MIND MATTERS

Lessons from past crises
for child and adolescent mental
health during COVID-19

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> **"Too many children and young people, rich and poor alike, in all four corners of the world are experiencing mental ill health as we have never seen before. This is the silent emergency of our times. It has no borders and requires urgent attention.**
>
> – Henrietta H Fore

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Executive summary

The COVID-19 pandemic is a crisis like no other in modern times. Its global ubiquity is unprecedented, leaving no population or community untouched. Its impact on our mental health, and that of children and adolescents, is still emerging but the available evidence suggests it is, and will be, marked. Given that the pandemic is just over a year old and its evidence base is therefore still nascent, looking at the impact of past crises on youth mental health is a useful means of providing insights that can guide policies and programmes to support their mental well-being. This report does just that. It represents the first of two volumes of rapid syntheses on youth mental health by UNICEF Innocenti, with the second looking at the available evidence that has emerged largely over the past year.

Our evidence review illustrates the traumatic impact of past crises on youth mental health. This includes post-traumatic stress disorder (PTSD),[1] higher risk of externalizing and internalizing disorders,[2,3] physical health problems,[4] poorer cognitive and social outcomes, stigma and discrimination from having caught or being exposed to a disease. For programming responses, examination of disasters and the HIV epidemic have given clear guidance on the need for rapid screening[*], training personnel, use of digital tools and platforms, and family, community and school-based approaches to addressing youth mental health.

Based on the literature of past crises and the COVID-19 pandemic, the associated public health responses and their social and economic impacts are likely to have multiple deleterious effects on youth mental health. These include elevated risks of anxiety and depression, trauma, suicide, loss of family and friends, violence, loneliness, social isolation and sleep disruption. And children and adolescents are not the only ones affected: caregivers and frontline workers who may also be caregivers will also be affected.

However, the COVID-19 pandemic also offers opportunities for positive coping and resilience. While aspects of the pandemic may be associated with increasing rates of mental ill-health, other features such as school closures reducing academic and social pressures as well as increased time with family, may have a positive effect instead.

While there is no magic formula to address the impact of humanitarian crises, including COVID-19, on youth mental health, proven and promising interventions are available to mitigate its impact. These include single interventions such as early screening or diagnostic tools, parenting programmes, stepped care approaches, community engagement, online platforms and clinical care. Initiatives that combine these interventions with other health care interventions and through common delivery platforms such as schools and home visitation have also shown promise to help accelerate positive youth mental health care and should also be integral features of the youth mental health care response. And importantly, the most vulnerable children and adolescents should receive particular attention through screening and targeting of interventions.

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* As used in this report, Mental health screening is the assessment of an individual's emotional health by a trained professional using a specified method or process to determine or diagnose whether a person may be at risk for a mental health concern or disorder. Mental health screenings allow for early identification and intervention if needed. Early identification and treatment leads to better outcomes. Early treatment may also lessen long-term disability and prevent years of suffering.

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It is equally vital to listen to young people as a part of our evidence gathering on youth mental health.
The voices of young people serve as a vibrant guide to their experience, their solutions and their priorities.
There is sound evidence that their voices can be captured and integrated in a meaningful way into our
responses. And it is therefore of paramount importance that we not only use our explicit evidence on youth
mental health but also engage young people, listen to them, learn from their lived experiences and integrate
their views in programmes, policy and advocacy on youth mental health in times of crisis.

**Further research is required to understand the literature that has emerged over the past year since
the pandemic was declared,** and to blend this with insights from this study. It is equally vital to listen to
young people, as well as act. Our study sought to go as far as possible in curating evidence on the impact of
past crises on youth mental health. Even then, we were challenged by the paucity of past evidence on this
issue for young people in general, and particularly for children of younger ages. The COVID-19 crisis itself has
generated many studies on youth mental health, mostly from the global North but increasingly also from the
global South. These studies need to be curated to understand the specific impacts of COVID-19 and how to
mitigate the mental distress and conditions and any long-term effects of the pandemic.

CHAPTER 1 Overview

In December 2019, the World Health Organization (WHO) made the first official announcement of a new novel coronavirus - Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) - and in February 2020, designated the disease caused by SARS-CoV-2 virus as COVID-19 (shorthand for Coronavirus Disease). Following the rapid and unprecedented global spread of COVID-19 worldwide, on 11 March 2020 the WHO declared it a global pandemic. COVID-19 is having a profound global impact at all levels of society, including children and adolescents.

One area of child development that is most affected by the pandemic is child and youth mental health and well-being, the umbrella term used to describe psychosocial and emotional well-being. Although the term 'youth mental health' by itself does not have either a negative or positive connotation, it is used in reference to mental disorders among children and adolescents such as psychosis, anxiety, depression and eating disorders. Concern for youth mental health was rising before the pandemic, with global prevalence rates of common disorders already very high. Although comprehensive data on mental health since COVID-19 struck is hard to come by, emerging data and studies suggest that the pandemic is exacerbating many common mental disorders. But caution should be applied to some of these findings, as mental health effects often take more time to become apparent and many of the current studies on COVID-19 impacts are methodologically weak.

In support of greater understanding of youth mental health, UNICEF Innocenti commissioned this report to explore how past crises affect children's social and emotional well-being.

This report has several related objectives:

- A **literature review examining the impacts of previous epidemics and pandemics on the mental health and well-being of children and adolescents**. This review serves as a guide to learning from the past and applying relevant elements to youth mental health during COVID-19, especially in the absence of comprehensive contemporary evidence (Chapter 2).
- An **additional literature review on the impacts of poverty, isolation, unemployment, non-attendance at school, community and family violence, and food insecurity on child and adolescent mental health and development.** Given the size and scope of this body of literature, the authors have not undertaken an in-depth review of individual papers, but have used adolescent views and existing reviews to outline potential impacts (Chapter 3).
- A **summary of promising responses** to support youth mental health in the COVID-19 era and help mitigate the short-, medium- and long-term impacts of the pandemic. This report uses evidence in Chapters 2 and 3 to present examples of interventions in Chapter 4 for conceptualizing comprehensive responses to support positive youth mental health during the pandemic.

Evidence presented here does not qualify as a systematic or rapid review. The authors instead consulted existing reviews to understand and adapt to the COVID-19 context for children. This report will be accompanied by a comprehensive systematic review being conducted by the UNICEF Office of Research, focusing on the impact of the COVID-19 pandemic on child and adolescent mental health across outcomes, age groups, and geographic contexts.

PANEL 1

The continuum of mental health

When considering mental health, it is important to differentiate between normal reactions to abnormal stressors (i.e. psychological distress), reactions that begin to impact on functioning (i.e. poor mental health), and cases of severe pathology (i.e. serious mental disorders). Mental health is therefore best conceptualized along a continuum. At one end of this continuum, we feel good and positive about ourselves, our relationships and our place in the world, and can cope emotionally with stressors, including the pandemic. Given the unprecedented nature of COVID-19 and the uncertainty of how it will evolve, emotional reaction to the pandemic is normal and does not necessarily signal abnormal mental distress.

As we move along the mental health continuum, young people may feel poorly with mood fluctuations and flat or manic mood (or both). Even further along, young people may experience more debilitating emotional stress from COVID-19, with the tasks of daily life becoming more difficult. There may be young people with pre-existing mental health conditions for whom these conditions have been or are being accentuated by lockdowns, non-attendance at school, or sickness and death of family members – and who will need additional support at this time. At the extreme end of the continuum are young people suffering from diagnosed severe mental disorders such as psychosis, which require significant additional support.

The imperative of viewing youth mental health within a continuum

Understanding mental health and well-being in this way is essential because it allows us to recognize and acknowledge everyday sadness, anxiety or stress that everybody experiences at one time or another – sometimes quite frequently – and to

Figure 1: Continuum of mental health needs

Psychologically healthy and mostly unaffected

Psychologically healthy but experiencing stress

New cases of subclinical mental distress

Existing and/or new common mental health conditions

Severe psychosocial disability

As we move along the mental health continuum, children and adolescents may feel poorly with mood fluctuations and flat or manic mood

distinguish these from more severe mental health conditions. Having a mental health condition or illness requires a diagnosis and is different from the everyday vagaries of mood. Feeling sad or anxious for a few days is not the same as having a diagnosed mental illness. Making this distinction is important for several reasons:

- Conflating normal responses to stressors with mental illness may lead to excessive medicalization and stretching the already limited mental health resources, particularly in low-income contexts.
- Mood fluctuations are part of perfectly normal processes of child and adolescent development. Seeing these fluctuations as disordered pathologizes typical human development and functioning;
- Many children and adolescents are resilient to normal life stressors and can rely on social support. Their initial response to a stressor such as COVID-19 may present as psychological distress, but with caregiver and family support their distress will not become chronic and manifest as a disorder. Focus must be on the group of children who do not adapt/respond to support, or do not have the requisite support network.
- Young people at different points may move back and forth along the continuum and will need different support according to their current position.
- With these considerations in mind, the next steps are to examine this global threat of the COVID-19 pandemic, explore its wide-reaching effects on mental health, and find pathways to guide provision and provide an informed strategy on youth mental health.

CHAPTER 2 Evidence review and learning

2.1 Introduction

The first step in gathering insights that can help inform the COVID-19 response is to look at previous epidemics, pandemics and other health shocks. While supplementing this with a rapid review of emerging literature on mental health and COVID-19 will be imperative, in the absence of data and research much of the pandemic's actual or potential medium- and longer-term impacts may be inferred from the evolution of previous health shocks.

To review the literature on health shocks and their impact on youth mental health, the authors undertook literature searches in Medline, Google Scholar and Cochrane Collaboration databases. Because of the large number of studies on HIV/AIDS compared with other risks and the broader discussion on the existing literature on impacts of adversities on children and adolescents, only systematic review literature on these topics were included.

Figure 2: Study inclusion and exclusion criteria

Study	Location
Pandemics and epidemics	Epidemics: Ebola, Zika, Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). Pandemics: HIV and AIDS, H1N1 and COVID-19.
Child and adolescent mental health	All diagnosis categories, including well-being and positive mental health aspects such as resilience and coping
Context	Global (high-, middle- and low-income countries)
Study type	Systematic and non-systematic reviews. Qualitative and quantitative primary empirical studies. Searches were undertaken in English but without language restrictions.
Study type exclusion criteria	Conceptual and theoretical studies. Studies that did not report on their methodology. Entire books. Academic theses.

All search results were reviewed, and relevant studies extracted and summarized. Keywords for each of the reviews were as follows:

- **COVID-19 and mental health** – COVID AND (child*OR adolescent*) AND (mental disorder* OR mental health OR psyc*);
- **Interventions for mental health in epidemics and pandemics** – Search terms included all interventions.
- **Disasters, child/adolescent mental health** – Disasters AND (child*OR adolescent*) AND (mental disorder* OR mental health OR psyc*);
- **Ebola and mental health** – Ebola AND (child*OR adolescent*) AND (mental disorder* OR mental health OR psyc*);
- **SARS/MERS and mental health** – SARS/Mers AND (child*OR adolescent*) AND (mental disorder* OR mental health OR psyc*);
- **Zika and mental health** - Zika AND (child*OR adolescent*) AND (mental disorder* OR mental health OR psyc*)
- **HIV and mental health** – HIV, child/adolescent mental health, interventions and systematic review

2.2 Literature searches

This section presents results for each of the searches in turn and then provides a summary of guidance from the existing literature base. Tables detailing all the results for each of the searches can be found in Appendices 1-6.

Of the searches we undertook in late 2020, only two crises types provided a substantive body of literature from which the authors were able to make broad inferences on youth mental health: disasters and HIV. Consequently, we describe only these in depth in this chapter, but refer to the findings from the other searches (Interventions for mental health in epidemics and pandemics; Ebola; SARS/MERS; Zika) in Panel 2.

2.2.1 Disasters and youth mental health

Disasters are defined as – often unexpected – events with large-scale primary impacts such as destruction, physical injuries or deaths, and often a range of secondary consequences such as poverty, property/financial loss, displacement of individuals and damage to health, social and physical infrastructure.[5,6] Most evidence focuses on natural disasters (e.g. floods, earthquakes), but also includes general humanitarian crises,[7] war/political violence,[8] terrorism,[9] famine[10] and mass shootings.[11]

Disasters can affect every aspect of children's lives --

Disasters affect a wide range of spheres of influence central to child and adolescent development in general, and their physical and mental health specifically.[12,13] This includes the individual and interpersonal levels – comprising the child's direct environment such as family and friends; the household and community levels – including the child's broader environment of schooling, health care access and contact with community and religious organizations, and neighbourhood and the parental workplace; and the structural and political levels, comprising the cultural, social, economic and political environments.

-- and have both short term and longer-lasting impacts

Because they cause such widespread disruptions to most or all of these levels, disasters may affect the mental health of children and young people in the short and long term, depending on – among other factors – their age/developmental stage.[14] For example, prenatal disaster exposure may be associated with higher risk of pregnancy complications and poorer birth outcomes[15] including slower foetal growth,[16] potentially due to reduced pre-, peri- and postnatal maternity services and high maternal distress. Prenatal disaster exposure has also been linked with child/adolescent mental health problems in the long term, including developmental regression, sleep problems, clinginess, separation anxiety, altered play, somatization/pains or aggressiveness.[17]

Furthermore, disaster exposure may also affect the development of skills and abilities critical for well-being in later life (e.g. emotion regulation, language), which commonly expand substantially at this age.[18] In older children and adolescents, disaster exposure has been first and foremost linked to the development of post-traumatic stress disorder (PTSD)[19] but also to a higher risk of externalizing and internalizing disorders,[20,21] physical health problems,[22] and poorer cognitive and social outcomes.[23] Less specific reactions also include withdrawal, sadness, decreased activity, poorer school performance, and preoccupation with/rumination about the disaster event. Notably, while children and adolescents

may initially appear carefree, they may experience losses and lack of structure/support over time and subsequently develop symptoms.[24]

Disaster risk factors for youth mental health are well established

A wide range of literature has established risk factors for mental distress – often PTSD – following disaster exposure; some of this literature may also be of relevance to COVID-19. Pre-exposure risk factors include female sex, pre-existing physical/mental health conditions, low socio-economic status, genetic risk,[25] disability/special needs,[26] prior trauma exposure, and living in countries with a medium or low (as compared with high or very high) human developmental index. Potentially

influential characteristics of disaster events are extent of exposure, life threat, witnessing injury/death, loss of a loved one, property destruction and exposure to toxic agents. In the aftermath of a disaster, outcomes may be determined by factors such as adverse parental and family behaviour (including effects of parental distress or poor coping),[27] media exposure,[28] lack of basic provisions (food, sanitation, prevention of infectious disease) and exposure to secondary adversity.

Cultural influences may determine the relative importance of different risk factors. Resilience factors are studied less frequently but may include provision of mental health programming, positive parenting, presence of social support[29] and post-traumatic growth.[30]

Addressing youth mental health after a disaster requires a dual approach: clinical assessment of exposed or at risk children and adolescents combined with broad population screening

In general, the literature proposes a dual approach be taken to assessing children's and adolescents' mental health needs after disaster, combining periodic screening of the broader population with more in-depth clinical assessments of those directly exposed and/or at high risk.[31] Screenings should be rapid, consider effects of the disaster in general and on the child specifically, and briefly index central risk factors and mental health conditions, and resources available. Ideally they are to be conducted in settings that reach a wide range of children and adolescents, such as schools or health

care facilities.[32] Full clinical assessments may cover a range of disorders of interest (e.g., PTSD, major depressive disorders, behaviour problems), but could also assess constructs such as available social support, coping strategies and access to social provisions, alleviating secondary difficulties.[33]

Combined assessments of children and parents may be advantageous in obtaining detailed insights into children's experiences, as well as objective assessments of their behaviour and responses and information on their background/psychiatric history. Cultural sensitivity is required, with diagnoses and risk factors potentially differing across populations.[34] Relevant screening and clinical measures are reviewed in various useful papers referenced here.[35,36] Information obtained from screenings and assessments should be used to carefully plan interventions, considering the local context, needs, urgency, and short- and long-term perspectives.[37]

Interventions for disaster-related youth mental health are diverse, with broad dissemination favoured at points of frequent access for children and clinical resources saved for most at risk

Diverse types of interventions in support of youth mental health have been applied in disaster situations. These vary in terms of *recipient* (universal versus specific/clinical samples); *timing* (preventative; early or long-term after exposure); *provider* (mental health professionals versus trained community members/teachers/para-professionals); *age focus*; and *income-settings* (high-income countries [HICs] versus low- and middle-income countries[LMICs]). Clinical resources should be saved for those most at risk.

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Broad, universal interventions disseminated through points of frequent access for children and adolescents (e.g. schools) may be suitable to increase readiness and resilience pre-exposure, as well as to address mild problems following disasters.[38,39] A recent review of school-based programmes carried out by teachers or para-professionals for children and adolescents affected by conflict or natural disasters showed that they can be effective.[40]

Trained personnel, early intervention and parental/family support are important factors in enhancing outcomes for disaster-related youth mental health

Another review that clustered all psychological interventions and aggregated results showed that recipients fared much better than control or waitlist non-recipients.[41] This analysis suggests that individual therapy showed greater improvement in individuals in comparison to those receiving therapy as part of a group. However, group receipt was still effective and may be a more viable option in terms of cost. Not surprisingly, these reviews suggest that trained mental health providers may be more effective than other types of providers. Involving parents to support enhanced outcomes and early intervention was recommended. The literature on war, migration, refugees[42] and unaccompanied minors[43] may also provide insights into the high mental health burden and long-lasting effects.

Responses should strive to maximize the use of available resources and existing systems

Generally, the literature suggests that responses should maximize the use of existing systems, such as primary health care services and schools, that have a broad reach, are commonly trusted and can be used without stigma.[44] This is especially the case in LMICs where resources may be limited.[45] Inter-agency cooperation is key in using available resources as efficiently as possible, and a common coordinating agency/office may help to achieve this.[46] Notably, WHO[47] and the United Nations Office for Disaster Risk and Reduction[48] have published relevant frameworks to guide mental health intervention efforts following disaster. A summary of a selection of reviews suggesting guidelines for various levels of interventions is presented in Appendix 3 (excluding reviews solely focusing on preparedness interventions as these are less applicable to COVID-19).

2.2.2 HIV and mental health

By far the largest body of literature is on impacts of interventions for children infected or affected by HIV. The authors therefore confined to systematic reviews, which generated 22 abstracts. Hand searching for relevance and reference follow-up provided 16 relevant publications. Relevant reviews are summarized in Figure 4, with guidance on implications for a COVID-19 response. The findings are summarized in Appendix 6.

Some similarities exist between HIV and COVID-19, and these may provide insights into the impact of the pandemic on youth mental health

There are some similarities between COVID-19 and the HIV epidemic. Both are transmittable viruses with global reach, and to which initially no preventive or treatment intervention was available. The two diseases also have common threats to human well-being including potential mortality, illness, contagion, psychosocial ramifications, magnification of impact on already compromised or challenged groups, economic shocks, health and social care needs, and specific impacts on children.

There are also significant differences – at least currently – between COVID 19 and HIV on such issues as stigma and disclosure, intergenerational effects, susceptibility, immediacy of impact, mode of transmission (with enormous behavioural ramifications) and reach and scale. Despite this divergence, learnings from HIV may be useful in planning responses to COVID-19.

The HIV literature provides insights into six delivery platforms for programme implementation – family and community; schools; primary health care; specialized care; legislation/policy; and structural platforms. A summary of interventions may provide insights into resources to pursue in the COVID-19 response.

Family and community approaches and school-based interventions have been critical in addressing the HIV crisis and may resonate strongly with responses to the COVID-19 pandemic

One of the key lessons from the global response to the HIV epidemic to impact on children and adolescents in recent decades is the importance of *family approaches*.[49] Children living in families draw from the strengths of this context but are also affected by the burdens (e.g. mortality, morbidity, economic disruption, stigma, etc.) that HIV exerts on the family.[50]

Community responses often include the use of community-based organizations (CBOs).[51] Home visiting is an effective intervention[52] but can be limited by resource availability and quality. Structured lay visits using evidence-based curricula and parenting groups have been well evaluated and have shown short-[53] and long-term benefits.[54]

Social distancing and resources may limit such interventions while the COVID-19 pandemic persists, but variations and adaptations may be possible.

There is solid evidence that *schools* provide a good platform for general or specific intervention types.[55] Interventions delivered via schools have the benefit of being available to children within most communities but may not include out-of-school children. *Healthcare facilities* can serve as another forum for interventions, though they are often dependent on resource availability, staffing, structure and the degree to which attention is paid to mental and physical health. *Stepped care models* to encompass both community and facility resources have been tried successfully[56] and may form an important blueprint for COVID-19 responses. The lessons include the need to screen and seek out where individuals are experiencing problems, and to react in prevention and intervention modes. *Integrated approaches* show the best traction, although an emerging science is still exploring the best ways to integrate.[57]

2.2.3 Other epidemics and mental health

The review also examined literature on the impact of other recent multi-country health crises on youth mental health. These included generalized epidemics and pandemics, Ebola, SARS/MERS and Zika. The body of literature on these crises is thin, with only a few papers focused on child and adolescent mental health. It is therefore not possible to derive many concrete lessons from this section of the review (see Appendix 2 for full details of each study). The few findings available are summarized along with those for disasters and HIV in Panel 2.

PANEL 2
Learning from the HIV crisis

The reviews underline the importance of quick response and the need for targeting and guidance on harnessing external provision. Below is a further summary of the key findings.

Mental health burdens are high and have often been neglected. The learning from HIV suggests that COVID-19 interventions should anticipate mental health responses and provide for these. People with pre-existing mental health problems may be at elevated risk. Moreover, mental health problems may affect behavioural responses. For example, among individuals with HIV, depression may affect treatment adherence. These insights may well be generalizable for COVID-19 responses.

Even when programmes are effective, dose, timing and mode of delivery must be considered. Reviews showed the merit of using already adapted and tested interventions and

resources rather than inventing new resources. Quality requires training, building skills, infrastructure, monitoring and using a variety of responders (family, staff, peers).

A wide range of **interventions** have been shown to reduce mental health burdens, and these may form the basis for adaptation and informed provision for COVID-19. Some, such as home visiting, may need to be adapted to the infection control needs of this new pandemic. Responses and adaptation are hindered by stigma and discrimination and a learning from the HIV epidemic is to be aware and ensure **stigma** is avoided. Furthermore, **risk taking** is interwoven with understanding pathways of effect, and this should be adapted to the COVID-19 response.

Family-based responses formed the core of provision for mental health challenges related to

HIV, and such learning should be harnessed. The review revealed that family-centred care is essential in the HIV response and that a focus on communication between caregivers, health providers and children and adolescents has been key to supporting child and adolescent mental health. Families can be helped to have open communications.

Virtual platforms offer huge potential to reach large numbers and hard reach groups, but at the same time the lack of access to internet and cost of data may also limit accessibility. Evidence shows that mental health interventions can be delivered virtually using a variety of technology platforms. However, attention to content, engagement, cost, supervision and quality is essential – particularly in terms of reaching the most vulnerable.

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There is a need for contextually relevant age-sensitive interventions, capacity building in mental health, community involvement and looking to legal and policy provisions. Tailoring, attention to culture and subgroups, and quality provision are stressed. The learnings from HIV suggest that **disclosure** is important, with good models to facilitate this. Fully open and structured communication is important, as secrets and untruths when dealing with children and adolescents can cause problems later.

Preparation time and duration of the pandemic are factors. The ongoing nature of the pandemic allows some room for preparation – based on the premise that it is never too late. Existing resources that are well established may provide a good vehicle for intervention, with the advantage of infrastructure and functioning procedures. Responses need to focus on the short- and longer-term effects.

Literature highlighted the significant and interconnected mental health implications relevant for children. For example, consequences of isolation on adult mental health may also extend to children. Separation may have diverse consequences. The HIV literature provides broad ranging, evidence-based insights into mental health considerations, potential interventions and conceptual pathways, showing the interconnectedness of certain behaviours and conditions. These can provide a basis for informing the COVID-19 response and also potential infrastructure platforms that can be adapted.

Research and evaluation was often lacking, itself a learning point for COVID-19.

CHAPTER 3 Direct impacts on child and adolescent mental health

3.1 Introduction

The literature review of health shocks and their impacts on child and youth mental health has revealed some learnings but also highlighted a massive gap in the evidence. But there is substantive evidence that COVID-19's biggest impact on children is coming in the form of its impact on their socioeconomic environment – which includes such factors as access to social services, household poverty, ethnicity, social support, and mobility restrictions. In Chapter 3 we examine the literature on the impact of these factors on child and youth mental health. Given the nature of this rapid literature review, a detailed systematic review of all these lessons is simply not possible; but a broad review may provide informed insights into anticipated impacts and a summary of lessons that can provide guidance for a child- and adolescent-focused strategic response.

3.2 Anxiety and depression

Anecdotal and emerging evidence suggests rising anxiety and depression among children and adolescents related to the COVID-19 pandemic

Like most severe risk events, the current COVID-19 pandemic is likely to have a significant impact on mood. A recent review[58] draws attention to the fact that depression is a common outcome of severe events, including disasters, terrorism, and political violence, across the age spectrum, and it appears to endure in the longer term.

There is already emerging evidence, robust and anecdotal, of elevated anxiety during the COVID-19 pandemic,[59] with high numbers in the general population rating the psychological impact as moderate to severe. Data on children and adolescents are few, but anecdotal and emerging evidence suggest their rates of anxiety and depression are also elevated. For some children, however, even if immediate mental health problems are not apparent, these may emerge in the longer term – sometimes many years after the experience. Those with pre-existing problems may be more vulnerable.

For further insights, the authors explored the systematic review literature addressing anxiety and depression prevention or reduction. We found several reviews on specific anxiety-provoking situations (such as pre-surgery, dental treatment, radiotherapy) as well as more generalized interventions. Most literature examines anxiety and depression in the same analysis. These are summarized in Appendix 8, and a range of effective interventions are outlined.

A key finding from the systematic reviews is the link between mental health and risky behaviour. These should be noted in the COVID-19 response to ensure that other risks do not worsen. For example, depression is commonly associated with risk-taking behaviour, risky sex, alcohol use and initiation of other substance use.

> *Sometimes I sit in a quiet corner and then I cry. Then I try and gather my thoughts 'ok, fine…you need to man up, you need to face this, even if you face it alone, you need to face it…*
>
> – Young man, South Africa

Evidence on anti-anxiety and anti-depression intervention is strong, with targeting favoured, a full programme of interventions preferred to brief ones, and promising digital applications

The literature on interventions for anxiety and depression is quite comprehensive, with good evidence of interventions for preventing and ameliorating both anxiety and depression in disparate settings. The studies suggest that interventions are not confined to mental health professionals and can be delivered by lay or trained workers, teachers or parents. They also show the importance of targeting those most in need. An emerging theme in the literature was the benefit of targeted versus universal provision, which would suggest that screening and identifying a variety of potential risks may help with such targeted approaches.

The reviews also point out that programme content is important and duration must be considered, as brief interventions (one-off) are less effective than a full programme. Supervising those delivering the intervention is important as is the skills base of the work force – suggesting the need for training, feedback and supervision. There is also solid evidence on the use of digital-based interventions, but many of these require evaluation before being identified as a good practice. The form of the

> **I would never send people to the street to kick people. Because soldiers are being sent to the street… if they see anyone in the street they kick them. That's not a good idea.**
>
> – Young man, South Africa

intervention may matter with a variety of delivery platforms such as play, dialogue, physical activity, cognitive behavioural therapy, virtual scenarios, SMS and text messages, and skill-based learning. Many of the reviews revealed a focus on older children with much less guidance for younger children.

3.3 Trauma

COVID-19 may be increasing the numbers of traumas or trauma-like experiences that children and adolescents experience

A trauma is commonly defined as an incident that causes significant levels of distress in an individual and that meets the DSM-V criteria for a traumatic event, namely exposure to death, or a threat to the life of the self or others.[60] The COVID-19 pandemic may increase the chance of exposure to traumatic events in children and adolescents in various ways: severe physical reactions; traumatic stress due to mobility restrictions; or concern either about their own or others' health.[61] Such challenges may have been further aggravated by media reports containing graphic depictions related to death and suffering, which have recently been recognized as a potential indirect source of trauma, though the effects may be less strong than for direct exposure.[62,63]

With COVID-19 infection numbers still rising, it is increasingly likely that children and adolescents will be exposed to pictures and verbal accounts from their own countries, potentially increasing the potential for trauma at the primary or secondary level. Secondary traumatization encompasses the broader effects of COVID-19, including exposure to violence in the home or the community, witnessing suffering in the community (e.g. as a result of poverty), or exposure to extreme events such as human trafficking. Thus, various potential sources of trauma exist in the COVID-19 environment.

Trauma exposure can set back child and adolescent development in the short and longer term, although most young people are resilient to many traumas

Trauma exposure can disrupt children's cognitive, emotional, behavioural and social maturation.[64] Consequently, trauma exposure in childhood and adolescence has been linked to various poorer mental health outcomes, including PTSD, but also higher chances of internalizing and externalizing problems.[65,66] Moreover, trauma has been associated with lower life satisfaction, poorer physical health and worse educational outcomes in the long term.[67,68,69] However, only a subset of children and adolescents develop such difficulties, with many showing relative resilience to trauma exposure.[70]

Cognitive behavioural interventions have proven efficacious in addressing trauma exposure in children and adolescents, and may prove useful in addressing COVID-19 related youth trauma

There is a considerable evidence base evaluating psychological support interventions for those experiencing trauma generally,[71] though this is not always disaggregated by age. Systematic review evidence confirms the efficacy of cognitive behavioural interventions. A systematic review confined to studies with children[72] in 51 trials endorsed the importance of cognitive behavioural interventions but cautioned about the size of the effect and the longer-term sustainability. An overview review with mixed populations that did disaggregate by age found only four out of 36 studies concentrating on children and a further three studies including children but with poor-quality evidence for these age groups. [73]

Beyond the clinical context, there is also evidence that it may be possible to train teachers and/or lay workers to deliver universal coping interventions after exposure to stressful/traumatic events.[74] Furthermore, several programmes have successfully aimed to engage parents in supporting their children after trauma,[75,76] including via web-based interventions[77] and stepped care approaches.[78] However, such evidence largely stems from HICs and sometimes from events qualitatively different to COVID-19 (such as hospitalizations, road traffic accidents) and thus may require substantial adaptation, especially for LMIC settings.

> " *...I am not okay because all my things and life is on hold....*
>
> – Young Male, Eastern Cape

3.4 Suicide

There is concern that suicide risk, particularly among adolescents, may heighten as the pandemic persists because it exacerbates many drivers of suicidal behaviour and limits time with support network

Suicidal behaviour is known to vary with age, with adolescence a particularly risky time. While the causal processes leading to suicide and suicidal ideation in young people are complex and multifactorial,[79] the changes and conditions around COVID-19 are likely to have an impact on the mental health and associated increased risk of suicide for young people during the pandemic

and its aftermath.[81-86] There is growing evidence of young people with particular conditions being at elevated risk of suicidal ideation exacerbated by the effects of the COVID-19 pandemic; for example, youth with clinical high risk of psychosis due to loneliness or adolescents with psychiatric disorders are more vulnerable on account of changes in their management and care.[87,88]

Furthermore, the formal and informal support networks of potentially vulnerable young people may be affected by lockdown regulations, leaving them more susceptible to these effects even if it is only the perception that services or networks would be overwhelmed that may discourage them from seeking much needed support.[89,90]

Past evidence shows that suicides often rise during epidemics and pandemics –

There is evidence of a rise in suicides during epidemics and pandemics, for example, among the elderly in Hong Kong during the SARS epidemic in 2003[91] and among people of all ages in the USA during the 1918–1919 influenza pandemic.[92]

During the current pandemic, individual countries have reported changing rates of suicide, although most of these are reported without a focus on children and young people.

- An analysis of 69 suicides in India across all age groups shows various drivers of suicide during the COVID-19 outbreak, with causality being most often attributed to fear or anticipation of COVID-19 infection, followed by financial crisis; loneliness; social boycott and pressure to be quarantined; COVID-19 work-related stress; inability to return home due to lockdown; and unavailability of alcohol. [93]

- In a UK study looking at abuse, self-harm and suicidal ideation during the COVID-19 pandemic, 29 per cent of 18–29-year-olds surveyed had self-harm or suicidal thoughts.[94] In another UK report[95] looking at child suicides as recorded in the National Child Mortality Database, the rate of likely suicides appeared to have increased during lockdown, though numbers were too small to reach definitive conclusions. Among the likely suicide deaths reported after lockdown in this surveillance report, restrictions on education and other activities, disruption to care and support services, tensions in the home and isolation were thought to be contributing factors.

--however, this is not always the case, and there is evidence that some countries are experiencing lower rates of youth suicide as lockdowns and other policies may be reducing some risk factors

While aspects of the pandemic may be associated with increasing rates of suicide, other features of the current crisis – such as school closures reducing academic and social pressures on adolescents, particularly for those suffering from bullying or having difficulties with school attendance – may reduce the exacerbating factors around suicides. Some countries have reported a decrease in suicides over the period of the pandemic.[96] Evidence has shown that preventing and mitigating childhood adversities has the potential to reduce suicidality among adolescents who have already been exposed to adversities and that effective mental health services can protect against future suicidality.[97]

Remote and telehealth services are among the promising interventions for suicide prevention during the COVID pandemic

Evidence-based interventions that should be considered in the COVID-19 response include developing remote and telehealth services. This will of course require adjustment and training of the workforce. Existing helplines have been shown to be effective and may need adjustment for COVID-19. Many are targeted at adolescents, but such resources for younger children are fewer. Some mental health centres reduced activity during lockdown, while others (e.g. in Germany)[98] report an increase in teleconsultations. There is likely variation in potential for different countries to reach those most in need through telehealth, and often large disparities within each country based largely on differential access to digital resources. Targeted support for at-risk populations and continuity of support is essential for those already under care, those with a history of previous suicide attempts, and those with specific vulnerabilities.[99] An awareness of the burdens of the pandemic and tools[100] to help families support young people have demonstrated preventative effects.[101] Financial stress and lack of employment are established risk factors for suicide. These are probably more relevant for older adolescents than younger children, yet remain a critical priority consideration.[102] In addition, surveillance data

should be ongoing to target responses and to gather ongoing insight into all suicidal behaviour, including ideation, self-harm and suicidal acts.

3.5 Loss

Mortality and morbidity related to COVID-19 are likely to have far-reaching mental health implications for children and adolescents

The toll of death and illness from COVID-19 is high and far-reaching in many countries, and its effects on children and adolescents are likely to be marked. Emotional reactions to death and illness are part of normal human behaviour; for young people experiencing loss and the illness of family and friends, the mental health implications will require consideration of the range of emotional reactions and coping strategies in order to distinguish profound or pathological responses that may need specialist understanding and care. Attention needs to be paid to how bereavement occurs within the pandemic and some of the constraints on hospital visitation, final goodbyes, funeral arrangements and the processes of mourning – all of which may be disrupted and more difficult during this time. Such experiences may interrupt the ability of children to carry out certain ceremonies or visits or to be comforted by family and friends at difficult times.

The loss, illness or vulnerability of family members due to COVID-19 may have profound effects on children and adolescents

In many LMICs, particularly those heavily affected by HIV, primary caregivers are often grandparents. In the COVID-19 pandemic, the elderly population are most at risk of contracting the disease and dying. The implications of these two factors for countless children across the world where grandmothers have stepped in to fill caregiver

> **All my plans are cancelled which means I have nothing to look ahead to and you find yourself trapped in a void of your own thoughts**
>
> – Anonymous, UK

gaps resulting from previous epidemics, in cases where parents have migrated in search of work, or simply where grandparents are primary caregivers for other reasons, will be profound for children and adolescents.

The loss or morbidity of caregivers and family members from the pandemic has the potential to undermine the mental well-being of children and adolescents both now and in future. Consideration should be given to many children who reside in multigenerational families, which are prevalent in many countries in all income contexts. Guilt, concerns and worries surrounding different levels of vulnerability, and a diverse array of transmission, patterns of illness and constraints may be related to the needs or vulnerability of older members and can affect the child.

Children and adolescents are often not spoken to about loss in order to 'protect them'. But evidence shows that imparting news and talking to children about death, loss and bereavement are key factors in more healthy adaptation.[103] Speaking to children about death depends on age and age-specific abilities. The importance of communication in the COVID-19 epidemic has been explored,[104] drawing attention to communication needs; the literature on psychological first aid; and the role of caregivers and family in normalizing experiences, setting examples of emotional expression and dialogue and cautioning when child and adolescent anxieties and concerns manifest in the form of challenging behaviour. These authors also point out the importance of understanding children's conceptual understanding level as determined by their age. This is relevant across the spectrum, from facing life changes due to COVID-19 to grasping illness and death among those they know. For example, developmental stages of children may affect their understanding of the meaning of death.

Lansdown[105] showed how children slowly gather insight into the meaning of death, understanding how this is permanent and irreversible.

> *"We need to just stay at home, be in our houses. As soon as you feel anything strange, sore throat or anything you need to run and go to the clinic. Even when you get to the clinic when you are there you will be with people who are sick, you are just putting yourself in a worse situation.*
>
> – Young woman, South Africa

3.6 Mobility restrictions

Mobility restrictions are causing increasing frustration and mental health challenges for adults, children and adolescents

The public health response to COVID-19 has seen most countries imposing some form of self-regulated isolation, social distancing and lockdown with varying degrees of loss of freedom of movement. Closures of schools, creches and preschools have limited social contact at key developmental periods in the lives of children and adolescents, with implications for their mental health and well-being. Leisure and learning through in-person play activities have also been severely curtailed.

Adults have also suffered from mobility restrictions; quarantine in adults has been shown to be associated with anger, confusion and distress.[106] Given that families are isolated, it is important to understand that children and adolescents

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will be living with and under the care of adults who are experiencing these emotions, as well as experiencing their own emotional reaction to mobility restrictions and other issues related to the COVID-19 pandemic.

The conditions of isolation contribute to an environment that presents concerns about possible infection, lack of stimulation and extreme boredom, frustration and annoyance, compounded by financial challenges and reduced access to daily necessities. There is solid evidence (presented later in this report) that poverty and other vulnerabilities enhance the likelihood of child mental health problems.[107]

Studies from mostly affluent regions or countries show that there is a strong relation between isolation and loneliness, and elevated rates of anxiety and depression among adolescents

A recent rapid systematic review identified 63 studies on the impact of social isolation and loneliness on mental health outcomes when children or adolescents experienced isolation but had previously been healthy. This review, published in June 2020, emerged from 61 observational studies, 18 longitudinal studies and 43 cross-sectional studies. These were all concentrated in four affluent countries/region -- the USA, China,

Europe and Australia – and therefore provide insufficient coverage of LMICs. Furthermore, as most of the data was from adolescents, the studies provide few insights for younger children.

From these studies, the authors noted a relationship between loneliness and consistent elevated risks for depression and anxiety. They often observed stronger associations for females. Where data were longitudinal, they concluded that there were mixed findings on the endurance of depression and anxiety over time.

The studies also differentiated between peer loneliness and family-related loneliness and advised that the duration of isolation was a key

> *Is not having purpose. I don't have anything to keep me, I don't know how to describe this… now I am just sitting at home and this is killing many things inside me, it's killing the drive I had inside me, so my biggest challenge is that, I don't feel challenged to study when I am just sitting at home and it's very stressful.*
>
> – Young Male, Eastern Cape

factor.[108] They also described other mental health considerations identified in some studies, such as internalizing symptoms and suicidal ideation. There was very little evidence, however, concerning isolation as a result of quarantines around infectious diseases, with no real precedent to COVID-19. Furthermore, across the global literature they identified only two effective interventions (see below).[109,110]

3.7 Loneliness and social isolation

Public health measures to curb the pandemic are intensifying feelings of loneliness and isolation among young people

Loneliness is defined as a painful feeling when the actual and desired social contacts are not aligned.[111] The COVID-19 pandemic is likely to trigger specific experiences of loneliness for children as a result of government lockdown measures, and restrictions on social interaction through closure of arenas as schools and cultural or leisure venues, or informal activities such as visiting friends and family, playing outdoors, and hanging out or meeting with friends in public places. Such enforced isolation is likely to be particularly hard on adolescents, as they are going through a time when social reinforcement and networks are vital to their development and growth.

The systematic review cited in the previous sections (Loades et al. 2020) found only one study on loneliness from a previous epidemic and this had an overall weakness in study design. This study examined the relationship between mental health problems in otherwise healthy children and adolescents and loneliness, with an attempt to relate these findings to the global COVID-19 experience.[112] Another study from China suggests that gender differences exist, with a tendency for girls to experience loneliness associated with

depressive symptoms, while boys are more at risk for raised anxiety.[113]

Isolation among young people is still very poorly studied, even though it is intuitively known to bring many social disruptions to children and adolescents

Isolation brings with it many social disruptions. This is compounded by face mask wearing, which is generalized and, in many countries, a relatively new phenomenon. Masks may make it difficult to read facial expressions[114] and can disrupt social interactions. Care environments may change either through sudden disruptions, such as school closures, or through changes in settings, such as when institutionalized children are suddenly sent home.[115] Social access may be suddenly disrupted. Isolation from wider family and grandparents, or even from parents when children do not co-reside, may affect their previous care provider patterns. Social relationships, such as friendships, peers and romantic encounters, may be dramatically affected. This may hamper the growth of socialization in younger children, and important social ties for others.

The length of isolation may be important to consider as longer experiences of loneliness may be associated with later mental health problems,[116,117] though the evidence is mixed.[118]However, existing evidence comes from studies where the whole community was isolated so that the loneliness experience may be general. In some studies, loneliness was also found to be related to anxiety in the longer term,[119] but this was not universal.[120] The conclusions of this review caution that social distancing and mobility restrictions have the potential to elevate mental health problems, long-term depression, anxiety and traumatic stress.

Effective interventions to address loneliness are few and far between, but peer and school-focused approaches may show promise

One study reviewed by the authors examined interventions using peer mentors.[121] However, the recipients of the intervention were those experiencing social isolation as a result of bullying, which may not be the same kind of isolation experienced in the COVID-19 context. Community mentors were recruited, trained and supervised and engaged with the youth approximately 4–6 hours per month, according to a jointly generated action plan. A second study looked at an intervention in Norway that used a school-wide approach, with limited efficacy. The target recipients were those with mental health problems and a high chance of school dropout. Here again, while the study population were isolated socially, this was not comparable to the social isolation experienced as a result of COVID-19. One finding from the study was the importance of a school-wide approach to addressing loneliness and isolation.[122]

" …everyone is here at home, so watching your favourite shows on tv it's a struggle… my little brother usually wins so we have to watch cartoons the whole day

– Young woman, South Africa

3.8 Caregivers

Caregiver mental health has a strong influence on child mental health, with children of depressed caregivers more likely to experience their own mental health issues

For children and adolescents, caregiver mental health is a key determinant in their own well-being. Particularly for younger children, but also for adolescents, caregiver mental disorder is a multigenerational disorder in that its effects are felt by all members of the family and not solely by the caregiver. Increased caregiver depression or anxiety in the perinatal period as a result of COVID-19 for example, is likely to have an impact on the emerging social capacities[123] of infants and young children who are vulnerable to early disruptions to interactions with their caregivers.[124] Preoccupation with COVID-19 and its economic aftershocks may result in differences between attentive and non-attentive care, and this may have detrimental effects on children.

Adult mental health distress can have strong direct or indirect effect on the child.[125] Children have been shown to be sensitive to adult trauma exposure and mental health difficulties,[126] and this can endure over time.[127] In the COVID-19 era, child and adolescent mental health should be considered alongside that of adults, with the preferable adoption of family-oriented approaches. In addition, the longer-term effects on health and behaviour may need to be monitored and mitigated.[128,129]

There is evidence that children of depressed caregivers are more likely to experience behavioural problems[130] and childhood depression,[131] while caregiver anxiety increases the risk of behavioural problems in early childhood.[132,133] There is also evidence for risk of spontaneous abortion and

preterm labour in the context of high levels of stress and anxiety during pregnancy.[134] Children and adolescents are, for the most part, firmly ensconced within family systems. As such, attending to the mental health of caregivers through, for example, programmes delivered by community health workers such as Thinking Healthy,[135] are key contributors to improved child and adolescent mental health.

3.9 Neuro-psychiatric effects

Very little is currently known about the acute and longer-term neuropsychiatric effects of COVID-19 (caused by the SARS-CoV-2 virus) among individuals who contract the disease. However, based on experience with previous zoonotic virus epidemics, such as SARS or MERS, it is likely that SARS-CoV-2 can affect the brain or give rise to immune responses with negative effects on brain function and mental health.[136] Based on evidence from these previous epidemics, we should be prepared for longer-term fatigue, psychological disorders and neuropsychiatric syndromes among children, adolescents and adults who have recovered from COVID-19.[137]

Early emerging evidence shows high levels of central nervous system symptoms and disorders among individuals with COVID-19, especially among patients with severe disease.[138] These include: headache, nausea, dizziness, loss of taste and smell, numbness, sleep impairment, confusion and impaired consciousness.[139] These have been found to co-exist with psychological disorders,[140] and initial evidence shows, for example, associations between smell and taste loss, increased immune response, and depressed mood and anxiety.[141,142] However, the causal mechanisms are still not clear. The interaction between these potential biological factors and COVID-19-related social and economic stressors affecting psychological well-being need to be better understood; their combination could heighten mental health risks, also considering that factors such as social isolation could lead to neuroendocrine-immune changes.[143]

While no empirical evidence specifically relates to adolescents, risks for this population may be greater since adolescence is a key period during the life cycle for brain development and self-regulation, and the time when most mental health disorders develop.[144] Children and adolescents may be at higher risk of sleep disorders and their effects on health and development.[145] There is also evidence of longer-term adverse health, behavioural and cognitive effects of infection and inflammation during childhood and adolescence, including from HIV infection.[146] These may be greater in low-resource settings if combined with poor nutrition and exposure to other environmental stresses that can adversely affect neurodevelopment.

Longitudinal research is urgently needed to understand the potential biological causes of poor mental health linked to COVID-19 in the general population and specifically among children and adolescents, how these may interact with social determinants, and whether specific protective factors can mitigate their negative effects. Moreover, more effective screening and preventative and therapeutic interventions are needed. A suggestion advanced for neurodevelopmental and psychiatric screening strategies among high-risk adolescents in LMICs is to include these measures in national or regional surveys to direct funding to these assessments and generate knowledge in this area. Social interventions should build protective mechanisms shown to render adolescents more resilient to adverse impacts of inflammation and other stressors; these include self-esteem, better

cognitive ability, better caregiver relationships and caregiver mental health, education, health care, peer groups and social support.

Lastly, a combination of rehabilitative and psychosocial interventions should ideally be available to affected individuals to mitigate long-term health effects.[147] However, this may be challenging in low-resourced settings and with social distancing restrictions. Family telepsychotherapy, including virtual problem-solving and parenting training, has been shown to be effective and acceptable for children with neurological conditions.[148] For families with high-risk cases and without access to internet or phone technology, the only feasible option may be community social outreach initiatives;[149] for example, social workers, counsellors or community health workers could visit households or meet in a safe space in the community where physical distancing and other safety measures can be maintained.

3.10 Other socioeconomic factors

The early waves of the COVID-19 pandemic have had enormous economic and livelihood effects. Stressful adverse experiences place children at risk of developing mental health problems during childhood and later in adolescence and adulthood.[150] This table details groups of children who are likely to be more at risk from developing mental distress during the COVID-19 era.

- Pre-existing mental health problems.
- Experiencing hunger or food insecurity
- Already vulnerable groups (such as those made vulnerable by poverty, disability, gender, violence and socio-economic status), minority groups, migrants, refugees, institutionalized children and street children; children of vulnerable adults should not be overlooked

- Recovering from pre-existing conditions (such as cancer treatment) or living in a home with an adult who is particularly vulnerable
- Living with disabilities
- Experiencing repeated exposure to multiple stressors – even quite resilient children may waver as stressors accumulate
- Exposed to violence, either pre-existing, triggered or exacerbated by the COVID-19 pandemic
- Experiencing extreme shocks including conflict.

These vulnerable groups must be viewed in parallel with drivers of vulnerability. Migrant children who do not have fluent language to access and fully understand both the news and the guidance are vulnerable. Those in unstable housing may be particularly vulnerable. Food insecurity is a key driver of vulnerability. People with disabilities, including children and adolescents with disabilities, are likely to experience more severe secondary impacts of the pandemic and its associated lockdowns due to pre-existing risks in households affected by disability, including elevated rates of poverty and vulnerability to abuse. Gender may also play a role, with pre-existing in resources, discrimination, interventions and innovation likely to be important during the COVID-19 era. Poor mental health has been found to have widespread implications for both adolescent mother and child well-being, with subsequent impacts on birth outcomes,[151] parenting practice[152] and child development.[153-156] Vulnerability levels can change with sudden unemployment of caregivers, sudden lack of provisions and sudden government changes. Hidden vulnerability may arise when families are too anxious to seek medical or health care when needed due to concerns around COVID-19, which in turn undermines general health. Stigma and discrimination are often associated with health conditions[157] and can impede prevention, health

seeking, treatment and the quality of life of those with conditions. The mental health of individuals experiencing different forms of stigma can be damaged. In addition, the fear of such stigma can affect health-seeking behaviour.

3.11 Positive mental health outcomes

The word 'resilience' has its roots in the verb 'resilire' (Latin), which means to rebound. In the child and adolescent development literature, it has been defined in a number of ways including as successful coping over time, especially following adverse events,[158] or as having good developmental and mental health outcomes despite exposure to adversity.[159] Much of the early literature on resilience attempted to locate a trait for resilience – the genetic or temperamental factors that contribute to good child outcomes in the context of adversity. However, the current evidence is unequivocal that there is no trait for resilience. More important than individual biology or temperament is building resilient communities[160] through relevant policies, quality schools, and supporting parents and families.[161] An analysis of mental health of HIV-affected children reminds of the importance of social and cultural strength-based conceptualizations of mental health, which allows children to find meaning in loss and difficult experiences. Such approaches are enabling and avoid pathologizing their social experience; and these cautions are also relevant for the COVID-19 scenario.

There is also some emerging evidence that interventions to promote resilience may be effective.[162] Furthermore, opportunities to promote resilience should be harnessed, such as youth engagement in recovery planning and novel solutions to normal routine disruption. Studies often concentrate on exploring negative mental health

and are less likely to record or report on resilience, hope, adaptability, youth agency, optimism, social cohesion support and friendships. Many children cope well and it is relevant to understand the relationship between coping and emotion regulation.[163] Unexpected effects also need to be tracked. For example, the new reality of home school or school closure may be difficult for some but a relief for those who suffered from issues such as bullying, which may be alleviated. Positive skill learning may occur, such as online skills honed, and children might experience unexpected quality time with parents, siblings or family. Some interventions may be exploited in the COVID-19 era. COVID-19 can be seen as a multisystem challenge.[164] A review of benefits of interactions with nature in children and teenagers identified 35 papers exploring the overall mental health, self-esteem, stress and quality of life impacts, with half showing significant positive relationships.[165]

CHAPTER 4 Interventions for positive child and adolescent mental health

The COVID-19 pandemic has ushered in a new world characterized by widespread illness and death, uncertainty, fear and a global concern for the future of the world's children and adolescents. This is exerting a grave toll on child and adolescent mental health, and its full extent has yet to be revealed. Learning from past crises is critical as we enter the second year of the pandemic. The interventions in Figure 4.1 summarize the type of broad interventions that are possible at the family and community levels to support positive adolescent mental health. A set of valuable resources to supplement these are set out in Appendix 9.

4.1 Platforms for effective and accelerated child and adolescent mental health interventions

Interventions must be mindful of ages and stages

Most adult mental health disorders have an origin in childhood or were rooted in childhood experiences.[166] With this in mind, it is important that, as part of the COVID-19 response, child and adolescent mental health problems are catalogued by appropriate delineators such as age and sex, and addressed promptly with evidence-informed interventions. For those children experiencing massive adversity, acute stress such as that caused by the COVID-19 pandemic can trigger mental health challenges in the long term.

Age and/or developmental stage are key factors that require consideration when assessing child and adolescent mental health status and needs, and planning associated interventions. Younger children, on one hand, may still be developing the basis for complex skills such as language, cognition and emotion regulation.

Exposure to a disruptive event has the potential to adversely affect these key developmental processes.[167]

Younger children may struggle to process the temporal nature of the COVID-19 pandemic

Moreover, young children's limited abilities may make it more difficult for them to process the event and associated media coverage and express their emotions and reactions.[168] Their repertoire of available coping strategies may be smaller than older children, and they may lack a temporal sense that would allow them to understand that an event such as the COVID-19 pandemic is time limited.[169] They may also experience complex emotions such as grief and/or loss differently.[170] Finally, younger children may also be more strongly dependent on their environment and thus may be more affected by adverse caregiver reactions.[171]

Older children understand the implications of the pandemic more fully, which can elevate anxieties

Older children and adolescents, on the other hand, have more mature cognitive and reflective abilities, increasing the chances that they might engage in rumination and making it more likely for them to understand the full implications of the pandemic, leading to heightened levels of anxiety and fear.[172] Adolescents specifically are also undergoing a range of complex hormonal, brain and social/environmental changes, which may make them additionally vulnerable.[173] With peers and individuation processes becoming more important at this time,[174] disruptions caused by the pandemic to their social networks may have a significant impact on adolescents.

Figure 4.1: Platforms for effective accelerator youth mental health interventions

Platform	Intervention	Universal, Targeted, Indicated*
Home	■ Caregiver interventions such as parenting, parenting tips ■ Skills and communication ■ Caregiver training ■ Home visiting interventions for caregivers at risk	■ Universal provision – generally available ■ Targeted for vulnerable families and children and adolescents
Out of home	■ Programmes for street children, refugees, children on the move, institutionalized children ■ Reintegration provision	■ Targeted interventions for children and adolescents out of school
Neighbourhood	■ Support groups and family-centred interventions ■ Family-based interventions delivered via CBO-level platforms ■ CBO-delivered interventions ■ Problem-solving and social support interventions	■ Universal access in LMICs ■ Screening of vulnerable children and adolescents
Schools	■ Life skills mental health and well-being ■ Life skills for mental health promotion (universal or targeted) ■ School-based stigma and discrimination prevention	■ Referral for children and caregivers at risk
Primary health care	■ Stepped care ■ Psychosocial interventions ■ Home visiting with linkage between community-based support (CHW) and primary health care system	■ Screening of caregivers' mental health – targeted ■ Screening of vulnerable children and adolescents – targeted
Specialized care	■ Case management	■ Second stage screening and diagnosis
Legislation/policy	■ Social protection ■ Focus on creating enabling environments	■ Universal
Structural	■ Cash transfers ■ Cash plus care ■ Integration of services ■ Accelerators	■ Universal ■ Cost and impact of effective combinations

*Universal interventions are intended for the general population and are not limited to a particular subgroup. Targeted interventions focus on those persons at a higher-than-average risk for specific mental health outcome(s). Indicated interventions are specified to those persons already engaging in high-risk behaviours for the outcome, or already having mental health issues requiring attention.

Such disruptions can pose significant challenges to important developmental processes. Of note, beyond direct developmental differences, role expectations within the home environment may also vary substantially between children and adolescents. For instance, adolescents – particularly girls -- may be expected to take on roles such as caretaking, housekeeping or providing income, which could additionally increase the stresses placed on them.

Accelerator interventions can address multiple aspects of children's mental health simultaneously

There is growing understanding and appreciation of integrating actions to support vulnerable populations facing crises. Studies indicate that combinations can accelerate gains beyond the sum of benefits achieved through individual interventions. This work shows great promise, providing guidance to governments on how to add on services to existing platforms or how to prepare new interventions, whereby specific combinations of provision enhance the reach.[175] Services that simultaneously promote several targets may be a potential pathway for ensuring multiple mental health benefits for children and adolescents. Combinations have been shown to reduce potential mortality risk among adolescents living with HIV and may well be applied in the COVID-19 response.[176] Below we outline some of the components of effective accelerator mental health interventions.

4.2 Components of accelerator interventions

A recent systematic review[177] has examined universally delivered psychosocial interventions for adolescents to explore components of various programmes, which resulted in a diverse array of mental health outcomes (including positive impacts on mental health; depressive and anxious symptomatology; violence perpetration and bullying; and alcohol and substance use). Even though among the included studies the focus was skewed towards higher-income settings, the review showed that there were three core components that had significant effects when measured over a shortlist of 158 studies. These were described as interpersonal skill interventions, any emotional

regulation component, and direct alcohol and drug education.

Other evaluations have shown the utility of existing frameworks to promote health and educational attainment, which may be considered for adaptation in the light of COVID-19 (such as the WHO *Health Promoting Schools* framework).[178] If lessons from these findings were adapted to the COVID-19 response it would seem important to incorporate such interpersonal skills, emotional regulation and direct education.

There are robust guiding principles for developing child and adolescent mental health programmes in the COVID era

There is a grounding in knowledge of platforms of delivery for mental health provision, with interventions that hold promise. These are at individual/family, community, systems and policy levels. Several guiding principles and insights emerged from the literature. These are mostly applicable to adolescents but have benefits also for younger children.

- Positive mental health outcomes can be achieved through both **mental health specific and broader social welfare interventions.**
- Viable programmes to address youth mental health challenges include c**ontent adapted to local health risks and conditions, clear and urgent mobilization of resources and operationalization with strong supervision and accountability.**
- **Screening at primary health care and community levels for mental health disorders** can be adopted and should become an integral part of stepped care approaches for recognizing and treating common mental **disorders.**

- **Combination or integrated provision of positive mental health care** can maximize or accelerate their impact.
- **Existing fragile or vulnerable groups should be identified and prioritized** in programmes applying either single interventions or combination interventions.
- **Community-based organizations and community health workforces** are central to screening and referral in contexts where professional clinical services are lacking.
- **Community-based organizations that reach the most vulnerable and marginalized children and adolescents** are an important platform that can offer more specialized support in addition to the broad spectrum of services that they currently offer.
- **Home visiting is an essential component of community provision**, particularly in the context of inaccessible formal health infrastructure. This mechanism will need to be adapted and accommodated to COVID-19 contexts with either virtual or socially distanced support.
- **School-based interventions are also a vital part of community provision.** When schools have reopened, they should be used as entry points for screening and parenting programmes and for referral to clinical tier platforms. During closures, alternative avenues such as virtual teaching, ongoing contact and preparation should be encouraged.
- Care, support and parenting programmes can be valuably **implemented in conjunction with social protection initiatives** to enhance the impact of single interventions.
- The literature on younger children is less robust, yet the **importance of early child development cannot be forgotten in the response.** More research and data are needed for younger children.

4.3 Conclusions

This review has brought together some of the available literature around child and adolescent mental healthcare during previous health and other crises and in the contexts of poverty, inequity and marginalization. It has shown that crises bring elevated risks of anxiety and depression, trauma, loneliness and isolation, suicide and loss, and that these in turn can have acute and long-lasting effects on child and adolescent mental health, and those of their caregivers.

The world needs to brace itself for long-term ramifications from this pandemic on child and adolescent mental health. Children and adolescents are directly affected by the pandemic and additionally affected by the impact on their caregivers, communities, schools and countries. The catch-up and care needed for children and adolescents must be taken seriously and the benefits of swift current action will be felt for years. Most children are resilient, adaptive and full of strength and energy. Their agency will play a role in the global recovery.

COVID-19 is a rights, ethics and moral emergency and it should be seen as a clarion call for a different way of being. While anybody can become infected, there is no point on the prevention, infection, treatment, morbidity and mortality spectrum where inequality, poverty and disability do not markedly exacerbate the risk to and impact on the most vulnerable. Nor will this be the last pandemic. Climate breakdown has started. Marginalized and poor children and adolescents are not expendable. Our actions now will determine the extent to which we forge a better world for all children and adolescents and begin to make their mental health an integral part of response to all crises.

APPENDIX 1

COVID-19 and mental health – included studies

Study	Type	Findings
Bignardi et al. 2020[179]	Pre-post data for 168 parents, mean age of children 8.7 yrs *(pre-publication release prior to peer review)*	Three mental health measures (Strengths and Difficulties, Emotional Problems, and RCADS short form for depression and anxiety. Anxiety depression. During lockdown, no differences in emotional problems or anxiety, but depression scores significantly higher, controlling for age, gender or socio-economic status.
Guessoum et al. 2020[180]	Narrative review	Explores link between pandemics, lockdown and disasters with trauma, depression, anxiety, insecurity, suicidality and addiction. Grief, violence and internet use are also explored. Points out impacts on adolescents with previous mental health problems.
Loades et al. 2020[181]	Systematic review on Social isolation and loneliness on mental health of children in the context of COVID	83 articles, 51,576 mean. 61 observational, 18 LS and 43 CS. Only 1 related to a pandemic. Only 2 gave interventions. Social isolation and loneliness increased risk of depression, possibly anxiety and endured for up to 9 years. The longer the loneliness, the stronger correlation with mental health symptoms – more so than the intensity of loneliness.
Golberstein et al. 2020[182]	Opinion piece	Suggests elevated mental health burden with possible interventions via technology modalities with a need to address privacy and integration with existing services.
Wang et al 2020[183]	1210 respondents online survey China	53.8 per cent rated psychological impact as moderate to severe. Depressive, anxiety and stress symptoms noted. Concludes need to identify needs, provide support and explore prevention by providing accurate health information and adapting interventions to modes of delivery suitable to pandemic conditions.
Fergert et al. 2020[184]	Opinion piece	Highlights mental health impact potential directly for the child, and indirectly through parental mental illness. Highlights vulnerability concerns such as violence, disabilities, previously traumatized, migration and poverty.
Lee J 2020[185]	Opinion piece	Impact of school closure. Direct learning disruption, indirect access to mental health resources and support curtailed. Disruption of examination and thereupon qualification and skill progression.
Saurabh et al. 2020[186]	N=121 children and parents in India	Described non-compliance with quarantine requirements. Showed elevated psychological distress for worry, helplessness and fear.
Zhou et al. 2020[187]	Cross sectional survey of 8079 students in China	Prevalence of depressive and anxiety symptoms was 43.7 and 37.4 per cent respectively, with female students at elevated risk.

Study	Type	Findings
Franic et al. 2020[188]	Opinion piece	Notes common experiences of fear and anxiety highlighting the deficiencies of child and adolescent mental health services predating COVID-19.
Novins et al. 2020[189]	Opinion piece	How pandemic has profound impacts and may well compound or expose existing disparities, with particular attention to racism, poverty, violence, maltreatment and neglect.
Ransing et al. 2020[190]	Survey of key providers	16 country participants showing challenges of preparation provision, solutions and opportunities for mental health provision.
Cluver et al. 2020[191]	Intervention description	Parenting tips in the COVID-19 epidemic, based on evidence-based parenting programmes for global distribution.
Bobo et al. 2020[192]	Survey N=538 parents of children with ADHD. France	Overall finding improvements as children showed reduced school attendance anxiety. Enhanced in optimal lockdown conditions. Yet some report worsening well-being, deteriorating behaviour and emotional outbursts. Increased insight into manifestations of difficulties was also reported.
Becker et al. 2020[193]	Opinion piece	Draws attention to sleep disorders.
Imran et al. 2020[194]	Opinion piece	Describes possible disruptions and emotional response given child vulnerability.
Colizzi et al. 2020[195]	Survey N=527 Autism spectrum Disorder participants	Enhanced behavioural problems and intense needs. Problems associated with pre-existing behavioural problems and highlighted need for support.
Orben et al. 2020[196]	Opinion piece	Examined potential ramifications of social deprivation on adolescent development with attention to disruptions in peer acceptance and peer interactions with limited face-to-face contact. Furthermore, comment on how new technologies may ameliorate the impact.
Levine 2020[197]	Opinion piece	Highlights dual epidemic problems for those already at risk from opioid disorders and how COVID-19 stressors can add to adverse childhood experiences.
Ragavan et al. 2020[198]	Opinion piece	Violence during the pandemic may be elevated and some guidance is proposed.
Courtney et al. 2020[199]	Literature-informed opinion piece	Reviews disaster psychology and explores potential alternative support provision. Also explores resilience and positive experiences with enhanced parental monitoring as an example.
Xie et al. 2020[200]	Survey of 2330 students in China, cross-sectional	Students at home for a mean of 33.7 days with 22.6 per cent reporting depressive symptoms and 18.9 per cent anxiety symptoms. No comparison, but higher than prevalence surveys and no data on duration.

APPENDIX 2
Studies from generalized epidemics and pandemics

Study	Goal	Type of Intervention	Potential for COVID-19 adaptation
Weiner-Seidler et al. 2017[201]	Review school-based interventions for anxiety	81 studies. Significant reduction in depression and anxiety. Immediately post and 12-month follow up. Targeted programmes more effective than universal. Externally delivered superior to school staff delivery.	React soon, consider targeting, explore external provision modalities.
Johnstone et al. 2018[202]	Review universal school-based prevention for anxiety and depression	14 trials. Big reduction in symptoms post programme and follow-up. Programme type and length. Greater number of sessions > effect.	Programmes are effective, consider dose.
Cluver et al. 2020[203]	Parenting in the COVID-19 pandemic	Evidence-based parenting tips, available virtually.	Already adapted and widely used resource.
Caldwell et al. 2019[204]	School-based mental health prevention	137 studies. Some evidence for utility of cognitive behavioural, mindfulness and relaxation-based interventions.	Emerging evidence for preventive interventions to be adapted.
Andermo et al. 2020[205]	School-based physical activity interventions	30 interventions. Effects found, but more for older than younger students.	Explore physical-related interventions, be aware of age relevance.
Dray et al. 2017[206]	School-based resilience focussed	57 trials. Looked at 7 outcomes. All trials effective in at least 4/7 outcomes.	Shows promise for COVID-19 – need to track quantum.
Grist et al. 2019[207]	Technology delivered interventions	34 trials. Conclude a small effect in favour of technology delivered vs waiting list controls	Technology-delivered interventions feasible and worth exploring.
Garrido et al. 2019[208]	Digital interventions	56 studies. Digital > compared with no intervention, but active control no significance. Engagement and adherence low. Technical quality mattered.	Digital interventions can be effective, but supervision needed, and quality of the interface matters.
Grist et al. 2017[209]	Mobile apps	24 publications. Insufficient evidence.	Potential use, but will need good evaluation to guide.
Bennett et al. 2015[210]	Preventing anxiety – review of reviews	3 reviews included.	Emerging evidence.

APPENDIX 3
Disasters and mental health

Study	Focus	Findings	COVID-19 lessons
Pfefferbaum Sweeton 2014[211]	Clinical Intervention (Individual Level)	9 components commonly used in disaster mental health interventions and associated evidence.	No clear conclusion on which component is most effective; improvements for all studies including trauma narrative components and parent involvement.
Pfefferbaum, Newman 2014[212]	Clinical Intervention (Individual Level)	85 studies. Pre-exposure preparedness advantageous. Post-trauma CBT and traumatic grief interventions appear effective. Evidence for exposure, narrative interventions and EMDR is promising. Psychological first aid and debriefings require additional evidence, evidence for psychoeducation inconclusive.	CBT and traumatic grief interventions could be effective for treating clinical-level problems. A range of other interventions show promising evidence. Need to establish whether there is a common element across approaches that makes them effective, and what interventions are suitable for what population.
Newman, Pfefferbaum 2014[213]	Clinical Interventions (Individual Level)	Meta-analysis of interventions for PTSD outcomes (k=24, N=2630). Those with intervention show better outcomes than control treatments or waitlists. Outcomes moderated by intervention type, group versus individual treatment, setting, parental involvement, participant age, and timing and length of treatment.	Interventions appear to improve PTSD outcomes. Moderating factors should be considered when selecting an intervention type.
Purgato, Gastaldon 2018[214]	Clinical Interventions (Individual Level)	Review of RCTs comparing psychological therapies and control conditions in LMICs following humanitarian emergencies (k=36, N=3523).	CBT may lead to lower endpoint PTSD in LMIC settings, though evidence is qualitatively low. No interventions found for anxiety or depression.
Purgato, Gross 2018[215]	Clinical Interventions (Individual Level)	Systematic review and meta-analysis of individual data (N= 3143) of 11 RCTs focused on psychosocial interventions (versus waitlist controls) in LMICs.	Social support interventions may improve functional impairment, coping, hope and social support short and long term. Effects were larger for adolescents aged 15–18, non-displaced children and those living in smaller households (<6 persons)

Study	Focus	Findings	COVID-19 lessons
Pfefferbaum, Sweeton 2014[216]	Multi-level intervention approaches (Individual Level)	Three types of interventions (48 studies): universal preparedness/resilience-enhancing interventions, early post-disaster interventions, and long-term (recovery) interventions. Choice of intervention used depends on circumstances. School settings advantageous for universal interventions.	No evidence exists for early debrief interventions. Both group and individual interventions may address clinical problems. Settings of delivery should be chosen depending on environmental conditions and to maximize access. Universal school interventions delivered by teachers may capitalize on existing trust relationships, teachers' knowledge of child development, and their ability to monitor children.
Wolmer, Hamiel 2017[217]	Multi-level intervention approaches (Individual Level)	Preschoolers. Community readiness and child developmental competence increased pre-disaster via kindergarten-based universal preventative interventions, and parental resilience programmes.	Review of screening and clinical diagnostic tools. Evidence for preschoolers is limited. Kindergarten may be a point for delivering universal interventions. Psychological first aid and psychoeducation may be adaptive in the immediate disaster aftermath. Long-term, TF-CBT, play therapy and dyadic therapy are promising. Teacher-delivered therapy could be effective.
Scheeringa, Cobham 2014[218]	Large-scale clinical intervention	Challenges and aims of implementing large, programmatic mental health interventions after disaster.	Treatments should be chosen taking into account accessibility, costs, technology needs, patient retention, options for privacy, levels of expertise available, parental involvement, intensity of intervention needed, and effect sizes. A central, non-government agency may be able to deliver knowledge to leaders.
Pfefferbaum, Varma 2014[219]	Universal intervention (Individual)	Review of pre-disaster preventative and post-disaster compensatory universal interventions. Use cognitive-behavioural and/or multimodal approaches.	Universal interventions may help young people by normalizing their disaster reactions, helping them to process the event, enhancing their social support and future preparedness and promoting recovery. Group interventions may be feasible if they are planned so they do not overwhelm children.

Study	Focus	Findings	COVID-19 lessons
Cobham, McDermott 2016[220]	Parent/family	Review of parent and family factors that may increase risk/ are adaptive after disaster. Disaster Triple P Parenting programme, a 2-hour, universal intervention aimed at parents and caregivers, covering common child and emotional and behavioural reactions, their potential management, parenting traps and self-care.	Vulnerability may be increased by hostile/anxious parenting, too much/little disaster-related conversation, parent-child/ family conflict, low perceived family connectedness, worry about the family, changed/dysfunctional family environments, largely unrestricted media exposure. Positive parenting encouraging emotional expression, acceptance and positive reframing may be adaptive.
Landau, Mittal 2008[221]	Family/ systems approach	Framework for using different system levels (individual, family, community) to increase families' abilities to cope with disaster; bridges between professionals, families and communities.	Enhancing human connections as well as an individual's connections with their culture and history can increase resilience to trauma and loss. May capitalize on structures such as large extended families in culturally sensitive ways.
Fu and Underwood 2015[222]	School	Review of 11 universal, school-based intervention studies after natural and manmade disaster. Generally, school-based programmes conducted by teachers and/ or local paraprofessionals may reduce PTSD in young people.	School psychosocial interventions capitalize on existing support systems. Reach children in normal context and developmental level. May reduce stigma, prevent medicalization of normal reactions, provide support independent of symptom levels and reach children who are not readily identified. Teachers may be figures of trust, know the child and can observe long term.
Taylor, Goldberg 2019[223]	School	Review of school-based interventions. Multi-tiered programmes – primary prevention, early intervention and clinical intervention. Teams may be devised to plan services/ interventions for each tier.	Schools improve access to mental health treatment and identify students at risk and tiers of appropriate treatment. Parents may be involved. Schools should aim to connect with local trauma professionals and have a contact plan with students to identify those at risk if schooling is disrupted.
Gurwitch, Kees 2004[224]	Medical professionals	Role of medical personnel after disaster, frequent point of contact for children and families. Sources of trust, guidance and support, can determine adequate levels of intervention and collaborate.	Personnel may need training to recognize normal versus abnormal reactions in children. Screening and referrals. Also provide education and guidance to parents/teachers about common emotional reactions and may help advocate for child needs on a policy level.

Study	Focus	Findings	COVID-19 lessons
Williams, Alexander 2008[225]	Ecological/ Systems Approaches	Policy recommendations based on a review. Identifies various issues in the micro-, meso- and exosystem to target after disaster to reduce mental health impacts.	Interventions comprising children's broader environment (schools, peer relations, community organizations) may be an important intervention target when the primary system (family) is adversely affected by disaster. The exosystem, comprising the community and various institutions are strategically important.
Pfefferbaum, Jacobs 2012[226]	Ecological/ Systems Approaches	Interventions at various ecological system levels, capitalizing on naturally occurring structures within a child's environment. Coordination and cooperation important	Potentially effective interventions 1) microsystem – family preparedness, planning and practice, psychoeducation, role modelling, emotional support, redirection; 2) mesosystem – school or community-based safety and support interventions, assessments, referral and counselling; 3) ecosystem – interventions for enhancing community resilience through various agencies, 4) macrosystems – policies and programmes/ services made available
Beaton, Murphy 2009[227]	Public Health Response	Public health agencies (comprising schools, health agencies, civic, religious and governmental organizations) may be important to promote adaptive outcomes after disaster in 3 phases: preparedness, during the disaster and in the aftermath.	Regular surveillance, training and universal interventions may foster community resilience. Rapid assessments of impacts and needs are central. Credible and timely communication helps contain emotional distress. Agencies may provide psychoeducation and outreach through routine sources (media, print), making individuals aware of and connecting them to relevant services. Community services may aim to help families cope. Public health services may reduce effects of secondary stressors, identify unmet needs, help to re-establish normalcy and evaluate the effectiveness of interventions and resilience promotion.

Study	Focus	Findings	COVID-19 lessons
Ghodse and Galea 2006[228]	Implementing services in LMICs	Summary of experiences around establishing mental health care after the 2004 tsunami.	Intervention needs to be carefully planned, addressing local context, needs and urgency. Physical and safety needs may need to be addressed first. Diagnoses differ culturally. For children, safe environments may be key, and they are substantially impacted by parenting. Establishing normality and rituals/routines where possible is adaptive. There are risks for secondary traumas such as trafficking. Aid should be integrated within existing structures, making coordination key (e.g. through a mental health force with representatives of various agencies).
Cartwright, Hall 2017[229]	Implementing services in LMICs	Review of effects of disaster on health systems in LMICs.	Health care systems may initially focus on treating those ill/injured, but then need to switch to broader health needs. Preparedness is required to address short- and long-term mental health difficulties. Maintain key services such as reproductive and preventative health. Key actions include identification of appropriate leaders and training of staff.

APPENDIX 4
Ebola and mental health

Study	Location	Sample and design	Findings
Yoder-van den Brink 2019[230]	Sierra Leone Reflections Commentary	Author draws on her long-term experience as a child mental health specialist in Sierra Leone	Stresses the need for development of contextually relevant interventions, improvement of capacity-building efforts, and acknowledgment of the role of community-based practitioners in the delivery of services.
Yoder et al. 2016[231]	Sierra Leone N=13 – survey N=44 – qualitative study	Nationwide survey of mental health care providers, and exploratory qualitative research among service users and providers and other stakeholders	Strengthen legal structures and policies; specifically include children and adolescents; distinguish between children with psychiatric, neurological, developmental or psychosocial problems; supplement child and adolescent mental health (CAMH) training; specialist training in CAMH; integrate CAMH care into primary care, education and the social welfare system; research needed. Consider role of religious healers as care providers.

APPENDIX 5
SARS/MERS and mental health

Study	Sample and design	Findings
Mental health effects		
Li, Chan 2007[232]	Semi-structured interviews with 2 boys, 2 girls, aged 7–13 years, 5 months after SARS hospitalization and their main caregiver	Children perceived SARS similar to the common cold, and often had mild trajectories. Hospitalization caused distress mainly due to isolation; this was buffered by telephone or video conversations with family and well-wishes from friends. Parental emotional reactions were closely associated with those of the child, and families become more health conscientious. Positive growth in various ways was reported. By five months, there was no remaining psychological distress, though some exercise impairment and residual radiological abnormalities remained.
Koller, Nicholas 2006[233]	Ethnographic study; on children hospitalized due to SARS (N=5), their parents (N=10) and health care providers (N=8)	Children were strongly affected by hospitalization, citing feelings such as sadness and being "trapped" at hospital. The most significant distress for all parties was caused by the child having to be isolated. Health care workers often took on temporary roles as pseudo-parents, while parents felt marginalized. After discharge, some children showed altered behaviours, such as clinginess, potentially due to separation experiences. While some families experienced SARS-related loss, others reported growth processes (stronger family focus, more physical affect).
Leung, Kwan [45]	N=44 children <18 years, assessed at baseline and 3–6 months after disease onset	The study showed all children had recovered by 3–6 months, independent of their initial symptoms, and none showed serious adverse response to treatment. All outcomes including exercise tolerance, pulmonary functions and psychological status were positive.

Study	Sample and design	Findings
Long-term physical health		
Yu, Li 2006[234]	N=34 children/adolescents 6 months after SARS infection (mean age: 14.7 years), versus a control group; N=27 at 15 months	The patient group unexpectedly showed lower absolute and mass-related peak oxygen consumption, a lower oxygen pulse and a lower oxygen uptake efficiency slope at 6 months. This may be due to impaired perfusion to the lungs. Lung function normalized by 15 months, though absolute and mass related peak oxygen consumption remained impaired.
Stockman, Massoud 2007[235]	Review on 6 case series; N=135 paediatric SARS patients from Canada, Hong Kong, Singapore and Taiwan	Children <12 years had more favourable outcomes (milder disease, less likely to be admitted to intensive care or needing oxygen/ medication). Above this age, presentations were similar to adults. By 6 months, there were only mild residual changes in exercise tolerance and pulmonary function.
Leung, Kwan 2004[236]	Review study	Younger children were susceptible to infections but showed milder clinical cases, while adolescent trajectories more closely resembled those of adults. Overall, low case fatality ratio and good short- to medium-term outcomes were found.
Family factors		
Koller, Nicholas 2006[237]	Same as above-described study by the same first author	Provisions of family-centred care may be strongly affected by having to isolate children for infection control and associated emotional upheaval and communication challenges during an epidemic.
Chan, Leung	N=7 semi-structured interviews with parents of child SARS patients in Hong Kong	Parents were strongly affected by fear resulting from a need to isolate the child (infection control) and required better psychological preparation. General communication between parents, health care providers and children should focus on minimizing fear and anxiety, improving trust and facilitating mutual understanding.
Sprang G and Silman M 2013[238]	Reactions of family and adolescents to disease containment measures (N=38)	Criteria for PTSD met for 30 per cent children and 25 per cent of adults quarantined or isolated.

HIV and mental health – Systematic reviews

Issue N studies included	Issue N studies included	Findings	COVID-19 lessons
Disclosure			
Han et al. 2019[239]	Inter-generational interventions N=13 Inter-generational interventions N=13	Groups, skills, disclosure, behaviour, coping. Some evidence, greater effect among most stressed.	Include intergenerational interventions, especially for high stress.
Vreeman et al. 2013[240]	Disclosure to children and adolescents, N=32	Disclosure varied – facilitators were openness, planning and child comprehension. Barriers were fear, secrecy and concerns for emotional impact.	Disclosure needs to be tackled, clear open communication.
Krauss et al. 2013[241]	Disclosure to children under 12 N=15	Health and future care planning benefit. Disclosure should be harmonized with child maturity in age-appropriate manner.	Open communication has benefit and needs to be age appropriate.
Violence/maltreatment/neglect			
Spies et al. 2012[242]	Childhood maltreatment history and adult mental health N=34	Established adult psychopathology based on childhood maltreatment.	Intervene for mental health in childhood to prevent adult pathology.
School / Education			
Kimera et al. 2019[243]	Support for quality of life N=16	Most challenges arose in school, few supportive mechanisms available.	Some challenges may abate during school closure. Need to create supportive mechanisms.
Orkin et al. 2014[244]	Pathways to poor educational outcomes	Orphanhood and parental illness impact via poverty and internalizing problems occasioned thereby.	Establish causal pathways to guide interventions.

Issue N studies included	Issue N studies included	Findings	COVID-19 lessons
Interventions for child mental health			
Skeen et al. 2017[245]	Community interventions to improve Psychosocial well-being N=17	15/17 showed benefits. Consider content, dosage, and age group (younger children underserved).	Psychosocial interventions effective, adjust for different age groups.
Posadzki et al. 2016[246]	Automated telephone interventions N=132	Showed efficacy, but targeting the adults/parents of children.	Technology holds promise.
Haines et al. 2019[247]	Depression Youth N=12	Gender, older age, food insecurity, exposure to abuse and internalized stigma risks for depression. Communication, relationship satisfaction and social support protective.	Dearth of depression intervention evaluation. Be aware of risks and protective factors that may apply to COVID-19.
Rose-Clarke et al. 2019[248]	Peer-facilitated N=20	Mixed results according to outcomes (health, HIV prevalence, violence, mental health, substance use. Most promising evidence supports peer facilitators improving mental health and reducing substance use.	Harnessing peer support facilitators shows promise.
Ciapponi et al. 2017[249]	Service delivery care arrangements N=51	Three key pillars – who provides care, where it is provided and how it is coordinated.	Special facilities for children, home-based interventions.
Tol et al. 2019[250]	Mental health treatment for violence outcomes N=7	Dedicated or integrated provision. Amenable to change, but evidence base wanting.	Could adapt and include in COVID-19 response with monitoring.
O'Hara et al. 2019[251]	Video feedback on attachment security N=22	Moderate certainty evidence that video feedback may improve sensitivity, though little on attachment security.	Video feedback may be a useful tool for attachment sensitivity.
Govindasamy et al. 2020[252]	Well-being measurement N=10 N=30 qual	Well-being comprised self-acceptance, belonging, autonomy; positive relations, environmental mastery, purpose in life.	Well-being multidimensional and needs to be incorporated into COVID-19 outcome measurement.

Issue N studies included	Issue N studies included	Findings	COVID-19 lessons
Stigma and discrimination			
Hartog et al. 2020[253]	Stigma and discrimination N=61	Community education, individual empowerment and social contact interventions. Mostly community-level strategies, short duration. 10 child focused positive as direct target group.	Community-level interventions hold promise.
Pantelic et al. 2015[254]	Predictors of HIV related stigma (SS Africa) N=17	Lower depression and improved mental health associated with decreases in stigma.	Be aware of stigma and how this interacts with generalized mental health.
Mak W et al. 2017[255]	42 studies meta-analysis	Reviews showed small effects of interventions on knowledge, attitudes but low-quality methodology a problem.	Stigma is pervasive and interventions can reduce knowledge and negative attitudes.
Gender			
Sherr et al. 2009[256]	Gender analysis 12 treatment, 15 schooling 14 nutrition 54 cognitive 15 bereavement	Many gaps in providing gender, reporting by gender and analysing by gender.	Gender differences need to be captured in interventions, provisions and evaluations.
Risk behaviour			
Toska et al. 2017[257]	Youth sexual risk taking N=42	Risk taking is high. Living arrangements, gender-based violence, food insecurity and employment were associated with elevated risk, while knowledge and support reduced risk. Interventions exist to reduce risk taking.	Examine drivers of risk. Adapt interventions.
Impact of adult / parent mental health on children			
Goldberg et al. 2016[258]	Children living with HIV adults N=47	Substantial population, multifaceted vulnerabilities – physical emotional and educational.	COVID-19 may have similar ramifications.

APPENDIX 7

Six conceptual themes identified through a review of existing literature and interviews undertaken with young people

Mental health stressors – knowledge, misinformation and communities remiss of regulation. Numerous reports focused on stressors in the environment, inclusive of the emotional implications of lockdown, impacts of a lack of knowledge and misinformation relating to the pandemic among communities, and the emotional implications of witnessing those remiss to the regulations in place to combat the spread of COVID-19. Concern for the mental health and well-being of the self and others (family, friends and community) was paramount. Children also commented on the effects of loss of social connection brought about by social restrictions, and the pressure on families due to loss of routine and confinement. However, they also demonstrated numerous strategies for coping with the effects of lockdown and/or distress, including keeping busy, spending time/talking online with friends or family, watching TV/playing games, exercising, learning new skills, spending time outdoors, seeing the positives in the situation, and being kind.

> *Proclaimed conspiracy theories, which were playing on our emotions, suggesting that the institutions that were supposed to protect us somehow did not.*
>
> – Aida, age 19, Kazakhstan

> *All my plans are cancelled, which means I have nothing to look ahead to and you find yourself trapped in a void of your own thoughts*
>
> – Anonymous, UK

> *Keeping busy helps. As long as you're doing fun things you don't think about the virus. We have made kindness rocks and we're going to give them to my friends. On their doorsteps. I think I would say to other kids, take this time to hang out with your mum and dad. Make memories.*
>
> – Jake, age 11, New Zealand

Education disruption

One of the most common themes identified across reports focused on worry attributed to school closures and disrupted learning. Concerns related to educational performance and its implications for future prospects, and also loss of social contacts. While it was acknowledged that processes had been put in place in some communities to move learning to web-based online platforms, many young people commented on barriers to home learning, including a lack of support from schools/teachers, no access to electronic devices, a home environment non-conducive to learning (e.g. due to parental substance use or mental health issues, having caretaking responsibilities, or being exposed to violence), or having special needs that were difficult to meet via online education. Especially within LMICs, many communities lacked an infrastructure that would allow children and adolescents to effectively utilize such resources. Limitations included lack of access to the internet and not having the resource (including space and privacy) to undertake learning outside of the typical school environment.

However, some also reported positive effects of the pandemic on their learning. Next to being less worried about being bullied at school, this included reduced exam stress, having the freedom to schedule their own time, and being able to learn about topics they were truly interested in.

Of note, while not many studies had been conducted on this at the time of this review, some evidence suggested that while most young people were keen to go back to school, for some, this was also associated with stress and anxiety, and a German youth report highlighted that adolescents felt unhappy that they were not asked about whether or not they felt comfortable with this.[259]

> *As a student, I can't access all online content because I cannot afford a smartphone. COVID has badly hurt our school life to the point that by the time normalcy returns, our parents may not be able to afford school fees since the majority have been laid off from their workplaces.*
>
> – Christine, Uganda

> *It's going to make it harder. It's already hard for us to go and get jobs and a house and all those kinds of things in life… it's going to make it a lot harder than what it would normally.*
>
> – Female, Australia

> *(…) I like working on my own timetable and it makes me happy*
>
> – Male, age 12, UK

Pre-existing risk – protective factors and service use

Mental health was the topic receiving most attention within reports, especially from HICs. Children and adolescents who had pre-existing risk factors often described more difficulties and may require additional support. Such risk factors included difficult family relationships, pre-existing child or parent mental health problems (including substance use), having a vulnerable family member, or living within low-resource settings. For children and adolescents already engaged within mental health services, many commented that their treatment had been postponed or that they had lost access to existing support.

Children and adolescents tended to be less affected mentally if they had a general feeling of being safe and supported, if they realized the numbers of infections/deaths were going down after lockdown, if they trusted their parents, political leaders and/or the hygiene measures put into place to limit the spread of the virus, and/or if they reduced their news consumption.

> "*I am constantly worried about my family becoming sick, because my mom is high risk.*"
>
> – Anonymous, UK

> "*Sessions with my psychiatrist and therapist have been moved to over the phone. This has caused much more anxiety as I have to try and desperately find somewhere to take the calls in private without my family hearing.*"
>
> – Female, age 18, UK

> "*I'm getting more stressed because of schoolwork, my education, and my family's well-being. I'm dealing with the breakdowns and stress much worse. My sleeping has got much worse to the point I'm going to bed at 9 falling asleep at 3 in the morning, if I even fall asleep at all.*"
>
> – Female, age 15, UK

> "*I'm not that worried about coronavirus because the prime minister and my mum and dad will protect me. That's why we went into self-isolation.(…).You can just say that everything will be fine if we don't worry and we stay at home and wash our hands.*"
>
> – India, age "nearly 7", New Zealand

Poverty and economic impacts

Children and adolescent accounts also focused on the broader societal, economic and political ramifications of the pandemic. Many young people in LMICs described the direct effects of the lockdown on their communities, which were often already experiencing economic pressure. They also discussed the realities of life in their communities under COVID-19 (such as inability to implement hygiene measures, losses of jobs, etc.), reflecting some of the wider issues being tackled by interagency groups in response to the crisis. In HICs, these concerns were somewhat less pressing, but a substantial proportion of young people still worried about their parents having lost or potentially losing income in the future. Children and adolescents in both high- and low- and middle-income contexts worried about the impacts of increased poverty, inclusive of the broader consequences of economic disruption, on individuals, communities, services and the broader society.

Stigma and discrimination

Numerous reports from varying regions identified children and adolescents either experiencing stigma and discrimination themselves, or witnessing stigma and discrimination related to COVID-19 within their communities, often targeted at specific groups (e.g. those ill, or ethnic/religious minorities). This could adversely affect feelings of well-being and safety.

> "
> *Some young women who are out of jobs have resorted to early marriage or even prostitution for survival. This is very worrying. I would like to see safety nets for vulnerable young people so we could access grants from the government or other organisations to start our own businesses during this time.*
>
> – Christine, Uganda

> "
> *The best support for my family would be financial or food support because we are spending much more than usual on food as all 4 school children are staying home.*
>
> – Anonymous, Finland

> "
> *Misleading, biased information and conspiracy theories have resulted in hatred and racism.*
>
> – Zhong, age 17, China

> "
> *COVID-19 is becoming a religious issue in India, with blame being directed towards Muslim communities for causing the pandemic in the country.*
>
> – Zara, India

Positive experiences, opportunities and mobilization

While focus is often on the negative implications of COVID-19, children and adolescents in many of the resources identified also commented on positive aspects brought about by the pandemic, e.g. the ability to connect with others and more opportunities for free time/play/learning skills. Likewise, children and young people are mobilizing within the response to COVID-19 and are participating in various ways (Initiatives list: https://www.unmgcy.org/youth-initiatives). As such, some are trying to raise awareness and combat fake messages online, while others are volunteering to distribute food or other essentials, or trying to provide informal support (e.g. for mental health problems). Such efforts are either undertaken individually or with structural support of various organizations.

> *As youth, we have seen how COVID-19 is affecting the mental state and health of people whether they are young or old. As a result, we decided to start a Facebook page in which we engage youth through book discussions and ask them how they are doing during the COVID-19 situation...For those without social media, we support them by broadcasting daily meditations and inspirational quotes to give some hope.*

– Initiative in the Philippines

> *I have formed a closer relationship with my parents. The community has really come together. Has made me appreciate the small things.*

– Girl, age 15, Wales

A selection of reviews on interventions for anxiety and depression

Study	N studies included	Findings	Implications for COVID-19
Seidler et al. 2017[260]	81 studies	School-based interventions, small effects on depression and anxiety prevention, sustained at 12-month follow up. Targeted > universal. Externally delivered > staff.	Schools will provide a good platform for COVID-19 related anxiety and depression. Targeted and external provision should be considered.
Chow et al. 2016[261]	18	Audiovisual interventions to reduce preoperative anxiety. Good evidence on videos, multifaceted programmes and interactive games being effective. (Music therapy less so).	Good evidence of various audiovisual interventions for anxiety, which could be adapted for COVID-19.
Dray et al. 2017[262]	57 trials	Strengthening of minimum of 3 internal resilience protective factors. All showed efficacy in reducing some outcomes. Some evidence of short-term endurance.	Good evidence for universal, resilience-focused interventions which may be a good strategy for COVID-19 responses.
Wolpert et al. 2019[263]	38	Interventions not accompanied by a mental health professional.	Mixed findings but some show promise. Useful in the absence of mental health cadre.
Hollis et al. 2017[264]	21 reviews	Meta review of digital health interventions. Mixed findings.	Should inform new designs and approaches.
Feiss et al. 2019[265]	42	Interventions school-based, 11–18 year olds. Targeted>universal. Importance of programme type, dose and recipient characteristics (race, age).	Lessons regarding tailoring and targeted provision to maximize efficacy.
Coombe et al. 2015[266]	20	Teacher-mediated interventions after disaster. 9 separate interventions, short-term benefits for mental health and academic.	Teachers may be a good focus for intervention delivery.

Study	N studies included	Findings	Implications for COVID-19
Grist et al. 2017[267]	24	Explored different downloadable apps. Acceptability established, usage moderate, insufficient evidence.	Sets a platform for app use, but evaluation of impact needed.
Wang et al. 2018[268]	16 apps	Effectiveness of mobile apps for monitoring and management – not child specific. Apps have potential.	Growing use of apps, needs evaluation.
Rathbone et al. 2017[269]	27	Improvement in physical health and reductions in anxiety, stress and depression. With up to 6-month follow-up.	Promising efficacy of mobile apps and SMS texts.
Rodriguez-Ayllon et al. 2019[270]	114	Longitudinal and cross-sectional studies showed significant link between physical activity and mental health.	Physical interventions can improve and could be harnessed in an array of interventions.

APPENDIX 9
Useful background reports and reading

Leading Minds Report https://www.unicef-irc.org/article/1938-leading-minds-2019-on-child-and-adolescent-mental-health-concludes.html

Innocenti brief: Brossard, Mathieu; Cardoso, Manuel; Kamei, Akito; Mishra, Sakshi; Mizunoya,Suguru; Reuge, Nicolas (2020). Parental Engagement in Children's Learning: Insights for remote learning response during COVID-19 , *Innocenti Research Briefs* no. 2020-09, UNICEF Office of Research - Innocenti, Florence

Innocenti brief: Dreesen, Thomas; Akseer, Spogmai; Brossard, Mathieu; Dewan, Pragya; Giraldo,Juan-Pablo; Kamei, Akito; Mizunoya, Suguru; Ortiz Correa, Javier Santiago (2020). Promising Practices for Equitable Remote Learning. Emerging lessons from COVID-19 education responses in 127 countries, *Innocenti Research Briefs* no. 2020-10, UNICEF Office of Research - Innocenti, Florence

UNICEF Innocenti report: A rapid review of economic policy and social protection responses to health and economic crises and their effects on children: lessons for the COVID-19 pandemic response. Nyasha Tirivayi, Dominic Richardson, Maja Gavrilovic, Valeria Groppo, Lusajo Kajula, Elsa Valli and Francesca Viola. Office of Research – *Innocenti Working Paper* WP 2020-02 | June 2020

Innocenti working paper and evidence gap map: Bakrania, Shivit; Chávez, Cirenia; Ipince, Alessandra; Rocca, Matilde; Oliver, Sandy; Stansfield, Claire; Subrahmanian, Ramya, Impacts of Pandemics and Epidemics on Child Protection: Lessons learned from a rapid review in the context of COVID-19, *Innocenti Working Papers* no. WP-2020-05, UNICEF Office of Research - Innocenti, Florence

www.covid19parenting.com

https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/healthy-parenting

https://www.unicef.org/coronavirus/covid-19-parenting-tips

UNICEF Innocenti report: Gromada, A, Richardson, D, Rees, G (2020) 'Childcare in a Global Crisis: The impact of COVID-19 on work and family life. UNICEF *Innocenti Research Brief* 2020-18.

Innocenti Brief: Kardefelt Winther, Daniel; Twesigye, Rogers; Zlámal, Rostislav; Saeed, Marium; Smahel, David; Stoilova, Mariya; Livingstone, Sonia (2020). Digital Connectivity During COVID-19: Access to vital information for every child, *Innocenti Research Briefs* no. 2020-12, UNICEF Office of Research - Innocenti, Florence

https://www.unicef-irc.org/publications/896-adolescents-mental-health-out-of-the-shadows-evidence-on-psychological-well-being.html

https://www.unicef-irc.org/article/1938-leading-minds-2019-on-child-and-adolescent-mental-health-concludes.html

https://www.unicef-irc.org/publications/801-cash-transfers-improve-the-mental-health-and-well-being-of-youth-evidence-from-the.html

https://www.unicef.org/reports/community-based-mental-health-and-psychosocial-support-guidelines-2019

https://www.weforum.org/agenda/2020/05/covid-19-is-hurting-childrens-mental-health/

https://www.unicef.org/coronavirus/how-teenagers-can-protect-their-mental-health-during-coronavirus-covid-19

https://www.unicef.org/coronavirus/how-protect-your-familys-mental-health-face-coronavirus-disease-covid-19

Nurturing care framework https://www.who.int/maternal_child_adolescent/child/nurturing-care-framework/en/

Endnotes

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