’ and family members’ whereabouts and schedules  
                           | • Develop opportunities for the child to play and relax; engage with the child in interactive play  
                           | • Offer suggestions for positive resolution of play scenarios if children repeatedly persevere with one scenario (children work through issues during play)  
                           |
| School aged children    | • Answer child’s questions directly and honestly, let child know you are available to talk further  
  (6-12 years)            | • Provide information in an open, age-appropriate, reassuring manner  
                           | • Be open to questions: “Tell me more about that”  
                           | • Label and validate feelings: “Yes, it is scary, and this is what we are doing to stay healthy”  
                           | • Ask their opinions  
                           | • Keep usual routines where possible  
                           | • Focus on positive behaviour, rather than negative behaviour  
                           | • Minimise television viewing; if they do hear news reports, be present and clarify what they see or hear  
                           | • Encourage participation in family or other efforts to help as appropriate  
                           | • Offer suggestions for positive resolution of play scenarios if children repeatedly persevere with one scenario (children work through issues during play)  
                           |
| Adolescents             | • Show respect for the adolescent’s feelings  
  (13-17 years)           | • Discuss the adolescent’s opinions, feelings, and different ways to cope  
                           | • Discuss causes and effects of the covid-19 pandemic  
                           | • Listen to and talk about what adolescents see on social media and hear from their friends  
                           | • Be present if they watch television; discuss and provide perspective  
                           | • Check in regularly  
                           | • Address risk taking behaviours clearly and directly  
                           | • Share and talk about reactions to covid-19 related disruptions (eg, virtual graduation, cancellation of prom, etc)  
                           | • Normalise experiences: “You’re not alone; everyone is struggling”  
                           | • Encourage adolescent to connect with their friends—in person if restrictions are lifted; or virtually, by phone, or taking the advised safety precautions (eg, outdoors, masks, no physical contact, etc)  
                           | • Share your own feelings and coping mechanisms (be a role model)  
                           | • Adolescents may want to participate in efforts to help. Help them to engage in community or other projects as appropriate  
                           |

* Adapted from references 55859 For all interventions, take into consideration the context in which they occur as well as cultural differences, beliefs, and practices.
Monitor the duration and severity of new symptoms

Many children and adolescents need only family, primary care, and/or community supports to cope and recover from pandemic-induced distress, but some will develop behavioural or functional manifestations that might indicate ongoing distress.

Be aware of the difference between responses that are mild on the severity continuum and symptoms that could indicate a mental health disorder (box 3).

A minority of children and adolescents (ie, those with persistent, severe, or escalating distress and/or severe, prolonged disruption of functioning) need evaluation and treatment by a mental health specialist and more intensive psychosocial support (box 3, fig 2).

When to refer to specialist services

In accordance with local protocol and resources, refer as soon as possible after recognising symptoms that may suggest a mental health disorder—anxiety, separation anxiety (that may manifest as school refusal with return to school after long lockdowns), depression, and post-traumatic stress disorder are among the most frequently identified disorders during the covid-19 pandemic.35

Immediate specialist assessment is required for any suicide attempt, ideation, intent, or plan; first known or repeat self-cutting; intense fear, anxiety, helplessness, panic, or horror, especially if basic functioning is disrupted; dissociative symptoms; extreme confusion; uncontrollable or intense grief; intrusive thoughts; severe cognitive impairment; and debilitating physical complaints suggestive of bodily symptoms in the absence of medical explanation. See box 3 for more detailed referral criteria.

The American Academy of Pediatrics,120 Philippine Pediatric Society,121 American Academy of Child and Adolescent Psychiatry,122 and the American Psychiatric Association123 recommend routine and crisis telemedicine and teleconsultation, and the International Paediatric Association124 currently recommends these during the pandemic. Telepsychiatry is widely used and effective125; however, access is inequitable,120 124 126 and it may not be effective for many young children who require interactive play therapies.

Offer ongoing mental health support for all children/adolescents

Follow child or adolescent mental health closely in primary care, in conjunction with parents, teachers and schools, public health professionals, and other community resources. Trauma, complications of grief, anniversaries of separations, deaths, and changes in the community can continue to affect some children and families for months, or even years.98

Might children and adolescents living through this pandemic present with mental health disorders in the future?

Data from previous pandemics and epidemics suggest that observable symptoms of mental health disorders may not show until well after the traumatic event98; and that post-traumatic stress, detachment, insomnia, and anger can be experienced up to three years after being quarantined.99 However, longitudinal studies after disasters in the US (Hurricanes Katrina and Gustav; Gulf oil spill) suggest an overall decrease in trauma distress symptoms over time, especially in younger children.29 127 A follow-up study after the Boulder Creek Dam collapse also found that PTSD symptoms in children and adolescents decreased from 32% to 12% years after the disaster to 7% after 17 years.128

Education into practice

- What covid-19 related mental health challenges do children and adolescents in your community face?
- How do you distinguish between mild responses and symptoms that might indicate a mental health disorder at different developmental stages?
- What community resources do you have that may be helpful for children and their families, eg, teachers, in-school services (where schools are open), early intervention programmes, and other community programmes?

How patients were involved in the creation of this article

Our parent coauthor (PV) has lived experience as the parent of a young adult with special healthcare needs. She teaches as “family faculty” (representing the voice of the parent/family) in workshops for healthcare professionals and is a clinical psychologist and family support coordinator at a school for students with special needs. She contributed to the material on school closings and reopening, and children with special needs.

Three parent contributors, one an autism/special needs teacher, reviewed a draft of the manuscript. Their insights are incorporated into the sections on school closures, children with disability and special needs, and green space activity. From patient reviewers, we added two new review studies, additional critical analyses of impacts, and additional suggested resources for parents.

Finally, four children, ages 6-18, were asked about their experiences with lockdown. They shared their worries about parents who are healthcare workers; finding supports (parents, siblings, friends, teachers); and getting outside. We incorporated these into tables 1, 2, and 3.

Search strategy

Our literature searches in PubMed and Web of Science began with the terms: “COVID-19” OR “Coronavirus” AND “children” OR “pediatric” OR “adolescent” OR “teen” OR “parent” OR “caregiver” AND “mental health” OR “psychological” OR “emotion” OR “psychiatry”. We used multiple combinations of keywords: pandemic, disasters, quarantine, lockdown, social isolation, physical/social distancing, school closures, school re-openings, anxiety, depression, PTSD, primary care, stress, child mental health, child development, behaviour, trauma-informed care, social determinants of health, families, telehealth, and others. We also searched for information from past epidemics/pandemics (eg, SARS, H1N1, MERS). We reviewed systematic, narrative, and rapid reviews and meta-analyses. Additional literature was found in the references of identified articles, and citation chaining of relevant articles in Google Scholar. The initial search occurred in May 2020 with frequently updated searches until July 2021. Given the importance of international experiences and findings in this rapidly developing pandemic, we included studies related to covid-19 and reports from various countries including Australia, Bangladesh, Brazil, Canada, China, Egypt, France, Germany, India, Italy, Nepal, Norway, Philippines, South Korea, Spain, UK, US, and others. Additional sources used for this paper are listed in the box “How this article was made.”

How this article was made

The authors of this article represent fields of primary care paediatrics, child psychiatry, paediatric emergency medicine and critical care, clinical psychology, and clinical social work.

Very little research evidence exists regarding mental health issues and wellbeing in children and adolescents during pandemics, including covid-19, SARS, and MERS. Although conclusive, evidence based guidelines for assessment and management of covid-19 related mental health effects in children and adolescents do not yet exist, we base our recommendations on

- Evidence based literature including searches in PubMed and Web of Science
Potential areas for further research

- School closure impacts—research findings are varied and conflicting. Challenges for future research will include unlinking the effects of school closures from other pandemic related life changes, and identifying individual, family, and community factors contributing to differential outcomes.
- Long term impacts of the pandemic on children’s and adolescents’ mental health and wellbeing, as well as the effectiveness of interventions administered during or after the pandemic for pandemic related effects. Challenges will include causal attribution of pandemic impacts versus non-pandemic related factors, especially given child and adolescent mental health declines observed prior to the pandemic.
- Outcomes and mitigating factors for children and adolescents who have experienced loss of a parent or carer because of covid-19.
- Community level and cultural factors affecting the pandemic’s effects on child or adolescent mental health.
- Possible positive effects on child or adolescent coping, resilience, wellbeing, and individual, family, community, and cultural factors contributing to positive effects.

Resources for physicians and other professionals

General covid-19 resources


Management of mental health issues within primary care practice


Telepsychiatry


Impact of trauma: strategies for self-care and healing

- Early Childhood Learning and Knowledge Center:
  - Defining trauma: https://eclkc.ohs.acf.hhs.gov/publication/defining-trauma
  - Caring for ourselves as we care for others: https://eclkc.ohs.acf.hhs.gov/publication/caring-ourselves-we-care-others
  - Coping and healing: https://eclkc.ohs.acf.hhs.gov/publication/coping-healing

Children and adolescents with special healthcare needs


Schools and covid-19


Resources for parents, families, caregivers, and children

General covid-19 resources

Children and adolescents with special healthcare needs


Books and videos for children


Acknowledgments: We thank Lauren Rozenway, Yuri Rozenway, and another anonymous parent reviewer for their helpful comments on earlier drafts. We also thank four children (ages 6–18) for sharing their experiences and perspectives on the covid-19 pandemic. We are grateful to the BMJ editorial team and reviewers for their helpful comments.

Funding: none

Competing interests: We have read and understood BMJ policy on declaration of interests and declare that we have no competing interests.

Contributorship statement: ER conceived the paper, consulted with EA, JS, and PV in developing areas of emphasis, and wrote the first draft. ER, JS, and EA performed literature searches, and all authors contributed additional content and reviewed drafts. ER provided the original tables 1, 2, and 3 and figures 1 and 2. JS provided boxes 1, 3, and 4, and all authors contributed. All authors revised the work for important intellectual content, approve the final submission, and agree to be accountable for all aspects of the work. ER is the guarantor.

Provenance and peer review: commissioned, based on an idea from the corresponding author; externally peer reviewed.

87 Osofsky JD, Osofsky HJ. Challenges in building child and family resilience after disasters. J Fam
85 Sprang G, Silman M. Posttraumatic stress disorder in parents and youth after health-related
80 Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the impacts of the covid-19 pandemic response to
74 McFarling UL. “They’ve been following the science”. How the covid-19 pandemic has been curtailed in Cherokee Nation. STAT News 2020. https://www.statnews.com/2020/11/17/how-covid-19-has-been-curtailed-in-cherokee-nation/ 74
67 Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the impacts of the covid-19 pandemic response to
60 Kofman YB, Garfin DR. Home is not always a haven: The domestic violence crisis amid the
59 Sprang G, Silman M. Posttraumatic stress disorder in parents and youth after health-related
57 Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the impacts of the covid-19 pandemic response to
55 Sprang G, Silman M. Posttraumatic stress disorder in parents and youth after health-related
51 Kofman YB, Garfin DR. Home is not always a haven: The domestic violence crisis amid the
50 Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the impacts of the covid-19 pandemic response to
45 Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the impacts of the covid-19 pandemic response to
40 Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the impacts of the covid-19 pandemic response to
38 Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the impacts of the covid-19 pandemic response to
