

Miranda Beck

# Experiences with non-pharmaceutical interventions and student mental health and wellbeing during COVID-19

A Multimethod Qualitative Study

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NTNU  
Norwegian University of  
Science and Technology  
Faculty of Medicine and Health Sciences  
Department of Public Health and Nursing

Miranda Beck





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**Miranda Beck**

Global Health

Submission date: May 2022

Supervisor: Terje Andreas Eikemo

Norwegian University of Science and Technology  
Department of Public Health and Nursing



# Abstract

**Background.** Mental health conditions compose a major burden of disease for both children and adolescents globally. Non-pharmaceutical interventions taken during global public health emergencies like COVID-19, may have adverse consequences on child and adolescent mental health and wellbeing. Hence, this multimethod qualitative study aimed to explore the consequences of school closures and infection control measures on the mental health and wellbeing of children and adolescents during COVID-19 from the perspectives of education professionals.

**Methodology.** A study sample derived from the Safe reopening of schools' study was analyzed. A total of 103 survey responses together with 10 semi-structured interviews with education professionals working with schools were included in this study. Survey responses and interviews were analysed separately using a thematic analysis approach.

**Findings.** According to education professionals globally, school closures together with infection control measures during COVID-19 can have negative consequences on student mental health and wellbeing. Online learning was experienced as a driver for the increase in mental distress among students. However, infection control measures were also experienced as an enabler to keep schools open during a pandemic, which could mitigate the adverse consequences of school closures.

**Conclusion.** Altogether these findings can be used to explore alternatives to closing schools fully and transitioning to online learning during a global public health crisis. Addressing child and adolescent mental health and wellbeing, keeping schools open together with restrictive measures could be a better alternative than transitioning fully into online learning during a pandemic.

**Keywords:** safe reopening of schools, children and adolescents, mental health, NPIs, school closures, infection control measures, qualitative research, global

# Acknowledgments

I would like to thank all those who helped me during the completion of this Master's thesis.

First, I want to give my sincerest appreciation to my supervisor Terje Andreas Eikemo, Professor in Sociology and Political Science, Department of Sociology and Political Science and Leader of CHAIN – Centre for Global Health Inequalities Research Health, Norwegian University of Science and Technology, Trondheim, Norway – thank you for believing in me and guiding me through the process of writing this thesis.

I also want to thank the UNESCO Chair on Global health and Education/ WHO Collaborating Centre, especially Goof Buijs, Manager, UNESCO Chair GHE and Nicola Gray, Affiliated Researcher, UNESCO GHE, for including me in the Safe reopening of schools -study.

I am also very grateful for Catherine Chabot, CACIS Chair Coordinator and Research Officer, Public Health Research Centre, Université de Montréal and CIUSSS du Centre-Sud-de-l'Île-de-Montréal, who worked hard with providing me the dataset for this study.

Finally, I want to thank my family, friends and partner for always being there for me and supporting me. Without you, I would not be where I am today.

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## List of Abbreviations

|        |  |
|--------|--|
| WHO    | World Health Organization  |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| GDPR   | General Data Protection Regulation                               |

# Operational definitions

**Child.** "Child is a human being between the stages of birth and puberty, or between the developmental period of infancy and puberty." (Rathus, 2013)

**Adolescent.** "Adolescence is the phase of life between childhood and adulthood, from ages 10 to 19. It is a unique stage of human development and an important time for laying the foundations of good health." (WHO, 2019)

**Student.** "A student is primarily a person enrolled in a school or other educational institution and who is under learning with goals of acquiring knowledge."

**School-aged child.** "A school-aged children refers to children of ages 6 to 12."

**COVID-19.** "Coronavirus disease 2019 (COVID-19) is a contagious disease caused by a virus, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was identified in Wuhan, China, in December 2019. The disease spread worldwide, leading to the COVID-19 pandemic." (WHO, 2020)

**Pandemic.** "A pandemic is an epidemic of an infectious disease that has spread across a large region, for instance multiple continents or worldwide, affecting a substantial number of individuals." (Downs, 2005)

**Non-pharmaceutical interventions.** "Non-pharmaceutical Interventions (NPIs) are actions, apart from getting vaccinated and taking medicine, that people and communities can take to help slow the spread of illnesses like pandemic influenza (flu). NPIs are among the best ways of controlling pandemic flu when vaccines are not yet available." (CDC, 2020)

In this study context, non-pharmaceutical interventions include school closures and infection control measures.

**School closures.** "Schools are considered 'fully closed' when the closures affect most or all of the schoolchildren enrolled at pre-primary, primary, lower and upper secondary levels. 'Partial closures' refer to situations in which schools are either closed in some of a country's administrative units, for some grade levels, or are operating with limited capacity. 'Fully open' means that classes are held in-person for all schoolchildren and at all grade levels." (UNESCO, 2022)

**Infection control measures.** "Infection control measures are a series of preventive measures taken in order to limit the spread of an infectious disease." (Folkhälsomyndigheten, 2022)

In this study context, infection control measures refers to social distancing, handwashing, use of masks, organisational changes and COVID-19 screening by mass testing.

**Mental health.** "Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices." (WHO, 2019)

**Wellbeing.** "Wellbeing refers to what is intrinsically valuable relative to someone. So, the wellbeing of a person is what is ultimately good for this person, what is in the self-interest

of this person. Wellbeing can refer to both positive and negative wellbeing.” (Headey, 1984)

**Mental distress.** “Mental distress or psychological distress encompasses the symptoms and experiences of a person's internal life that are commonly held to be troubling, confusing or out of the ordinary. Mental distress can potentially lead to a change of behavior, affect a person's emotions in a negative way, and affect their relationships with the people around them.” (Goldberg, 2000)

**Mental disorders.** “There are many different mental disorders, with different presentations. They are generally characterized by a combination of abnormal thoughts, perceptions, emotions, behaviour and relationships with others. Mental disorders include: depression, bipolar disorder, schizophrenia and other psychoses, dementia, and developmental disorders including autism.” (GBD, 2018)

**Online learning.** “Online learning is education that takes place over the Internet. It is often referred to as “e- learning” among other terms. However, online learning is just one type of “distance learning” - the umbrella term for any learning that takes place across distance and not in a traditional classroom.” (Tettegah, 2015)

**Inequality.** “Inequality refers to the phenomenon of unequal and/or unjust distribution of resources and opportunities among members of a given society.” (Kobayashi, 2019)

**Digital inequality.** “Digital inequality refers to differences in the material, cultural and cognitive resources required to make good use of information and communication technology (ICT).” (OECD, 2015)

**Digital illiteracy.** “A lack of ability and skills to create, evaluate, learn, and find information on online media and digital platforms through the usage of technology.” (Demir et al., 2021)

**Global north and Global south:** “The concept of Global North and Global South (or North–South divide in a global context) is used to describe a grouping of countries along socio-economic and political characteristics. The Global South is a term often used to identify the regions of Latin America, Asia, Africa, and Oceania. The Global North (often equated with developed countries). As such, the term does not inherently refer to a geographical south; for example, most of the Global South is geographically within the Northern Hemisphere.” (Hollington, 2015)

**Low- and middle-income countries:** “According to the World Bank, low-income countries are nations that have a per capita gross national income (GNI) of less than \$1,026. GNI per capita (formerly GNP per capita) is the dollar value of a country's final income divided by its population. The world's middle-income countries (MICs) are a diverse group by size, population, and income level. They are defined as lower middle-income economies - those with a GNI per capita between \$1,036 and \$4,045; and upper middle-income economies - those with a GNI per capita between \$4,046 and \$12,535.” (World Bank, 2021)

**High-income countries:** “High-income economies are those with a GNI per capita of \$12,696 or more.” (World Bank, 2022)

# 1 Introduction

In March 2020, the World Health Organization announced that the coronavirus disease 2019 (COVID-19) outbreak caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) could be characterized as a pandemic (WHO, 2020). With the aim to control the spreading of the virus, most schools and learning institutions closed (UNESCO, 2020).

Non-pharmaceutical interventions (NPIs) including school closures and infection control measures, e.g., handwashing, use of face masks and social distancing can be an effective mitigating tool to slow the spread of an infectious disease (Jackson et al. 2013; Viner et al. 2020). However, whether to close schools or not should always be carefully considered. School closures could have long lasting adverse consequences on children's learning and wellbeing that would likely outweigh the benefits (van Lancker & Parolin, 2021; ECDC, 2020).

Furthermore, for children and adolescents, school is not only a place for learning, but also a place for healthy eating, close peer relationships and a place that can act as a protective factor for mental health problems (Gilligan, 1997; Viner et al., 2020). Moreover, not allowing children to attend school may have several negative consequences and lead to an increase in mental health problems in school-aged children. Education is one of the strongest determinants of health, hence there are strong reasons to be concerned about the consequences of widespread school closures (WHO, 2008). Thus, the overarching aim for this study was to explore the consequences of school closures and infection control measures on the mental health and wellbeing of children and adolescents during COVID-19 from the perspectives of education professionals.

## 1.1 Background

This chapter provides a review of the background concepts upon which this study was based on.

### 1.1.1 Child and adolescent mental health and wellbeing

The World Health Organization (WHO) describes mental health and wellbeing as being "fundamental to quality of life, enabling people to experience life as meaningful and to be creative and active citizens. Mental health is an essential component of social cohesion, productivity, and peace and stability in the living environment, contributing to social capital and economic development in societies" (WHO, 2005). Good mental health can be defined as a state of well-being in which every individual realises their own potential, can cope with the normal stresses of life, can work productively and fruitfully, and can contribute to their community (WHO, 2014). Mental health conditions compose a major burden of disease for both children and adolescents globally. In their report on adolescent health, the World Health Organization has projected that over fifty percent of all cases of mental disorders begin during adolescence, and the majority remain untreated well into adulthood (WHO, 2014).

The risk and protective factors for children and adolescent mental health outcomes differ depending on their age (Kieling et al., 2011). For children of 0-5 years, the home environment is key for their wellbeing and healthy growth. Together with other caregivers, parents shape their child's development and behaviour through adequate nutrition, nurturing and a safe home environment (Sharma et al., 2021). For children of 5-9 years, broader influences start taking a more obvious role. School, peers, teachers and the neighbourhood environment all have an influence on the child entering middle childhood. Moreover, while interacting with others, the child starts learning new concepts, social norms and skills and developing a sense of self and awareness (Kieling et al., 2011). The child's development is strongly influenced by caregiver factors, including parenting style, caregiver mental health, witnessing or experiencing violence (intimate partner violence or violent discipline). Furthermore, both online and offline peer and teacher relationships starts to influence behaviours and wellbeing (Knerr et al., 2013).

Adolescence is a key phase of human development and biological and psychosocial changes that take place affect every scope of adolescents' lives. In early adolescence (10-14 years) individual, home, school and community factors all interact to influence their mental health and psychosocial wellbeing (Idele et al, 2022). At this stage, the onset of puberty brings unique mental health challenges combined by physiological and emotional transitions, as well as self-image, identity issues and risk-taking behaviours. In addition, relationships and social roles take prominence, and school and community environments and networks become important influenced on adolescent mental health and psychosocial wellbeing (Idele et al., 2022). For adolescents of 15-19 years, the community and social and cultural expectations of acceptable behaviour, gender norms and roles, including pressure to marry, get employment and a need for social and economic independence takes prominence. Psychological and emotional transitions, as well as self-image, identity issues and risk-taking behaviours (including substance use and sexual activity) may arise during this period. Further, adolescence is an important time for laying the foundations of good health in adulthood. Health problems that arise during adolescence, can have a large impact on the physical and cognitive development later in life (WHO, 2014).

### 1.1.2 Child and adolescent wellbeing in relation to pandemics

Disasters and public health emergencies like pandemics have a wide range of effects that influence child and adolescent development generally, including their physical and mental health (Noffsinger et al., 2012; Weems et al., 2009). For example, exposure to mass media coverage of crisis event and misinformation on social media due to increased use, may exacerbate the mental distress in children and adolescents (Dalton et al., 2020; CDC, 2020). Children and adolescent responses to a crisis depends widely on their prior exposure to emergency situations, physical and mental health, socio-economic situation of the family and cultural background (Dalton et al., 2020; CDC, 2020).

Disasters affect children and adolescents both an individual and interpersonal level including the child's direct environment such as family and friends, the household and community levels including schooling, health care and access to contact with community and religious organizations. Furthermore, disasters cause such widespread disruptions to all these levels, they inevitably may affect the mental health and wellbeing of children and adolescents, both in the short term and long term (Williams et al., 2008). Moreover, prenatal disaster exposure has been linked with child and adolescent mental health problems in the long term, comprising developmental regression, sleep problems,

clinginess, separation anxiety, altered play, somatization/ pains, or aggressiveness (Hamiel et al., 2017).

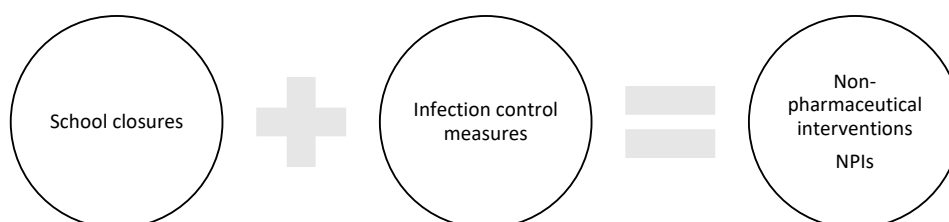
Furthermore, the development of skills and abilities that are critical for wellbeing in later life, e.g., emotion regulation and language, may be disrupted by disaster exposure (Hamiel et al. 2017). In older children and adolescents, there is a strong link between disaster exposure and the development of post-traumatic stress disorder (PTSD) (Dube et al., 2018), but also with anxiety disorders (Rubens et al. 2018; Mambrey et al. 2019), physical health problems (Felix et al., 2020), and poorer cognitive and social outcomes (Castaño et al., 2016). Furthermore, disaster exposure has led to less specific reactions such as withdrawal, sadness, decreased activity, poorer school performance, and fixation with the disaster event.

A systematic review by Cénat et al. (2020) showed that countries affected by Ebola virus disease outbreaks reported wide-ranging prevalence rates for anxiety, from 28% to 83%, and depression, 12% to 75%, in individuals across all age groups. These numbers indicate a large unaddressed burden of mental health in these populations (Cénat et al., 2020). Moreover, evidence from previous pandemics implies that social isolation and loneliness increase the already high risk for depression in children and adolescents several months to several years later (WHO, 2020; Patel et al., 2013; Loades et al., 2020).

In a study where Sprang and Silman (2013) measured the psychosocial impact the H1N1 pandemic had on children, parents reported that the pandemic had a significant impact on their child's mental health. Further, nearly one-third of the children who experienced isolation or quarantine demonstrated symptoms that met the overall threshold for PTSD and showed significantly higher rates of PTSD symptoms on all subscales (Sprang & Silman, 2013).

### 1.1.3 School closures due to a public health crisis

Closing schools due to a public health crisis is part of several other non-pharmaceutical interventions (NPIs). NPIs are actions taken on both an individual and community level to help slow down viruses (see figure 1). NPIs can include e.g., social distancing, strict hand hygiene, respiratory etiquette, use of face masks, working from home, school closures and online learning (ECDC, 2021). In addition, it has been criticized that school closures are often initiated too late in a reactive manner rather than as a pro-active strategy



**Figure 1. NPIs in study context**

(Cauchemez et al., 2009). When deciding whether to close schools, key considerations should include the case fatality rate and the infection rate among youth (Cauchemez et al., 2014).

During the 2013-2016 Ebola pandemic in West Africa, the intensity and length of school closures were close to what they have been during COVID-19. Moreover, this Ebola pandemic had more cases, deaths, and recoveries than all other prior Ebola outbreaks combined (Shultz et al., 2016). Also, this time Ebola crossed national boundaries and spread across 10 countries. In three countries schools closed for seven to nine months and the education of an estimated 5 million children was influenced by the shutdowns (Rohwerder, 2020).

The transmission of the H1N1 virus was mostly focused on children, which makes its characteristics different from COVID-19 (Fraser et al., 2009; Ghani et al., 2010). The low severity and high transmission, especially in children, of H1N1 led the pandemic into a grey zone for scientific advisers and decision makers (Cauchemez et al., 2014). Further, school closures happened in hope to have an impact on the transmission, but the relevance of school closures during the H1N1 pandemic remains vague (Cauchemez et al., 2014). However, in eight countries school closures only lasted an average for three to eight days. While in Mexico, where the pandemic had its start, the school closures lasted for 14 days (Herrera-Valdez et al., 2010).

Evidence from past pandemics suggests that closing schools can have a significant effect on reducing infection rates and flattening the curve (Ferguson et al., 2006). However, in certain countries, literature from past pandemics show that closure of schools has not had an impact on epidemic control (Joseph et al., 2020).

#### 1.1.4 The role of schools in child and adolescent wellbeing

For children and adolescents, schools are an essential source of health and mental health service and support. Schools provide a range of services that can help to mitigate the impact of health issues and barriers to learning that children and adolescents face (Hoffman et al. 2020). Among these health issues are untreated mental health and behavioural problems; physical inactivity and obesity and persistent hunger and poor nutrition. These challenges pose considerable nonacademic barriers to learners, especially in vulnerable populations (Hoffman et al., 2020).

Furthermore, schools work as a protective factor for students' social, emotional, and physical wellbeing (Gilligan, 1997). Hence school closures may be problematic as schools are one of the most important institutions that address children's mental health needs. Already from a young age, children face mental health needs that are directly addressed by school-based services. Almost 20% of children aged 2-8 years are diagnosed with a mental, behavioral, or developmental disorder (Cree et al., 2018). Although behavioral problems are more common among younger children, diagnoses of anxiety and depression increase as children enter adolescence (Ghandour et al., 2018).

In addition, since children spend a large proportion of their childhood in schools, school is a crucial place for health promotion among children and adolescents. Moreover, health and education are inherently linked and poor physical and mental health affects academic performance of children and adolescents (Suhrcke & Paz Nievas, 2011). Thus, improvements in health bring education benefits (Basch, 2011; Durlak et al., 2011).

## 1.2 Purpose of the study

This section describes the aim and objectives that guided this research study.

### 1.2.1 Aims and objectives

The overall objective for this study was to generate understanding on the consequences of non-pharmaceutical interventions on child and adolescent mental health and wellbeing during COVID-19.

This study was guided by the following research aims:

1. Explore the consequences of school closures and infection control measures on the mental health and wellbeing of children and adolescents during COVID-19 from the perspectives of education professionals.
2. Explore how education professionals have experienced online learning during COVID-19 and their perspectives on its influence on mental health and wellbeing.

## 1.3 Thesis structure

In the introduction, the scientific background and the purpose of this study are presented. The literature review to follow explores the scientific literature in the context of COVID-19. Then, a methodology section follows to illustrate how this study was undertaken by explaining the study design, data collection and analysis methods and the ethical considerations that were made. The findings chapter introduces survey respondents and interview participants demographics and findings from both the survey and in-depth interviews. The findings then present education professionals' perspectives on the consequences of infection control measures and school closures on child and adolescent mental health and wellbeing. In the discussion, the study findings are examined considering the scientific context and evidence. Finally, the conclusion then summarizes the whole research study and presents suggestions for future research.

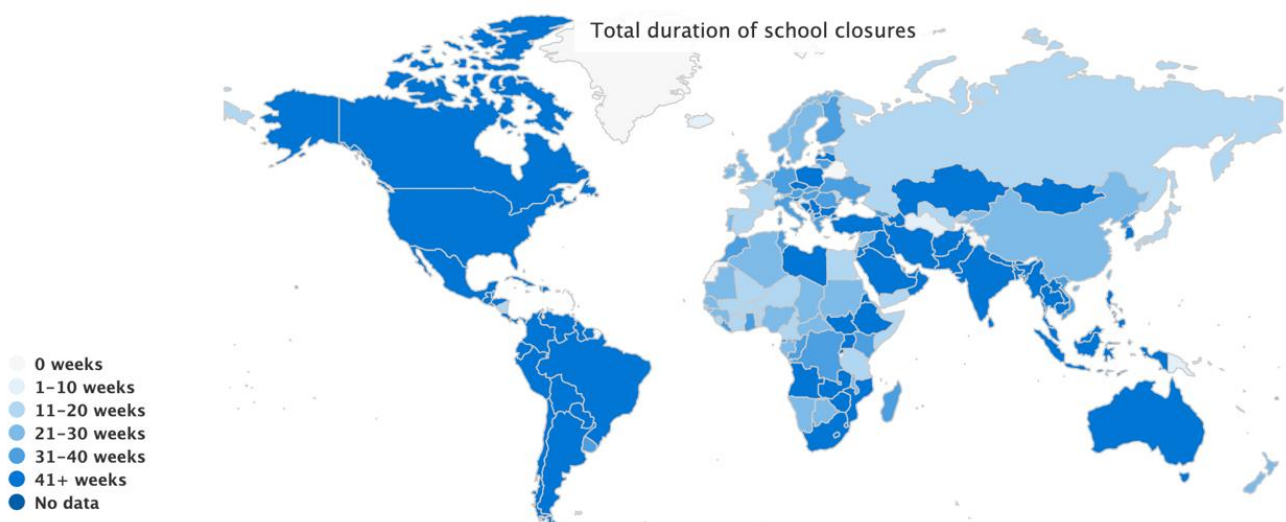


## 2 Literature review

This chapter begins by reviewing the scientific literature on school closures globally during COVID-19, and COVID-19 infection characteristics in children. Following it provides an overview of the literature on child and adolescent mental health and wellbeing during COVID-19 and a review of the online learning environment during COVID-19.

### 2.1 School closures globally

Across the world, schools have been fully or partially closed for an average of 39 weeks due to COVID-19 (see figure 2). The length of these school closures has varied by region with many poorer countries having a more severe impact on their education systems. School closures affected more than 90% of the world's learners – 1.5 billion children and young people (UNESCO, 2020).



**Figure 2. Total duration of school closures (UNESCO)**

The COVID-19 differs from previous large-scale health crises with the length and breadth of school closures. Prior to this, school closures due to seasonal or pandemic influenza have almost never lasted longer than 14 days (Jackson et al., 2013). Several countries experienced more than 50 weeks of school closures. For example, Nepal has had 61 weeks of closures and in the United States schools were partially or fully closed for 56 weeks from March 2020 to May 2021 (Sievetzen, 2021). Moreover, there have been some considerable within-continent variation and e.g., in Uganda schools have been partially or fully closed for 59 weeks, compared with Burkina Faso with 'only' 13 weeks of closures. There has also been substantial geographic variation in how many weeks of school children have missed due to the pandemic. In Africa and the Arab countries, the average for missed school weeks were 29, while in Latin America and the Caribbean the average is 51 weeks missed.

Further, there have also been substantial within-region variation in missed school weeks with African and Arab countries that had more weeks of school closure than the average for Latin America and the Caribbean (Sievetzen, 2021).

Prolonged school closures have been one of the most disruptive forces in the COVID-19, hence considerably changed the daily lives of children and adolescents. Further, it has left teachers and professors forced to decide quickly how to remotely educate students (Bohl, 2020; Robles, 2020; Schwartz, 2020). Current modelling studies during the COVID-19 pandemic show that school closures can control the spread of infection and mortality, but only to a small extent, way lower than various social distancing measures (Viner et al., 2020).

## 2.2 Online learning as an alternative to in-person learning

Several countries have activated measures to maintain the continuity of learning during the school closures due to COVID-19. These measures provide different types of distance learning, which enables communication and exchange during the learning process despite the separation, using media and technologies (UNESCO, 2020). There is no standard model of home-based distance learning, and hence schools are delivering education remotely, through a mix of technologies, such as online platforms, television, and social networks to guarantee the continuity of curriculum-based study and learning from the students.

Furthermore, some schools have attempted to reproduce the structure of a classic face-to-face lesson using learning platforms via the web, while others have chosen web-based exchanges using social media or e-mail. In Italy the public television implemented the programming of academic contents to aid disadvantaged students who are not able to attend online schools (Giuffrida, 2020; D'Addio, 2020; Becker et al., 2020).

Moreover, the effectiveness of distance learning strategies varies a lot. Variables such as the availability of digital learning platforms, the presence in the household of digital devices and internet connectivity, the students' ability to use these instruments, adequate spaces in the home, in addition to other variables such as the capacities of the teachers to use technologies and methodologies for activating and facilitate home-based learning are central for the good outcome of school at home (King et al., 2017; Marques de Miranda et al., 2020). However, the success of distance learning is dependent on students psychological and emotional experiences to new daily routines, their motivation to study amidst of a disaster or health crisis and the presence of disorders that may make learning more difficult (Becker et al., 2020).

## 2.3 COVID-19 and infection characteristics in children

Addressing a normal influenza, children are thought to be important vectors of transmission - more infectious and prone to most influenza strains than adults (Fraser et al. 2009). However, research shows that with COVID-19, children often have milder cases and almost no deaths (Ludvigsson, 2020), which implies that if children infect other children, it should not have an impact on overall COVID-19 mortality. Children, especially those younger than 10-14 years, appear to be less prone to SARS-CoV-2 than adults 20 years and older, which would hence lead to lower prevalence among children and fewer opportunities for onward

transmission (ECDC, 2020). Still, children with underlying health conditions are at increased risk of severe COVID-19 disease (Sinha et al., 2020).

Furthermore, existing evidence shows that there is limited spread of COVID-19 between children and from children. Juutinen et al. (2021) study findings show that the closure of lower secondary schools in Finland had no impact on COVID-19 incidence in 13–15-year-olds (Juutinen et al., 2021). Children are also more likely to have social contact with peers and with their parents than with older people or their grandparents, who can be at risk of severe disease (Mossong et al., 2008).

In addition, research suggests that children with COVID-19 rarely cause outbreaks. For example, in Australia, nine high-school students were confirmed with COVID-19 and had contact with 735 students and only two children may have contracted COVID-19 from these initial school cases (NCIRS, 2020). However, children play a major role in the household transmission of influenza, which means that school closures would not necessarily limit COVID-19 transmission in society more than marginally (Hoffman et al., 2020).

## 2.4 Child and adolescent wellbeing during COVID-19

Children's and adolescents' daily lives and routines have been significantly disrupted by the COVID-19 pandemic. The closure of schools, childcare facilities and universities has led to substantial learning and academic loss. Furthermore, length of quarantine, fear of infection, boredom, frustration, lack of necessary supplies, lack of information, financial loss, and stigma may increase the risk of negative psychological outcomes (Brooks et al., 2020). Hence, social distancing and school closures may exacerbate mental health problems in children and adolescents (Deighton et al., 2019).

### 2.4.1 Increase in mental health challenges

The COVID-19 pandemic and its response measures has exacerbated many of the mental health challenges due to loneliness, social isolation, pre-existing conditions, increased violence in the home, loss of family members, loss of family income and livelihoods, and increased inequalities (Salari et al., 2020).

In several parts of the world, children are already exposed to different and intersecting stressors that increases vulnerability towards mental health problems, such as chronic poverty and subsistence living, child labor, protracted violence, and conflict and displacement. In their qualitative study Banati et al. (2020), findings suggest that the pandemic and the public health response will have adverse consequences especially vulnerable adolescents, in terms of anxiety and stress, limited access to youth friendly health services, education services during school closures and peer networks (Banati et al., 2020).

According to a UNICEF report, conducted by Sharma et al. (2020) non-pharmaceutical interventions (NPIs) during COVID-19 worsened children and adolescents' negative emotions and behaviors, such as anger, irritability, negativity, hostility, and aggressive behavior (Sharma et al., 2021). The measures taken has resulted in changes in sleeping patterns, dietary habits and in the use of screens (Sama et al., 2020). Moreover, emotional management and worsened behaviors are likely to be driven by changes in daily routine, disruption to ongoing mental health and other services, the shift to online learning, overall uncertainty, and more restrictive living conditions.

Moreover, a meta-analysis conducted by Racine et al. (2021) found that during the COVID-19 pandemic, depression and generalized anxiety symptoms elevated globally among youth. The pooled prevalence of clinically elevated depression and anxiety symptoms was 25.2% and 20.5% respectively. Hence, 1 in 4 youth globally are experiencing clinically elevated depression symptoms, while 1 in 5 youth are experienced clinically elevated anxiety symptoms. Compared to prepandemic estimates, these findings suggests that youth mental health difficulties during the COVID-19 pandemic have likely doubled (Racine et al., 2021). Loades et al. (2020) conducted a rapid systematic review where the findings suggest that the NPIs taken to contain COVID-19 have led to increases in loneliness and isolation and that over one-third of adolescents reported high levels of loneliness (Loades et al., 2020). Especially quarantined adolescents had experienced greater psychological distress, including sadness, compared to non-quarantined youth (Loades et al., 2020). Studies also show that alcohol and substance use, and abuse have increased during the COVID-19 pandemic among adolescents and young people, which can be associated with other negative mental health issues (Sharma et al., 2021).

The COVID-19 pandemic has forced many families to stay isolated at home, under great stress and unable to receive in-person support. Social isolation, quarantine and inability to use familiar coping mechanisms such as taking personal space, visiting friends and family among other activities may exacerbate the impact of these stressors (Imran et al., 2020). Further, parents and caregivers are experiencing loss of control, job insecurity and job loss together with job stress, while they took on the role as educators (UNCIEF, 2021). Children need supportive, stable and nurturing caregiver relationships to foster trust, positive social-emotional development, and the capacity to form a secure and strong relationship in the future (Honig, 2002). A disaster such as the COVID-19 pandemic may cause parents and caregivers to become worried and fearful about their own health and economic situation. In addition, research show that fear can be contagious and children are extremely sensitive to the emotional state of the adults around them, who are their essential source of security and emotional wellbeing (Imran et al., 2020; Spinelli et al., 2020). Moreover, Viner et al. (2020) made a comprehensive systematic review where the findings suggest that all the harms on children and adolescents during the COVID-19 pandemic had occurred during school closures and social lockdown (Viner et al., 2020).

#### 2.4.2 Online learning

Although digital tools allow students to engage on both social and educational purposes and keeping them connected, increased digital use is also linked with sedentary behaviors and may expose children and adolescents to anxiety-provoking media reports and other cyber-ills, e.g., gambling, cyberbullying and online predators (Sharma et al., 2021). In a meta-analysis conducted by Rodriguez-Ayllon et al. (2019), findings imply that there is a positive association between sedentary behaviours and increased depression and anxiety in both children and adolescents (Rodriguez-Ayllon et al., 2019). Furthermore, school closures may have larger negative consequences on the most vulnerable who are dependent on resources provided by their schools (Hoffman et al. 2020). These include students with limited access to technology e.g., laptops, broadband internet, and data plans and students whose parents or caregivers are less engaged or available to assist with remote learning (Abuhammad, 2020; Sharma et al., 2021). Low-income households might not be able to afford the best connection both in terms of speed and data usage, without sacrificing essential spendings (Beaunoyer et al., 2020). While the use of technology increased during the COVID-19 pandemic, so does the consequences of digital inequalities.

Moreover, digital settings have become essential to maintain daily life activities, education, work, services or entertainment making digital inequalities one of the main determinants of wellbeing (Beaunoyer et al., 2020). Health systems are already experiencing difficulties to properly answer the burden of mental health disorders (WHO, 2013). Social distancing measures and school closures increase the weight of technology to pursue psychological therapeutic services, which will reinforce the negative consequences of digital inequalities (Beaunoyer et al., 2020).

## 3 Methodology

This chapter describes the research project from which the study sample was derived, the study design, the methodology of data collection and analysis and the ethical considerations in this project.

### 3.1 Research project

#### 3.1.1 Second survey on the safe reopening of schools

The second survey on the safe reopening of schools was active from February to October 2021. The aim of the survey was to gather the experiences and opinions of education and health professionals about the processes in place in their countries and territories to reopen schools safely during the COVID-19 pandemic, and to keep them open. In collaboration with the Consortium partners, the survey has been disseminated all around the world in seven languages (Arabic, English, French, German, Mandarin, Portuguese and Spanish). In addition, 98 semi-structured interviews of approximately 30 minutes were conducted between March and December 2021 in six languages (Arabic, English, French, Mandarin, Portuguese and Spanish) with both education and health professionals.

The survey is conducted by the UNESCO Chair and WHO Collaborating Center in Global Health & Education with the support of its consortium partners from ASCD, CHAIN, Education International, EUPHA Child and Adolescent Public Health, EUPHA Health Promotion, GCU London, IAAH and their Young Professionals' Network, IUHPE, NCD Child, UCA and the SHE Network.

#### *UNESCO Chair Global Health and Education*

UNESCO Chair / WHO Collaborating Centre Global Health & Education aim to promote intersectoral policies and practices. The Chair encourages a strategy of social change by introducing an innovative way of practicing health promotion, prevention and health education. It combines the knowledge of health determinants with social-cultural practices. This leads to a balanced approach between environmental changes and capacity building. The Chair's vision is to create the conditions for children and young people to take charge of their lives and develop as individuals, as members of their community and as global citizens for all matters related to health (UNESCO Chair GHE, 2021).

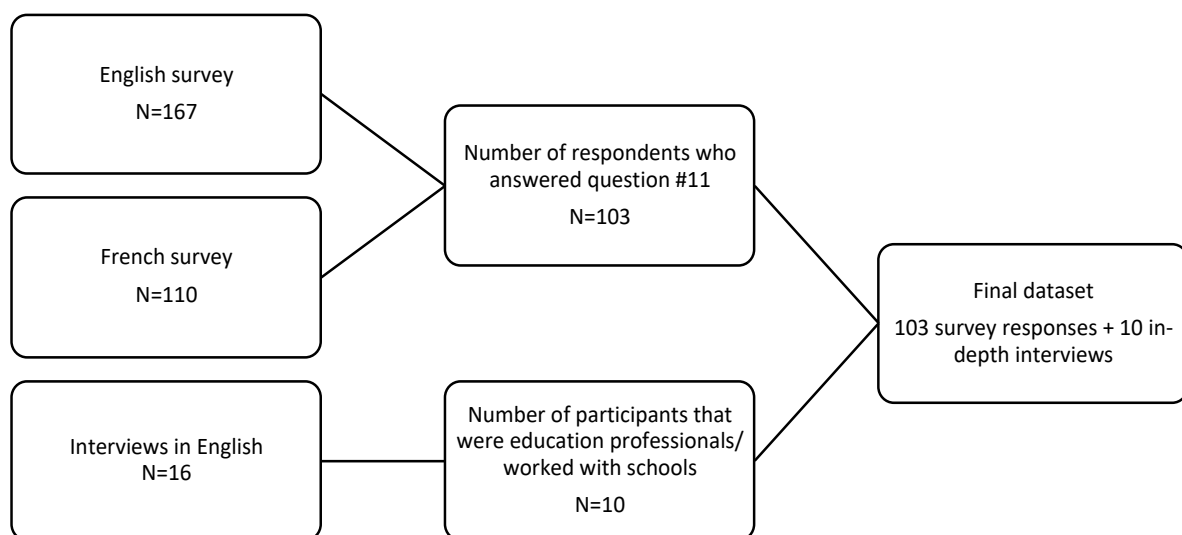
#### *CHAIN – Centre for Global Health Inequalities Research*

CHAIN is the Centre for Global Health Inequalities Research and was officially launched in 2017 at the Norwegian University of Science and Technology (NTNU). The mission of CHAIN is to create a global transformation in actionable health inequalities research. Acting as a change agent and bringing together leading scholars and international organizations, it monitors, explains and reduces health inequalities in the global North and South (CHAIN, 2017).

### 3.2 Study design and study population

The Safe reopening of schools’ study is a mixed method research study that used a quantitative/ qualitative explanatory two-phase design to explore the education and health professionals' experiences and views about the safe reopening of schools. The qualitative (interview) data has been used to illuminate and build upon the initial quantitative (survey) data. Combining qualitative and quantitative data provide a more complete picture of professionals' experience than using a single method (Pommier et al., 2010) and help to counteract the weaknesses of both quantitative and qualitative research (Creswell & Clark, 2017).

The survey got 1676 valid responses from 72 countries. In addition, 98 semi-structured interviews were conducted with both education and health professionals. This current study included responses from the French and English survey (n=277). Criteria for inclusion was a valid response on question number eleven, which resulted in 103 responses included in this study. From 16 semi-structured interviews, 10 were included in this study with the inclusion criteria that the participants had to be education professionals (see figure 3).



**Figure 3. Inclusion criteria for final dataset**

This study is a multimethod qualitative descriptive study, a flexible and versatile design that is useful for describing events and experiences and the importance placed on them by research participants (Doyle et al. 2020). This study includes a cross-sectional survey and semi-structured online qualitative interviews. Descriptive research is a most basic type of enquiry that aims to observe a certain phenomenon. The goal with multimethod research is to emphasize the advantages of combining different qualitative methods in order to investigate the multiplicity and the contingency of the social world (Moran-Ellis et al., 2006). Further, using different qualitative methods, all based on the same epistemological perspective (Jutesen & Mik-Meyer, 2012), may strengthen the quality of the research, as different methods allow for different angles and nuances to be visible (Essén & Sauder,

2017; Kolner et al., 2014; Tierney et al., 2019). Combining open-ended survey answers with in-depth interviews allows the researcher to get multiple perspectives to the phenomenon of interest.

A multimethod qualitative descriptive design was utilised because, often, child and adolescent mental wellbeing is measured by employing quantitative methodology. Furthermore, a multimethod approach allowed a more in-depth investigation on lived experiences, in addition to the open-ended survey responses. Moreover, as perspectives on mental health and wellbeing is multifaceted and subjective, a multimethod methodology was believed to yield relevant, revealing and nuanced understandings.

### 3.3 Data collection

Present study sample was derived from the Safe reopening of schools' study. The data from the Safe reopening of schools' study includes a cross-sectional survey and in-depth interviews.

#### 3.3.1 Survey

The cross-sectional survey of education and health professionals was conducted online using Google Forms (see Appendix 1). Due to the diverse nature of the settings and backgrounds of the respondents (in terms of geographical region, area of work and type of school system), it was important to use open text questions for so that respondents could freely explain their opinions, experiences, and concerns. Instead of generating data that are representative of the international community of education and health professionals, the survey sought diversity of respondents in terms of: geographical location, professional background, type of schools in which they work (size, funding, affluence, urbanicity/rurality).

#### 3.3.2 Interviews

The education staff interviews (see Appendix 2) were conducted by university students online using the Zoom platform, under the supervision of Professor Jourdan and Dr Gray. The interviews took place at the time that is convenient to and chosen by – the participant and lasted on average 30 minutes. The interviewer took detailed field notes during the interview to note the professional's answers. The Zoom call was recorded if the participant secured the prior consent of the participant. The audio track from the recording was transcribed verbatim. Participants were recruited by two methods: by asking for volunteers at the end of the survey, and by direct recruitment through the Consortium members' networks. Data saturation for high level themes was seek.

### 3.4 Data analysis

This section explains the data analysis processes both for the cross-sectional survey and interviews, including how the data was coded, categorized and described. For the open-ended survey answers and in-depth interviews, qualitative analytical procedure was used,



consisted with thematic analysis (Braun & Clarke, 2007). However, the survey and the interview were analysed separately.

As a method thematic analysis is for identifying, analysing, and reporting themes within data. Moreover, it organizes and describes the data set in rich detail. Nevertheless, often it also goes further than this and interprets various aspects of the research topic (Boyatzis, 1998). The main researcher conducted the initial thematic analysis. Thematic analysis includes several phases: Familiarize yourself with your data, generate initial codes, search for themes, review themes, define and name themes; and produce the report (Braun & Clarke, 2007).

### ***Familiarizing with the data***

*Survey:* The dataset from the survey included in this study was exported to a MS Excel spreadsheet for analysis. All identifiers were removed, stored in a separate password protected spreadsheet and substituted with a participant code in the dataset for analysis. The main researcher familiarized herself with the data, reading actively all the 103 responses several times before she grouped them into broader categories.

*Interviews:* To become familiar with the data, interview transcripts were read in their wholeness. During this stage, the main researcher familiarized herself with the data by immersing herself in the data. She repeatedly and actively read the data and searched for meanings and patterns. Before coding, the researcher read the through the data set at least twice.

Throughout the data analysis, reflections and observations on the data were documented and paths and citations that illuminated particularly descriptive aspects of the data were identified.

### ***Generate initial codes***

Then, after the main researcher had read and familiarized herself with the data and generated an initial list of ideas about what the data consists of, she systematically generated initial codes that emerged from the data. These topics seemed important because they recurred in several instances across the dataset, were particularly significant or meaningful for the research participant or answered the research question (Braun & Clarke, 2007).

*Survey:* The main researcher determined the final coding scheme, based on the broad categories. All the responses were re-read several times by the main researcher.

*Interviews:* During the coding process, data was organized into meaningful groups that eventually developed into themes. The analysis was theory driven and the researcher approached the data with specific questions in mind that she coded around. The researcher coded to identify particular features of the data set.

All coding was done manually, without the use of any software programs.

### ***Search for themes and review themes***

When all data have been coded and collated, the codes was sorted into potential themes.

*Survey:* The process was inherent so that codes could emerge into main themes from the data.

*Interview:* The main researcher analysed the codes and considered how the different codes may combine to form an overarching theme. Moreover, during this phase the researcher started to think about the relationship between codes, between themes and different levels of themes (primary themes and sub-themes).

After finding themes, the researcher modified the themes and separates themes from themes that are not really themes, e.g., there are not enough data to support them, or the data is too diverse. During this phase, themes were reviewed and refined and if needed, broken into sub themes or separate themes.

### ***Define and name themes***

*Survey:* The main researcher decided which quotes best represented the themes and could be included as findings.

*Interview:* The main researcher defined and further refined the themes that would be presented for the analysis and analysed data within them. Identifying the essence of what each theme was about and determining what aspect of the data each theme captures.

## **3.5 Ethical considerations**

The Safe reopening of schools' study has been approved by the IRB of the University of Clermont-Auvergne n° IRB00011540-2020-65. DPO declaration n° EPE UCA-2021-006. All required information for the present analyses was available at UNESCO Chair GHE. Therefore, no study participants were contacted for additional data collection.

### **3.5.1 Participation information and consent**

All data collected, including participants' identifiers have been held and stored securely and confidentially in accordance with GDPR. Participant names and contact details were collected when a professional agreed to take part in the study; each participant was assigned a code to be used instead of their name on any documentation referring to them. Only data that is necessary to the study have been collected and stored. Personal data have only been used for recruitment purposes (e.g., to contact participants and arrange interviews). Data collected in interview notes will be stored for five years after which it will be securely destroyed. All participant identifiers were removed before the researcher got access to the data. The study sample, including the survey dataset and the interviews were password protected.

The following steps were undertaken to safeguard data collected directly from participants:

- The confidentiality of participants has been always maintained. Issues concerning confidentiality and anonymity have been explained to all study participants before informed written consent was taken. Participant data have been anonymized using unique participant identification codes. Identifiable information (informed consent sheets) has been stored separately from the participant identification codes
- Access to data is restricted to members of the study team working on data analysis.
- Electronic data from interview recordings, are held within password protected University of Clermont-Auvergne servers. The verbatim transcripts of these interviews are stored using participant identification codes. The use of encryption and passwords to restrict access is controlled that access to secure data is not compromised.
- Verbatim transcripts from interview recordings are identified only using participant codes. These are stored as Word documents and password-protected and only accessed by the research team.
- Data collected through interviews and surveys will be accessed only by the researchers involved in the study.
- The dataset used in this study is held password protected on the main researchers computer.

# 4 Findings

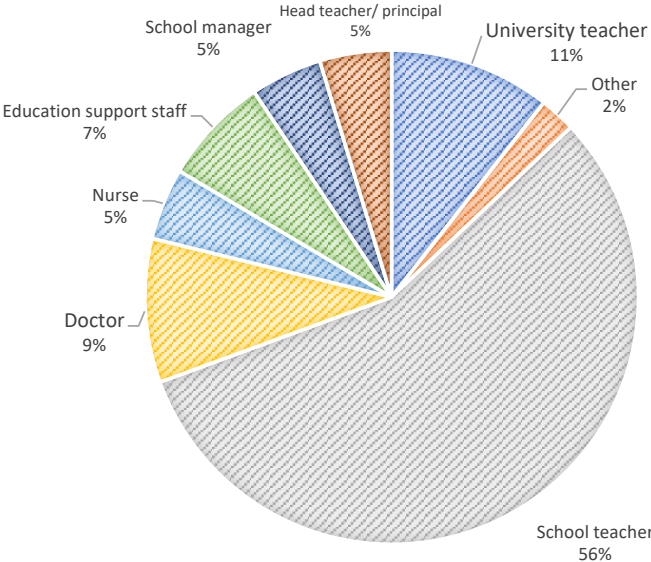
This chapter presents both findings from the survey and the in-depth interviews.

## 4.1 Survey findings

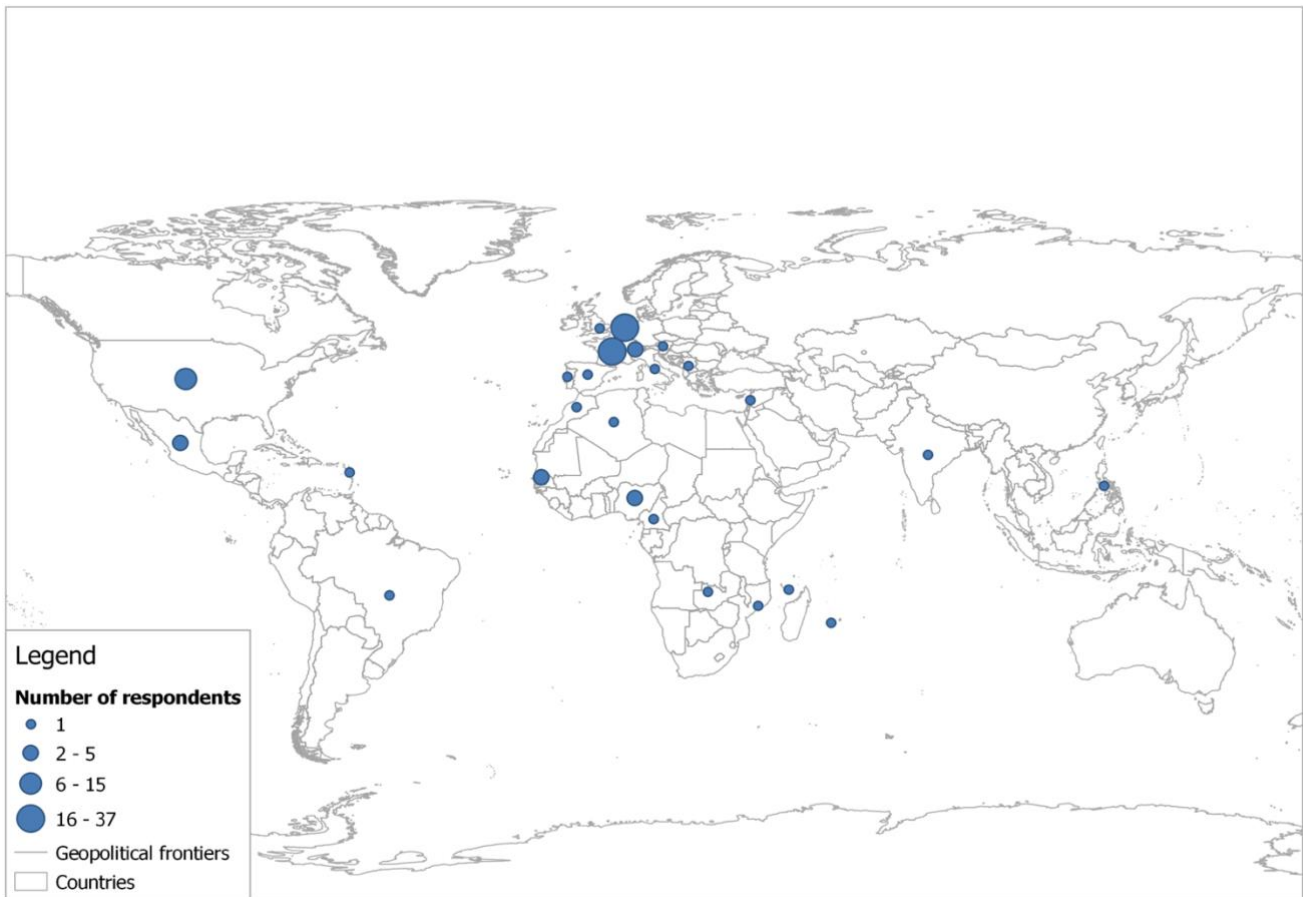
The survey findings include the demographics of respondents and education professionals experiences with infection control measures (including online learning) and on how these measures have influenced the mental health and wellbeing of students.

### 4.1.1 Description of respondents

The dataset consisted of 103 valid responses from 26 countries and territories. The map shows geographical distribution of respondents (see figure 5). More than a half of respondents work as school teacher's (see figure 4). For direct quotes used in the findings section, the country of the contributing respondent is indicated. Most respondents (76%) were in high-income countries, whereas the remaining 24 percent were in low- and middle-income countries. Majority of respondents (72%) worked within public schools, some (17%) worked within private schools, and some respondents (9%) worked within both. Respondents work across the student age range, engaging with groups from 0 to 19 years old (see table 1).



**Figure 4. Professional background of respondents**



**Figure 5. Country responses to the survey**

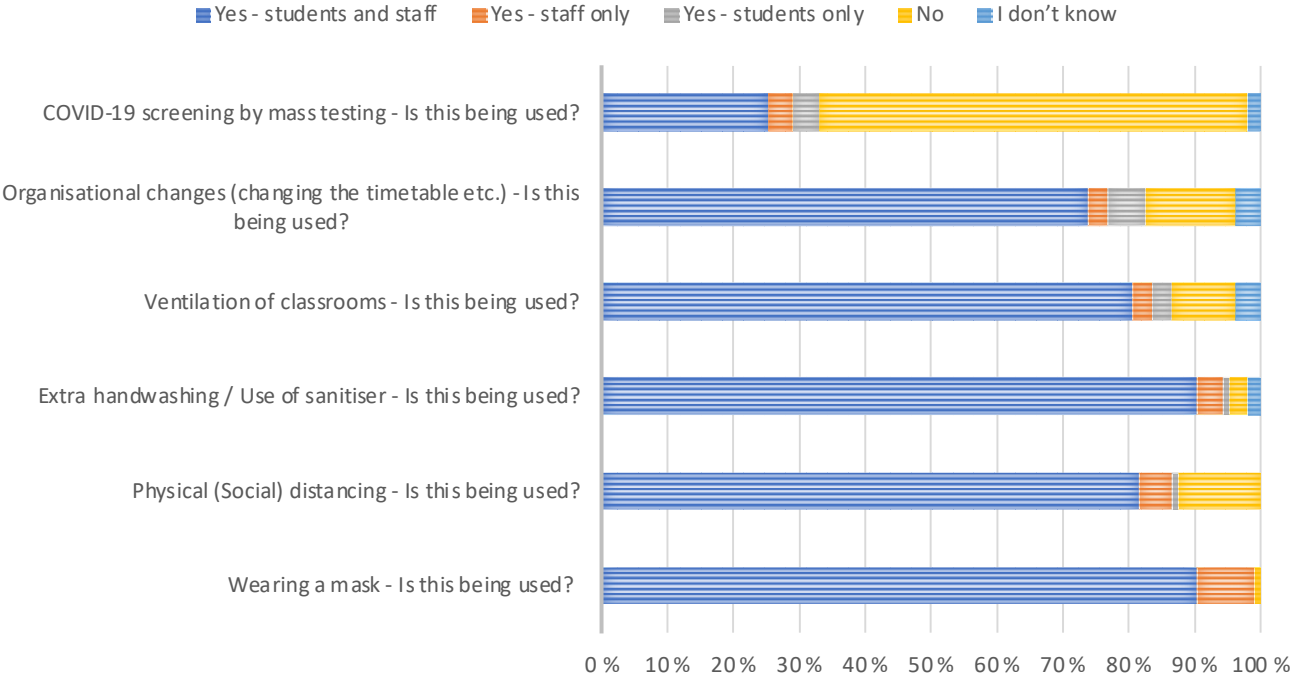
| <b>Age group</b>  | <b>% (n=103)</b> |
|---|------------------|
| All children and young people from 0-19 years   | 11               |
| Pre-school/ kindergarten/ nursery (0-5 years)   | 16               |
| Elementary/ primary school (6-11 years)   | 22               |
| Middle/ junior high/ secondary school (12-15 years)   | 14               |
| Senior high/ college*/ sixth form (16-19 years) [*but not university/ tertiary/ higher education] | 14               |
| No response   | 16               |

**Table 1. Distribution of the age groups covered by the respondents at work**

### 4.1.2 Presentation of findings

#### 4.1.2.1 Education professionals’ experiences with infection control measures

Infection control measures used in schools include COVID-19 screening by masstesting, organizational changes, ventilation of classrooms, extra handwashing/ use of sanitizer, social distancing and wearing a mask (see figure 6).



**Figure 6. Infection control measures used in schools**

Respondents’ experiences are that infection control measures are making most students uncomfortable. Furthermore, respondents noted that students are worried and stressed of the overall situation and that it can be hard for students to cope with uncertainty. Students are becoming more withdrawn – lacking openness and curiosity. The student-teacher relationship is suffering because of the masks and for some students this can be a difficult experience. Furthermore, participants noted that the lack of facial expressions because of face masks, is making the environment a lot sadder.

*"Anxious atmosphere due to the fact that the sanitary rules are repeated and that the mask is everywhere, all the time. Sadness in the exchanges due to the lack of expressiveness of the faces because of the mask (the smiles have disappeared). Lassitude and loss of energy." – France*

Respondents have noted the importance of parents support during crises like a pandemic. In addition, Infection control measures are stopping students from working out, hence respondents were concerned how the physical inactivity will influence student wellbeing. Respondents feel that all the instructions and the measures the students must follow are making them more stressed and anxious.

*"Students stressed by being confronted with instructions that are difficult to bear (wearing the mask all day) or impossible to follow (distancing instructions impossible to follow given the overcrowding of the school)."*  
- France

*"Of course, they are not doing well. Between the decompensations, the impossibility of trusting the adult who says everything and its opposite in the same week, and the ambient anxiousness, we live in hell." – France*

However, respondents also stated that infection control measures can have positive consequences on student mental health and wellbeing. For children and adolescents, the school environment is very important, and the measures are allowing students back to school.

*"The students love being at school, and the measures out in place have allowed them to come back." – France*

In addition, the infection control measures give the students a sense of safety – they do not have to worry about getting infected.

*"It's a sign to them that they are safe." – Nigeria*

*"Students feel safe." – Senegal*

Respondents stated that social distancing is against children and adolescent nature and that infection control measures are experienced as a violation against human rights. Hence, it will have consequences on student mental health and wellbeing. Respondents noted that social distancing is hard for students and may cause more signs of depression in adolescents, while younger children show more signs of restlessness. Moreover, respondents have experienced more agitation, less self-control and lack of attention among students. However, students have also shown more empathy towards each other during this time.

*"Some children were worried and stressed by the situation. Some had a very bad experience with the confinement: not seeing their grandparents and friends and not being able to go out (especially those living in apartments)." – France*

Respondents stated that social distancing also means not being able to see their grandparents, friends or going out, and that it is difficult for students. Not being able to engage normally with friends and family is experienced to cause symptoms of stress and anxiety in students.

*"Difficult. Students need interactions without barriers to build themselves." - France*

In addition, respondents noted that when students are not able to interact with peers in person, they spend more time on social media, which is making them more passive. Respondents were concerned that the pandemic will leave a generation with a fear of human touch and that the social isolation leads to increased anxiety, depression and suicidal behaviours in children and adolescents.

*"Yes, they miss the social interaction in person. Therefore more social media, less energy to get things started." - the Netherlands*

Respondents stated that infection control measures are having consequences on children and adolescents with already existing physical and mental disorders. Respondents experienced that some students have a hard time coping with the situation, which is making them see everything in a negative way. However, respondents agree students are doing their best to cope with the new set up.

#### **4.1.2.2 Education professionals' experiences with online learning**

Respondents noted that the online learning environment has had negative consequences on student mental health and wellbeing. Students are lacking concentration, feeling depressed and being offline during class – often referring to technical problems.

*"Yes. Depression. In every class one student is "offline", not reachable for different reasons. They excuse with "technical problems" but mostly there are other reasons. A few students just cannot handle to learn self-independent without "control"."- Austria*

Also, respondents stated that it has been challenging for the students to adjust to online learning settings. Students have trouble communicating and they have a fear of expressing themselves. Furthermore, respondents noted that it has made students more absent and violent. In addition, the lack of motivation in students are driving some students to dropping out of school.

*"Yes, the measures have a negative effect on student. They have trouble with motivation. They feel more isolated and lonely and depressed. Some students do not have the facilities to study at home (lack of equipment of to many people around)." – the United States*

Still, some students may thrive in an online learning environment, while other students do not.

*"Yes, some of them feel lonely, distance learning is wearing them out, concentration is in some cases non-existent. On the other hand: some pupils flourish. They have all sorts of difficulties in classrooms, packed with 30 in a room, and enjoy this, learn better, feel relaxed." – the Netherlands*



Contrarily, respondents noted that the infection control measures would not have any significant negative consequences on the mental health and wellbeing of students.

*"No... because online class was running in the place of offline." – India*

One experience was that the online learning environment would have mitigated the adverse consequences of school closures and infection control measures on student mental health and wellbeing. However, respondents stated that students' wellbeing in an online learning environment depends a lot on the situation at home and that caregiver support is vital during a crisis. Not all students have good facilities to study at home, e.g., lack of equipment and some students have an unsafe home environment making it difficult for them to thrive.

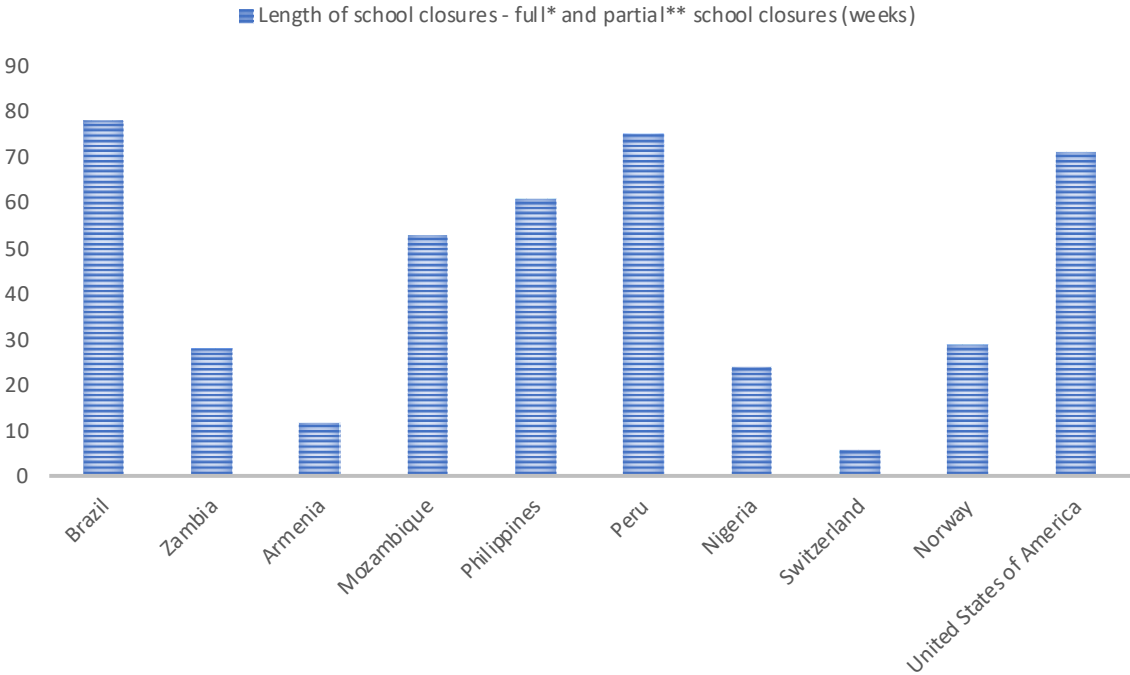
*"Pupils in an unsafe home-environment suffer the most. Often silently. We have permitted them to come to school and attend online classes from there." – the Netherlands*

## 4.2 Interview findings

The interview findings include the demographics of respondents and the perspectives of education professionals on student mental health and wellbeing during COVID-19 school closures as well as their experiences with online learning and its influence on student mental health and wellbeing. Data analysis resulted in the identification of three main themes with subcategories.

### 4.2.1 Description of participants

A total of ten interviews with education professionals were included in this study. Participants consisted of school teachers, school nurses and health professionals working with schools. To get an exhaustive understanding of the phenomenon of interest, participants from both the global north and global south were included. Seven countries out of ten are considered low- and middle-income countries: Brazil, Zambia, Armenia, Mozambique, Philippines, Peru and Nigeria (World Bank, 2020). The three remaining are considered high-income countries: Switzerland, Norway and the United States. All personal identifiers of participants were removed, including name, sex and age.



**Figure 7. Participants countries of origin and the length of school closures**

**\*Full school closures refer to situations where all schools were closed at the nation-wide level due to COVID-19.**

**\*\*Partial school closures refer to school closures in some regions or for some grades, or with reduced in-person instruction.**

## 4.2.2 Presentation of findings

### 4.2.2.1 Education professionals' experiences with NPIs

Participants were concerned about the immediate and long-term negative consequences school closures during COVID-19 could have had on students' mental health and wellbeing. Depending on country, the length of school closures has varied from 6 to 78 weeks. Participants discussed how there has been an increase in mental distress among children and adolescents. Symptoms for mental distress that participants had experienced included suicidal thoughts, self-harm, depression, insomnia, post-traumatic stress, hopelessness and anxiety.

#### 4.2.2.1.1 Increase in mental distress

Most participants expressed their concerns towards the increase of mental distress in children and adolescents because of COVID-19. School closures together with other restrictive measures was experienced as one of the factors that may have caused increased mental distress. Further, participants explained how for example social distancing has led to increased stress levels, anxiety symptoms and depression. Some participants also experienced that social distancing has led to social isolation, which resulted in increased screen time and social media use, which could have negative consequences on the mental health and wellbeing of students.

Regardless of geographical location, participants had noted similar symptoms of mental distress in students:

*"We have an increase of... suicidal rate with teenagers, we have increase of what we call self-harm, depression." - Brazil*

*"And the most frequent are anxiety, depression, insomnia, post-traumatic stress, and all that, isn't it?" - Peru*

*"So emotionally, and psychologically, we can say that some of our students here that were supposed to graduate last year, they were all like that, they were sort of hopeless." - Nigeria*

*They were under stress; it was a very tough situation for them. And the psychological price to pay for this is high." - Switzerland*

Additionally, to the experience of these immediate reactions, participants described their concerns with the long-term consequences of the pandemic. Further, one participant explained how it can be hard now to understand the long-term consequences the pandemic has had on the mental health and wellbeing of students:

*"Once we have recovered from the pandemic, we, we hope that the long term impact will not be as huge as one would expect. The the long term impact of lockdown and limitation that young people face because the schools are open, but otherwise they don't see their friends, they don't*

*go out there. I mean, it's really critical. The long term effect of this semi lockdown, I would say, on brain development, on their social life is currently difficult to gauge, to measure. I fear some long term impact on this generation, which we will I mean, measure over time, over the next couple of years probably.” – Switzerland*

However, the long-term consequences of the pandemic on children and adolescents will not be revealed until a couple of years from now. The participant also expressed that they are hopeful that the consequences will not be as huge as they fear.

#### **4.2.2.1.2 Vulnerable students particularly at risk**

Most participants mentioned that although the pandemic has had some negative consequences on the mental health and wellbeing of most students, there is a cohort of vulnerable children and adolescents who are especially at risk suffering from the negative consequences of the pandemic.

Participants described these vulnerable students at risk as indigenous children, children with existing mental health challenges, children living in poverty and children with physical or psychological disabilities:

*“I would say another subset of young people who have suffered from the lockdown and generally speaking from from all the restrictions, those vulnerable young people with mental health problems or disorders. There is a huge increase in depression that goes from 7% of the population of young people 15 to 24 last year, to around a third currently, who exhibit, a third, some some symptoms of depression or anxiety. And I mean, this is confirmed around the world.” – Switzerland*

*“Yes. Children in special needs, indigenous children, someone... is a group that we call... quilombola. Quilombola are the Afro descendants, that are in a very poor community. Through the telemedicine we have a whole group of support to these indigenous population. Very difficult times, very difficult times. Also, children I would say, with very... frequent disease, let's say, diabetes.” – Peru*

The consequences of the restrictions on these children at risk have resulted in challenging times. Further, participants discussed how the pandemic has had an impact on the economy of many families, especially those living in rural areas. Some participants from low- and middle-income countries considered the reason for school dropouts to be due to financial distress:

*“Well, I think it's a quite big, because so many parents lost their jobs and automatically, the students, some of them, I presume, those who are not coming to school, for instance, most probably it's due to financial problems at home, as their parents have lost their jobs.*

*And as you might know, students live very far from our schools, and they have to take buses and for you to take a bus you need money and so most probably, this pandemic has impacted terribly on the student side because many, many people have lost their jobs and with that, they have students, or their children have suffered. And that's why I presume some*

*students are not coming mostly because they can't afford taking buses, from their places to school, and so on.” – Mozambique*

Most of these children are living in rural areas, counting on a bus ride to make it to school. If these children cannot pay for the ride, they will not be able to get to school. Moreover, one participant was concerned how children with physical disabilities have missed out:

*“So those are the kids who completely missed out. Especially when the pandemic broke. You know that was a cohort that I will say missed the last two terms of the previous year because the American calendar is from September to June. So, when the pandemic hit in March, you know the physically challenged kids completely missed out.*

*Being in an environment where you know, you're not getting that special needs support just you know dipped so many opportunities for them..” – United States*

Having a physical disability and not getting the support in school that you are used to, can make it very hard for these students to thrive. Further, children who live in disrupted homes and at risk for violence and intra family violence, was a concern for participants:

*“And my colleague from the social field reported an increase in intra fight family violence which I mean, have been expected. So, these are different groups of people who I would consider more vulnerable than others, and who clearly have suffered from the pandemic.” – Switzerland*

*“And...yeah...For example anxiety, depression and so on. And also increase, there are cases of... family and, why not, and abuse at home, especially during the last weeks.” – Norway*

Living in a dysfunctional family during school closures makes these students especially vulnerable for mental health problems.

#### **4.2.2.2 Infection control measures as an enabler to keep schools open**

Participants experienced that the infection control measures put to place acted as an enabler to keep schools open during the COVID-19 pandemic. Participants mentioned that infection control measures gave students a sense of safety – to keep themselves but also others safe from the virus. In addition, participants experienced that infection control measures allowed them to re-open schools using a hybrid model, addressing both online schooling and in-person schooling. Participants also thought of schools as a protective factor against mental disorders and distress. Furthermore, participants thought that with the help of infection control measures in schools, students were able to spend time with their friends again, since their life outside of schools were still disrupted.

*“So, the hybrid means that they're kids who would be going to school two days in a week, then one day asynchronous as they call it and then the other lot will go two days in a week so that's where we are right now.” – the United States*

One participant explained how the hybrid school setting would work in their country and how it would allow students to go back to school. Moreover, children and adolescent's

mental health during school closures worried participants, hence they were happy that the infection control measures allowed learners to go back to school:

*"I'm happy that they kept the schools open because you know some students and some youths let me put it like that, to save the mental health of some people because at a time if you see what some people are writing on social media you see that, at a time mental health of some adolescent and youths was at stake. As you see some people depression, frustration, and even some going to the extent of writing things that you know they are quicken factor that, you know can make them to commit suicide so for me I think that reopening of that school was fine to save some situation because you need to weigh things before you choose one."*  
– Nigeria

One participant also discussed how the mental health during school closures at some point was at stake, and some students even considered taking their own life. Thus, the reopening of schools might have been crucial for many students addressing their mental health and wellbeing.

#### **4.2.2.2.1 School is more than a place where to get an education**

Participants explained how their experiences with online learning was that it is not as thorough for students as in-person learning. Participants mentioned that for children and adolescents learning itself is not enough and that the school environment also acts as an educator.

Participants explained how children and adolescent do not necessary miss school itself, but how they miss the social interactions they have with peers in school. In addition, most learners have not been happy with the online learning environment, according to a study made by a participant:

*"[...] And also, they not only miss school by itself, but also miss this atmosphere, this social networking, teachers, opportunity to speak to each other, to see each other. So, they're social persons. So, this socializing is really.. mean so much for us. So about I think more than 70 percentage of pupils participated in this survey answered that it's not a good option. It's just to understand that ,yes, you should do something, you can't just stay and do nothing during this time, but it's really like missed opportunity, for education [...]"* – Armenia

*"The second thing I would say, and this is not an acute opportunity, this is really a threat is that this learning is not enough, because young people need a concrete physical link with the peers, on one hand, with the teachers on the other hand. I have set up with the two colleagues last November a meeting on on the right of adolescence in the time of the pandemic and we had invited people from the social, the psychiatry, the school settings, I mean, it was very multidisciplinary. We had the principal of a college with us, who said, this is not teaching, this is not learning. The young people need role models. They they need to interact; they need to see not not behind the mask."* – Switzerland

*"They're used to being with each other you know in class and laughing and then here you are probably you're an only child and you have to seat at home throughout nowhere you're going. The only place you interact with is the screen. That is a huge struggle. And even for us parents you know, because you know you'll now become the extra teacher, in the house." – the United States*

Moreover, participants also experienced that school is where students can interact with their friends and peers and have adult role models other than their parents. Online learning being the only child can be very struggling and lonely when you are sitting behind a screen all day long without any interactions. Online learning was also described as a missed opportunity for education.

In addition, in schools every students has access technological devices, which makes their learning environment more equal. Further, some participants mentioned that they have integrated health services in school. For some students, access to this kind of health service, can be crucial for their wellbeing. Participants also mentioned that for some students, school can be the only safe space they have.

*"[...] exactly about the problems that were eh... being... eh... more... more and more... about mental health, violence and all the problems of children, that were not able to go to school, and exactly one problem: food, food insecurity. Many of the children and teenagers go to school because of the... ehh... of the lunch break.[...]" – Brazil*

For some children, school is a place they depend on to get lunch. School closures may have resulted in children and adolescents not getting appropriately nourished, which may cause disruptions in their development and an increase in mental distress.

However, participants experienced that keeping schools open has become a priority for their countries' governments. The educational loss and the consequences of school closures have had on the mental health and wellbeing of students seems not to be worth it. Some participants also mentioned that in the beginning of the COVID-19 pandemic school closures happened too fast although many sources confirmed that children and adolescents are not at risk for getting a severe version of the virus. Moreover, participants mentioned the importance of education in addressing inequalities. Thus, keeping schools open so that students can get their education wherever they are located.

*"Yea, keeping schools open is actually a priority here because at a time, when we started having some issues, because some youths organizing themselves for protest, you know parents, the government and the general public, they became worried because they now found out that it was because, students are at home, that youths were able to get themselves organised." – Nigeria*

Re-opening schools quickly became a priority, when governments realized the negative consequences, it had on the mental health and wellbeing of learners.

*"Because, I mean, this is something that some adults have neglected. I suspect, not only I suspect, I know. I know and I observe that at least in in 2020 , our politicians , our decision makers focused on old people like*

*me, saying, we have to save these old people who fill in our hospitals and our emergency care units, etc. And they have totally forgotten about young people and the rights of young people to be heard and to participate in the decisions.” – Switzerland*

*“If we want to the schools open, we need to consider teachers and even pupils as vulnerable as a group that should be vaccinated first.” - Switzerland*

Also, in the beginning of the pandemic a large part of the measures taken were to save old people and children and adolescent mental health seemed somewhat like a neglected issue. Further, it is important to address teachers and students as a an equally vulnerable group as the elderly, so that keeping schools open during a pandemic can be prioritized.

#### **4.2.2.3 Online learning, digital inequalities and mental health**

Participants also mentioned that there had been a transition to online learning rather quickly after the pandemic broke and authorities decided to collectively close all schools. Although participants experienced that the general idea of online learning is good, participants noted it might not work in practice. School closures and the transition to online learning was thought to be further increasing already growing digital inequalities. Again, vulnerable children are at greater risk to suffer from the consequences that online learning and digital inequalities can have on mental health and wellbeing.

The pandemic and the transition to online learning together with the increased use of technological devices have shown the unequal state of the world:

*“This Pandemic, my dear, is showing how unequal we are, I think that’s the message. And education is a way to reduce inequalities, and with this year and a half, my God, well, but we need to be positive, we will recover all this, hopefully, holy God!” – Peru*

Moreover, education is seen as a very powerful tool addressing the mitigation of health inequalities. With one and a half years of educational disruptions, the forecast does not seem positive. However, it is a good reason for staying positive.

##### **4.2.2.3.1 Limited access to internet**

Participants mentioned limited access to internet, no electricity, no money to buy data and lack of governmental support as barriers for children to participate in online learning.

Interestingly, one participant stated how not only the limited access to internet is a reason for online learning not working, but also that some families are not in a financially secure situation where they could buy data to go online (i.e., use internet):

*“It didn’t o, it didn’t. Apart from the remote option, another thing is that some people where they are, they cannot access network, internet, then some people they don’t even have the money, financially, they’re not even, they don’t have money to buy data, enable them to get online.” – Nigeria*



The transition to online learning happened very quickly, and neither teachers nor students were prepared for it. Participants discussed how acclimatizing to a new learning environment takes time and for some students it can be more difficult than for others:

*"[...] but the challenge was that there are parents who had the computers and their kids could really you know log on online. At the same time there are kids who do not even have computers so that was really a huge challenge and I think it was a period of almost from around March to around July when the kids completely lost, I don't think they then got enough to learn, then you know just adjusting from being away in school, you're at home, you have to struggle to do all these things alone, and trying to acclimatize to this new environment I think was a huge huge struggle." – United States*

Further, the participant explains how online learning is difficult when some students do not have a computer, which makes it even harder for these children to adjust to this new school setting. Moreover, one participant discussed the consequences online learning is having on children and adolescents:

*"So, because of this distance education system really are very, not difficult but I say boring both for children and parents because all day long you are sitting behind the computer and listening and sometimes some difficulties with connections, with network etc." – Armenia*

It can be hard to thrive in a learning environment if your network is not working properly and you are staring at a screen all day. Lastly, there was also one participant who discussed a government initiative with a good purpose of handing out tablets all over the country:

*"Well, they were delivered tablets all over the country, isn't it? But definitely... and the tablets had the "I learn at home" program, isn't it? But as I repeat again, it depends if you don't have internet, what's the tablet for?" – Peru*

However, the participant expressed their frustration with the initiative and how it will not work if not everyone has access to internet.

#### **4.2.2.3.2 Lack of technological devices and digital illiteracy**

The lack of technological devices was mentioned frequently to be a barrier for children to participate in online learning and thriving in the new learning environment. Particularly participants in rural settings from low- and middle-income countries mentioned that the lack of devices (laptops, mobile phones, tablets) was hindering most students from being able to keep learning during school closures.

There were only a few families that had a laptop in the family, and some that own a proper phone:

*"Because we have a number of people who are disadvantaged. Some of them they don't have even this...ehh...equipments where they can have for...time to...maybe sit down, learn through e-learning...I think we are still behind.*

*Yes, for some, yes, it was useful, cos as I've mentioned with Zambia we are still...with technology, still, we need a lot, we are very much behind, a lot has to be done. [...]*

*[...] and, and there again, we have also challenges, you know, the economy the way it is nowadays, things are expensive and for, you know, for parents to afford to have to buy maybe even just a phone for the child to use, and they can say very few people have even laptops to...to... ehh...to help the children so they can...they can learn through technology.”  
– Zambia*

*“Since we haven't really opened our school for face-to-face classes, {urrm} we just stick to the online classes, but there are also students who have struggled in adapting to the online class. And there are some that, um, had problems like, um, providing for their resources, like a laptop, internet connection. And some of the families also have financial constraints.” – Philippines*

Some countries are still a lot behind with technology; hence the online learning environment is not working for them. Also, the impact of a poor economy is making it harder for these families to buy technological devices, which would allow their children to participate in online learning. Participants also discussed digital illiteracy as a barrier for children and adolescents participating in online learning. Especially in low- and middle-income countries, digital illiteracy was a concern. Digital illiteracy among parents and caregivers can result in them not being able to support their children during online learning, which can make it harder for some students to thrive.

### 4.3 Summary of findings

The findings from both the survey and the interviews indicate that the consequences of non-pharmaceutical interventions and the online learning environment on the mental health and wellbeing of school-aged children during the pandemic have mostly been experienced as negative.

Responses from the survey showed that infection control measures may have both positive consequences as well as negative consequences on student wellbeing. Infection control measures led to a disruption in the wellbeing of students including symptoms such as anxiety, lack of motivation, loneliness and distress. The in-depth interviews amplify the survey findings as most participants were concerned with the immediate and long-term negative consequences infection control measures together with school closures could have on mental health. These concerns were about the increase of mental distress among students.

However, findings from the survey also suggest that infection control measures have also had positive consequences on student mental health and wellbeing – allowing learners to go back to school and giving them a sense of safety and not having to fear the virus. Moreover, the interview findings also suggests that the infection control measures acted as an enabler to keep schools open. Participants stated the importance of keeping schools open as they can act as a protective factor against negative mental disorders and distress. School is not only a place where children get their education but also a central actor in addressing their cognitive and social development, mental health and wellbeing.

Finally, the survey responses addressed the lack of peer connection and online learning as having a negative impact on the mental health and wellbeing of students. The findings from the interviews also indicate that online learning has had adverse consequences on digital inequalities. Limited access to internet, lack of technological devices and digital illiteracy are all barriers for children to thrive in a digital school setting, hence influencing their wellbeing. Nonetheless, some responses from the survey suggests that the infection control measures would not have had any impact on students' mental health and wellbeing. Respondents discussed that online learning instead of in-person schooling might mitigate the adverse consequences on mental health and wellbeing. These responses are in controversy with findings from the in-depth interviews, as all participants noted that infection control measures and school closures may have consequences on student mental health and wellbeing.

## 5 Discussion

This chapter presents the discussion of the findings, trustworthiness of the findings, strengths and limitations of the study, and the conclusion for this study.

### 5.1 Discussion of the findings

The aims of this research were to (1) explore the consequences of school closures and infection control measures on the mental health and wellbeing of children and adolescents during COVID-19 from the perspectives of education professionals, and (2) explore how education professionals have experienced online learning and their perspectives on its influence on mental health and wellbeing. The analysis of the open-ended survey answers together with participant interviews yielded a variety of perspectives on how education professionals has experienced the mental health and wellbeing of students during COVID-19.

Education professionals' experiences suggests that the mental health and wellbeing of students has been negatively influenced by the pandemic and non-pharmaceutical interventions (NPIs). Previous research suggests that NPIs have led to increased loneliness and psychological stress (Loades et al., 2020), which all compare with the findings from this study. In addition, these experiences are consisted with a study by Sprang and Silman (2013) where parents reported that the H1N1 pandemic had significant negative consequences on their children's mental health (Sprang & Silman, 2013). Further, our findings correlate with the discoveries from a meta-analysis by Racine et al. (2021) that suggests there has been a significant rise in youth mental health difficulties during the COVID-19 pandemic (Racine et al., 2021). Participants discussed further how social isolation, loneliness and disruptions in daily life due to school closures may higher the risk of depressive symptoms in children and adolescents. Previous evidence from past pandemics also implies that social isolation increased the risk of mental distress in children and adolescents several months to several years later (WHO, 2020; Patel et al., 2013; Loades et al., 2020). In line with other studies on potential disaster impacts (Kar & Bastia, 2006; Yule et al., 2000), the findings from this research illustrate that consequences on adolescent mental health may include post-traumatic stress disorder, depression, and anxiety.

Furthermore, education professionals' experiences indicate that vulnerable children and adolescents are especially at risk of increased mental distress during a pandemic. In line with other studies, participants experienced that adolescence itself, poverty, physical disability, and already existing mental disorders could lead to further problems with mental health and wellbeing (Banati et al., 2020). For vulnerable children, school routines can also be important coping mechanisms (Lee, 2010), hence not being able to go to school can make it harder to cope with disasters and pandemics.

Participants from our study also experienced that infection measures can act as an enabler to keep the schools open, which could mitigate the negative consequences of the pandemic on students' mental health and wellbeing. With the sense of safety from infection control measures and allowing children to be at school during the pandemic, would let them

flourish. For children and adolescents, school is not only a place where to get an education. Being in school would protect students from various negative consequences of the pandemic and it would allow all children to get their education, regardless of poor network and lack of technological devices. Previous research has discussed the importance of schools for children and adolescent wellbeing and Gilligan (1997) states that for school aged children, schools work as a protective factor for student's social, emotional and physical wellbeing (Gilligan, 1997). Thus, school closures are problematic as they are one of the most important institutions that address children's mental health needs. For both children and adolescents, periods without school are associated with decreased physical activity, more screen time, irregular sleep patterns, and less appropriate diets (Wang et al., 2020). In addition, schools have important roles in promoting child development, wellbeing and mental health, hence missing out on months of interactions with peers is likely to have long-lasting impacts on children and adolescents' social and emotional development (Sharma et al., 2021). Further, schools form a part of child protection surveillance systems and providing access to health goods such as vaccination and mental health services (Patton et al., 2016). Most harms on children and adolescents during COVID-19 had occurred during school closures and social lockdown (Viner et al., 2020). Also, school closures had no impact on COVID-19 incidence in 13-15-year-olds in Finland (Juutinen et al., 2021), and children and adolescents rarely cause outbreaks (NCIRS, 2020).

Education professionals were also concerned how the online learning environment may exacerbate already existing digital inequalities, thus having negative consequences on the mental health and wellbeing of students. Participants experienced that limited access to internet, lack of technological devices and digital illiteracy, are all barriers for children and adolescents to participate in online learning. These findings are in line with a study by Abuhammad (2020) that discovered that barriers to online learning are often the lack of technological devices and difficulties in using online learning platforms (Abuhammad, 2020). Often, vulnerable children are those who have limited access to technology, broadband internet and parents or caregivers with digital illiteracy. Participants also noted that caregiver support is crucial for students to thrive in an online learning environment. Moreover, the success of remote learning includes students psychological and emotional experiences to new daily routines, their motivation to study amidst of a disaster or health crisis and the presence of disorders that may make learning more difficult (Becker et al., 2020). If a pandemic or disaster itself already increases mental distress in students, the challenge of participating in online learning may be overwhelming.

Furthermore, digital inequalities have become one of the main determinants of wellbeing since digital settings have become even more essential to maintain daily life activities (Beaunoyer et al., 2020). Technology use also increased during the pandemic, which might further aggravate already increasing digital inequalities. Moreover, social distancing measures and school closures have increased the weight of technology to practice psychological therapeutic services. Already health systems are experiencing difficulties to properly answer the burden of mental health disorders (WHO, 2013), which can reinforce the adverse consequences of digital inequalities (Beaunoyer et al., 2020).

Furthermore, participants were concerned about the increase of screen time in children and adolescent during the school closures and what consequences it could have on their mental health and wellbeing. Elevated screen time among students is most likely to increase sedentary behaviours, which might increase the negative consequences on mental health and wellbeing (Rodriguez-Ayllon et al., 2019). In addition, research has shown that

in adolescence, there is an association between the decrease of physical activity, increase in screen time and elevated symptoms of depression and anxiety (Twenge et al., 2018).

## 5.2 Trustworthiness of the study

One way a researcher can influence themselves and readers that their research findings are worthy of attentions is trustworthiness (Lincoln & Guba, 1985). Lincoln and Guba (1985) refined the concept of trustworthiness by introducing the criteria of credibility, transferability, dependability, and confirmability to parallel the conventional quantitative assessment criteria of validity and reliability (Lincoln & Guba, 1985).

The credibility of a study is determined when coresearchers or readers are confronted with the experience, they can recognize it. Further, credibility addresses the “fit” between respondents’ views and the researcher’s representation of them (Tobin & Begley, 2004). The credibility was improved by using purposively using a smaller study sample together with in-depth interviews. First, an inclusion criterion for survey respondents were established that only respondents who had a valid answer for the open-ended question addressing the research topic were included in the study. Second, purposively including interviews with education professionals in the study that had comprehensively addressed the research topic, which enabled relevant themes to emerge from the data.

Transferability refers to the generalizability of inquiry. The researcher is responsible for providing thick descriptions, so that those who seek to transfer the findings to their own site can judge transferability (Lincoln & Guba, 1985). Fundamentally, this report provided detailed background information about the context and phenomenon in question. Moreover, the report provided practical details about data collection methods, the demographic characteristics of the participants and background information about the research project.

Confirmability is concerned with establishing that the researcher’s interpretations and findings are clearly derived from the data, requiring the researcher to demonstrate how conclusions and interpretations have been reached (Tobin & Begley, 2004). Confirmability is achieved when credibility, transferability and dependability are all achieved (Lincoln & Guba, 1994). Confirmability was improved through reflexivity to ensure self-criticism during the process. Furthermore, the main analysis done manually to get a broader sense of the data and get familiar with the data by consistently reviewing the transcripts.

## 5.3 Strengths and limitations

There are two major strengths and two limitations to this study. First, this study includes the multimethod qualitative study design including a large dataset of both open-ended survey answers and in-depth interviews. This gives varied and extensive results. The survey enables a large number of respondents, while the interviews give depth to these experiences. Hence, the multimethod approach catches best of both worlds. In addition, respondents and participants from both the global south and global north were included in this study. This resulted in a broader understanding of the phenomenon. We now understand how different countries have experienced the pandemic. Hence, the study can be applied to experiences in both low- and middle-income countries, as well as high-income countries.

On the other hand, the main limitation is that the interviews did not only address the phenomenon of interest, but also other topic related to the pandemic. Hence, the transcripts were broad and addressed a wide range of topics. With more specific interviews, the findings could have been more profound and revealing. Second, this study only offers the perspectives of education professionals. They work with children or adolescents or are experts in the field of study. This may seem like a strength given that these education professionals work closely with students and might recognize behaviours that these young people might not recognize themselves. However, education professionals' subjective experiences with children and adolescent behaviours and feelings, might not correlate with all the feelings children have felt. Thus, there might be experiences this study is missing. Moreover, getting the perspective directly from students would provide more credible data and may reveal new experiences regarding their mental health and wellbeing during the COVID-19 pandemic.

## 6 Conclusion

The findings of this study suggest that the COVID-19 pandemic may have negative consequences on children and adolescent mental health and wellbeing. School closures, online learning and infection control measures have led to an increase in mental distress among school-aged children. Further, this study revealed that infection control measures, such as social distancing, use of masks, handwashing etc., also could act as an enabler to keeping schools open during a pandemic, hence mitigating the adverse consequences on student mental health and wellbeing. Addressing student mental health and wellbeing, keeping schools open together with infection control measures, could be a better alternative than transitioning fully into online learning during a pandemic. Altogether these findings can be used to explore alternatives to fully closing schools and transitioning to online learning during a pandemic. Moreover, it can be used to better weigh the decision whether closing schools during a global public health crisis is worth the immediate and long-term consequences it may have on children and adolescent mental health and wellbeing. Additional research on how children and adolescents have experienced non-pharmaceutical interventions is needed to better understand what the immediate and long-term consequences of these restrictions have been. Future research could include both longitudinal quantitative studies on the immediate and long-term impact of COVID-19 on child and adolescent mental health and wellbeing, as well as qualitative studies on how children and adolescents' have experienced the COVID-19 pandemic and non-pharmaceutical interventions.



# References

- Abramson, A. (2020). How COVID-19 may increase domestic violence and child abuse. <https://www.apa.org/topics/covid-19/domestic-violence-child-abuse>
- Banati, P., Jones, N. & Youssef, S. (2020). Intersecting Vulnerabilities: The Impacts of COVID-19 on the Psycho-emotional Lives of Young People in Low- and Middle-Income Countries. *Eur J Dev Res* 32, 1613–1638. <https://doi.org/10.1057/s41287-020-00325-5>
- Basch, C.E. (2011). Healthier students are better learners: A missing link in school reforms to close the achievement gap. *Journal of School Health*, 81, 593-598. doi:10.1111/j.1746-1561.2011.00632.x.
- Becker, S. P., Breaux, R., Cusick, C. N., Dvorsky, M. R., Marsh, N. P., Sciberras, E., & Langberg, J. M. (2020). Remote Learning During COVID-19: Examining School Practices, Service Continuation, and Difficulties for Adolescents With and Without Attention-Deficit/Hyperactivity Disorder. *Journal of Adolescent Health*, 67(6), 769–777. <https://doi.org/10.1016/j.jadohealth.2020.09.002>
- Beunoyer, E., Dupéré, S. and Guitton, M. J. (2020) COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies, *Computers in Human Behavior*, Volume 111, 2020, 106424, ISSN 0747-5632, <https://doi.org/10.1016/j.chb.2020.106424>.
- Bowers, B., Cohen, L. W., Elliot, A. E., Grabowski, D. C., Fishman, N. W., Sharkey, S. S., Zimmerman, S., Horn, S. D., & Kemper, P. (2013). Creating and Supporting a Mixed Methods Health Services Research Team. *Health Services Research*, 48(6pt2), 2157–2180. <https://doi.org/10.1111/1475-6773.12118>
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The Psychological Impact of Quarantine and How to Reduce It: Rapid Review of the Evidence. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3532534>
- Cauchemez, S., van Kerkhove, M. D., Archer, B. N., Cetron, M., Cowling, B. J., Grove, P., Hunt, D., Kojouharova, M., Kon, P., Ungchusak, K., Oshitani, H., Pugliese, A., Rizzo, C., Saour, G., Sunagawa, T., Uzicanin, A., Wachtel, C., Weisfuse, I., Yu, H., & Nicoll, A. (2014). School closures during the 2009 influenza pandemic: national and local experiences. *BMC Infectious Diseases*, 14(1). <https://doi.org/10.1186/1471-2334-14-207>
- Cauchemez, S., Ferguson, N. M., Wachtel, C., Tegnell, A., Saour, G., Duncan, B., & Nicoll, A. (2009). Closure of schools during an influenza pandemic. *The Lancet Infectious Diseases*, 9(8), 473–481. [https://doi.org/10.1016/s1473-3099\(09\)70176-8](https://doi.org/10.1016/s1473-3099(09)70176-8)
- Carvalho, S., & Hares, S. (2020). More from Our Database on School Closures: New Education Policies May Be Increasing Educational Inequality. Center for Global Development | Ideas to Action. <https://www.cgdev.org/blog/more-our-database-school-closures-new-education-policies-may-be-increasing-educational>

- Castaño García, T., Vega Díaz, C., and Cernuda Martínez, J. A. (2016). Emotional disorders in children victims of natural disasters. *Rev Enferm*, 39(6), 18-29.
- Centers for Disease Control and Prevention. (2019). Helping Children Cope with Emergencies | CDC. Centers for Disease Control and Prevention. <https://www.cdc.gov/childrenindisasters/helping-children-cope.html>
- Centers for Disease Control and Prevention. (2020). Nonpharmaceutical Interventions (NPIs) | CDC. CDC. <https://www.cdc.gov/nonpharmaceutical-interventions/index.html>
- CHAIN - Centre for Global Health Inequalities Research. (2017). About CHAIN – CHAIN – Centre for Global Health Inequalities Research. NTNU. Retrieved May 2022, from <https://www.ntnu.edu/chain/about-chain>
- Cree, R. A., Bitsko, R. H., Robinson, L. R., Holbrook, J. R., Danielson, M. L., Smith, C., Kaminski, J. W., Kenney, M. K., & Peacock, G. (2018). Health Care, Family, and Community Factors Associated with Mental, Behavioral, and Developmental Disorders and Poverty Among Children Aged 2–8 Years — United States, 2016. *MMWR. Morbidity and Mortality Weekly Report*, 67(50), 1377–1383. <https://doi.org/10.15585/mmwr.mm6750a1>
- Creswell, J.W. and Creswell, J.D. (2017), *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Sage Publications, Newbury Park, CA.
- Creswell, J. W., & Clark, V. P. L. (2017). *Designing and Conducting Mixed Methods Research* (3rd ed.). SAGE Publications, Inc. Courtney, D., et al., COVID-19 Impacts on Child and Youth Anxiety and Depression: Challenges and Opportunities. *The Canadian Journal of Psychiatry*, 2020. 65(10): p. 688-691.
- Dalton, L., Rapa, E., & Stein, A. (2020). Protecting the psychological health of children through effective communication about COVID-19. *The Lancet. Child & adolescent health*, 4(5), 346–347. [https://doi.org/10.1016/S2352-4642\(20\)30097-3](https://doi.org/10.1016/S2352-4642(20)30097-3)
- Deighton, J., Lereya, S. T., Casey, P., Patalay, P., Humphrey, N., & Wolpert, M. (2019). Prevalence of mental health problems in schools: poverty and other risk factors among 28 000 adolescents in England. *British Journal of Psychiatry*, 215(3), 565–567. <https://doi.org/10.1192/bjp.2019.19>
- Demir, M., Dalgic, A., & Ergen, F. (2021). *Handbook of Research on the Impacts and Implications of Covid-19 on the Tourism Industry*. Business Science Reference.
- Downs, M. (2005, December 21). What Is a Pandemic? WebMD. <https://www.webmd.com/cold-and-flu/features/what-is-pandemic>
- Doyle, L., McCabe, C., Keogh, B., Brady, A., & McCann, M. (2019). An overview of the qualitative descriptive design within nursing research. *Journal of Research in Nursing*, 25(5), 443–455. <https://doi.org/10.1177/1744987119880234>
- Dube, A., et al. (2018). Health Outcomes for Children in Haiti Since the 2010 Earthquake: A systematic review. *Prehosp Disaster Med*, 33(1), 77-88. doi:10.1017/s1049023x17007105
- Dunlosky, J.; Rawson, K.A.; Marsh, E.J.; Nathan, M.J.; Willingham, D.T. Improving Students' Learning With Effective Learning Techniques. *Psychol. Sci. Public Interest* 2013,14,4–58.
- Durlak, J.A., Weissberg, R.P., Dymnicki, A.B., Taylor, R.D., & Schellinger, K.B.(2011). The impact of enhancing student's social and emotional learning: a meta-analysis of school-based universal interventions. *Child Development*, 82(1): 405-422.

- D'Addio, A.C.; Endrizzi, F. (2020). Covid-19: How Is Italy Coping with School Closure? Available online: <https://gemreportunesco.wordpress.com/2020/04/02/covid-19-how-is-italy-coping-with-school-closure/>
- European Centre for Disease Prevention and Control. (2020) COVID-19 in children and the role of school settings in transmission - first update. Stockholm.
- European Centre for Disease Prevention and Control. (2021). Non-pharmaceutical interventions against COVID-19. ECDC. <https://www.ecdc.europa.eu/en/covid-19/prevention-and-control/non-pharmaceutical-interventions>
- ENOC, Ombudspersons and Commissioners for Children's Challenges and Responses to Covid-19. 2020, ENOC and UNICEF.
- Essén, A., & Sauder, M. (2017). The evolution of weak standards: The case of the Swedish rheumatology quality registry. *Sociology of Health and Illness*, 39(4), 513–531.
- Erskine, H. E., Baxter, A. J., Patton, G., Moffitt, T. E., Patel, V., Whiteford, H. A., & Scott, J. G. (2017). The global coverage of prevalence data for mental disorders in children and adolescents. *Epidemiology and psychiatric sciences*, 26(4), 395–402. <https://doi.org/10.1017/S2045796015001158>
- Evans, D., Hares, S., Mendez Acosta, A., & Saintis, C. (2021). It's Been a Year Since Schools Started to Close Due to COVID-19. Center for Global Development | Ideas to Action. <https://www.cgdev.org/blog/its-been-year-schools-started-close-due-covid-19>
- Farooqui, M., et al. (2017). Posttraumatic Stress Disorder: A serious post-earthquake complication. *Trends Psychiatry Psychother*, 39(2), 135-143. doi:10.1590/2237-6089-2016-0029
- Felix, E., Rubens, S., and Hambrick, E. (2020). The Relationship Between Physical and Mental Health Outcomes in Children Exposed to Disasters. *Curr Psychiatry Rep*, 22(7), 33. doi:10.1007/s11920-020-01157-0
- Ferguson, N., Cummings, D., Fraser, C. et al. (2006). Strategies for mitigating an influenza pandemic. *Nature* 442, 448–452. <https://doi.org/10.1038/nature04795>
- Folkhälsomyndigheten. (2022). COVID-19 infection control measures - The Public Health Agency of Sweden. <https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/communicable-disease-control/covid-19/how-to-protect-yourself-and-others-covid-19-recommendations/control-measures/>
- Fraser, C., Donnelly, C. A., Cauchemez, S., Hanage, W. P., Van Kerkhove, M. D., Hollingsworth, T. D., Griffin, J., Baggaley, R. F., Jenkins, H. E., Lyons, E. J., Jombart, T., Hinsley, W. R., Grassly, N. C., Balloux, F., Ghani, A. C., Ferguson, N. M., Rambaut, A., Pybus, O. G., Lopez-Gatell, H., Alpuche-Aranda, C. M., ... WHO Rapid Pandemic Assessment Collaboration (2009). Pandemic potential of a strain of influenza A (H1N1): early findings. *Science (New York, N.Y.)*, 324(5934), 1557–1561. <https://doi.org/10.1126/science.1176062>
- GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. (2018). Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*. DOI:[https://doi.org/10.1016/S0140-6736\(18\)32279-7](https://doi.org/10.1016/S0140-6736(18)32279-7)
- Ghandour, R. M. et al. (2018). Prevalence and Treatment of Depression, Anxiety, and Conduct Problems in US Children. *The Journal of Pediatrics*, Volume 206, 256 - 267.e3

- Ghani, A., Baguelin, M., Griffin, J., Flasche, S., van Hoek, A. J., Cauchemez, S., Donnelly, C., Robertson, C., White, M., Truscott, J., Fraser, C., Garske, T., White, P., Leach, S., Hall, I., Jenkins, H., Ferguson, N., & Cooper, B. (2009). The Early Transmission Dynamics of H1N1pdm Influenza in the United Kingdom. *PLoS currents*, 1, RRN1130. <https://doi.org/10.1371/currents.RRN1130>
- Gray, & Jourdan, D. (2022). Co-operation and consistency: a global survey of professionals involved in reopening schools during the COVID-19 pandemic. *Health Education.*, 122(1), 103–120. <https://doi.org/10.1108/HE-07-2020-0054>
- Greene, J. C., Caracelli, V. J., Graham W. F. (1989). Toward a conceptual framework for mixed method evaluation designs. *Educ Eval Policy Anal* 1989;11:255–74. doi:10.3102/01623737011003255
- Gilligan, R. (1997). The importance of schools and teachers in child welfare. *Child and Family Social Work* 1998, 3, pp 13-25. <https://doi/pdf/10.1046/j.1365-2206.1998.00068.x>
- Goldberg, D (2000). "Distinguishing mental illness in primary care". *BMJ: British Medical Journal*. 321 (7273): 1412. doi:10.1136/bmj.321.7273.1412. PMC 1119126. PMID 11187100.
- Hamiel, D., et al. (2017). Addressing the Needs of Preschool Children in the Context of Disasters and Terrorism: Clinical pictures and moderating factors. *Curr Psychiatry Rep*, 19(7), 38. doi:10.1007/s11920-017-0793-7
- Harville, E., Xiong, X., and Buekens, P. (2010). Disasters and Perinatal Health: A systematic review. *Obstet Gynecol Surv*, 65(11), 713-728. doi:10.1097/OGX.0b013e31820eddbe
- Headey, B., Holmström, E., & Wearing, A. (1984). Well-being and ill-being: Different dimensions? *Social Indicators Research*, 14(2), 115–139. <https://doi.org/10.1007/bf00293406>
- Herrera-Valdez, M. A., Cruz-Aponte, M., & Castillo-Chavez, C. (2011). Multiple outbreaks for the same pandemic: Local transportation and social distancing explain the different “waves” of A-H1N1pdm cases observed in México during 2009. *Mathematical Biosciences and Engineering*, 8(1), 21–48. <https://doi.org/10.3934/mbe.2011.8.21>
- Hoffman, J. A., & Miller, E. A. (2020). Addressing the Consequences of School Closure Due to COVID-19 on Children's Physical and Mental Well-Being. *World medical & health policy*, 10.1002/wmh3.365. Advance online publication. <https://doi.org/10.1002/wmh3.365>
- Hollington, A., Tappe, O., Salverda, T., & Schwarz, T. (2015). Introduction: Concepts of the Global South | GSSC. *Global South Studies Cologne*. <https://web.archive.org/web/20160904205139/http://gssc.uni-koeln.de/node/451>
- Honig, A. S. (2002). Secure relationships: Nurturing infant/toddler attachment in early care settings. *National Association for the Education of Young Children*, 1509 16th Street, NW, Washington, DC 20036-1426.
- Sinha, I. P., Harwood, R., Semple, M. G., Hawcutt, D. B., Thursfield, R., Narayan, O., Kenny, S. E., Viner, R., Hewer, S. L., & Southern, K. W. (2020). COVID-19 infection in children. *The Lancet Respiratory Medicine*, 8(5), 446–447. [https://doi.org/10.1016/s2213-2600\(20\)30152-1](https://doi.org/10.1016/s2213-2600(20)30152-1)
- Idele, P., Banati, P., Sharma, M., Perera, C., Anthony, D. (2022). Child and Adolescent Mental Health and Psychosocial Wellbeing Across the Life Course: Towards an

Integrated Conceptual Framework for Research and Evidence Generation, UNICEF Office of Research – Innocenti, Florence.

- Imran, N., Zeshan, M., & Pervaiz, Z. (2020). Mental health considerations for children & adolescents in COVID-19 Pandemic. *Pakistan journal of medical sciences*, 36(COVID19-S4), S67–S72. <https://doi.org/10.12669/pjms.36.COVID19-S4.2759>
- Jackson, C., Vynnycky, E., & Hawker, J. (2013). School closures and influenza: Systematic review of epidemiological studies. *BMJ Open*. <https://doi.org/10.1136/bmjopen-2012-002149>
- James M. Shultz, Zelde Espinel, Maria Espinola & Andreas Rechkemmer (2016) Distinguishing epidemiological features of the 2013–2016 West Africa Ebola virus disease outbreak, *Disaster Health*, 3:3, 78-88, DOI: 10.1080/21665044.2016.1228326
- Jourdan, D., Marmot, M., & Gray, N. (2020). Coronavirus: there is an urgent need to re-open schools – this is how to make it happen. *The Conversation*. <https://theconversation.com/coronavirus-there-is-an-urgent-need-to-re-open-schools-this-is-how-to-make-it-happen-137818>
- Joseph, S. J., Bhandari, S. S., Ranjitkar, S., & Dutta, S. (2020). School Closures and Mental Health Concerns for Children and Adolescents during the COVID-19 Pandemic. *Psychiatria Danubina*, 32(2), 309–310.
- Jutesen & Mik-Meyer 2012, Justesen, L., & Mik-Meyer, N. (2012). *Qualitative Research Methods in Organisation Studies*. Copenhagen: Gyldendal.
- Juutinen A, Sarvikivi E, Laukkanen-Nevala P, Helve O (2021). Closing lower secondary schools had no impact on COVID-19 incidence in 13–15-year-olds in Finland. *Epidemiology and Infection* 149
- Kar, N., & Bastia, B. (2006). Post-traumatic stress disorder, depression and generalised anxiety disorder in adolescents after a natural disaster: a study of comorbidity. *Clinical Practice and Epidemiology in Mental Health*, 2(1), 17. <https://doi.org/10.1186/1745-0179-2-17>
- Kelley, K., Clark, B., Brown, V., and Sitzia, J. (2003). Good practice in the conduct and reporting of survey research, *International Journal for Quality in Health Care*, Volume 15, Issue 3, Pages 261–266, <https://doi.org/10.1093/intqhc/mzg031>
- Kieling, C., Baker-Henningham, H., Belfer, M., Conti, G., Ertem, I., Omigbodun, O., Rohde, L. A., Srinath, S., Ulkuer, N., & Rahman, A. (2011). Child and adolescent mental health worldwide: evidence for action. *The Lancet*, 378(9801), 1515–1525. [https://doi.org/10.1016/s0140-6736\(11\)60827-1](https://doi.org/10.1016/s0140-6736(11)60827-1)
- King, J., South, J. (2017). *Reimagining the Role of Technology in Higher Education: A Supplement to the National Education Technology Plan*; US Department of Education, Office of Educational Technology: Washington, DC, USA.
- Knerr, W., Gardner, F., & Cluver, L. (2013). Improving Positive Parenting Skills and Reducing Harsh and Abusive Parenting in Low- and Middle-Income Countries: A Systematic Review. *Prevention Science*, 14(4), 352–363. <https://doi.org/10.1007/s11121-012-0314-1>
- Kobayashi, A. (2019). *International Encyclopedia of Human Geography* (2nd ed.). Elsevier.
- Lincoln, Y., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Loades, M. E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., McManus, M. N., Borwick, C., & Crawley, E. (2020). Rapid Systematic

Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of COVID-19. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(11), 1218–1239.e3.  
<https://doi.org/10.1016/j.jaac.2020.05.009>

- Ludvigsson, J. F. (2020). Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. *Acta Paediatrica*, 109(6), 1088–1095.  
<https://doi.org/10.1111/apa.15270>
- Mambrey, V., Wermuth, I., and Böse-O'Reilly, S. (2019). Auswirkungen von Extremwetterereignissen auf die psychische Gesundheit von Kindern und Jugendlichen. *Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz*, 62(5), 599-604. doi:10.1007/s00103-019-02937-7
- Marques De Miranda, D., Da Silva Athanasio, B., Sena Oliveira, A.C. & Simoes-E-Silva, A.C. (2020). How is COVID-19 Pandemic Impacting Mental Health of Children and Adolescents? *Int. J. Disaster Risk Reduct.* 51, 101845.
- Mossong, J., Hens, N., Jit, M., et al. (2008). Social contacts and mixing patterns relevant to the spread of infectious diseases. *PLoS Medicine*. 5(3):e74
- National Centre for Immunization research and Surveillance. (2020). Covid-19 in schools – the experience in NSW, April 26.
- Noffsinger, M. A., et al. (2012). The Burden of Disaster: Part I. Challenges and opportunities within a child's social ecology. *Int J Emerg Ment Health*, 14(1), 3-13.
- Norman, R. E., et al. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Med.* 9(11): p. e1001349.
- OECD. (2015). *Inequalities in Digital Proficiency: Bridging the Divide*. OECD.  
<https://doi.org/10.1787/9789264239555-8-en>
- Oxford University Press (OUP). (n.d.). student. *Lexico.Com*. Retrieved May 2022, from <https://www.lexico.com/definition/student>
- Patel, V. (2013). Reducing the burden of depression in youth: what are the implications of neuroscience and genetics on policies and programs? *J Adolesc Health*. Feb;52(2 Suppl 2):S36-8. doi: 10.1016/j.jadohealth.2012.04.016. PMID: 23332569.
- Patton, G.C., Sawyer, S.M., Santelli, J.S., Ross, D.A., Afifi, R., Allen, N.B., Arora, M., Azzopardi, P., Baldwin, W., Bonell, C. and Kakuma, R. (2016), "Our future: a Lancet commission on adolescent health and wellbeing", *The Lancet*, Vol. 387 No. 10036, pp. 2423-2478, doi: 10.1016/S0140-6736(16)00579-1
- Racine, N., McArthur, B. A., Cooke, J. E., Eirich, R., Zhu, J., & Madigan, S. (2021). Global Prevalence of Depressive and Anxiety Symptoms in Children and Adolescents During COVID-19: A Meta-analysis. *JAMA pediatrics*, 175(11), 1142–1150.  
<https://doi.org/10.1001/jamapediatrics.2021.2482>
- Rathus, S. A. (2013). *Childhood and Adolescence: Voyages in Development*. Cengage Learning. p. 48. ISBN 978-1-285-67759-0.
- Robles, Y. (2020). Amid coronavirus fears, the CDC told schools to plan for remote learning. That's harder than it sounds. *Chalkbeat*.  
<https://www.chalkbeat.org/2020/3/3/21178677/amid-coronavirus-fears-the-cdc-told-schools-to-plan-for-remote-learning-that-s-harder-than-it-sounds>
- Rodriguez-Ayllon, M., Cadenas-Sánchez, C., Estévez-López, F., Muñoz, N. E., Mora-Gonzalez, J., Migueles, J. H., Molina-García, P., Henriksson, H., Mena-Molina, A.,

- Martínez-Vizcaíno, V., Catena, A., Löf, M., Erickson, K. I., Lubans, D. R., Ortega, F. B., & Esteban-Cornejo, I. (2019). Role of Physical Activity and Sedentary Behavior in the Mental Health of Preschoolers, Children and Adolescents: A Systematic Review and Meta-Analysis. *Sports Medicine*, 49(9), 1383–1410. <https://doi.org/10.1007/s40279-019-01099-5>
- Rohwerder, B. (2020). Secondary impacts of major disease outbreaks in low- and middle-income countries. K4D Helpdesk Report 756. Brighton, UK: Institute of Development Studies.
- Rubens, S. L., Felix, E. D., and Hambrick, E. P. (2018). A Meta-Analysis of the Impact of Natural Disasters on Internalizing and Externalizing Problems in Youth. *J Trauma Stress*, 31(3), 332-341. doi:10.1002/jts.22292
- Salari, N., Hosseini-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., Rasoulpoor, S., & Khaledi-Paveh, B. (2020). Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Globalization and Health*, 16(1). <https://doi.org/10.1186/s12992-020-00589-w>
- Schwartz, S. (2020). Teachers Scramble to Make Remote Learning Work: "It's Very Stressful." *Education Week*. <https://www.edweek.org/leadership/teachers-scramble-to-make-remote-learning-work-its-very-stressful/2020/03>
- Sharma, M., Idele, P., Manzini, A., Aladro, CP., Ipince, A., Olsson, G., Banati, P., Anthony, D. (2021). Life in Lockdown: Child and adolescent mental health and well-being in the time of COVID-19, UNICEF Office of Research – Innocenti, Florence.
- Sievertsen, H. H. (2021). How have school closures affected children around the world? Economics Observatory. Retrieved April 28, 2022, from <https://www.economicsobservatory.com/how-have-school-closures-affected-children-around-the-world>
- Spinelli, M., Lionetti, F., Pastore, M. and Fasolo, M. (2020) Parents' Stress and Children's Psychological Problems in Families Facing the COVID-19 Outbreak in Italy. *Frontiers in Psychology*, Vol. 11, 2020 doi:10.3389/fpsyg.2020.01713
- Sprang, G., & Silman, M. (2013). Posttraumatic Stress Disorder in Parents and Youth After Health-Related Disasters. *Disaster Medicine and Public Health Preparedness*, 7(1), 105-110. doi:10.1017/dmp.2013.22
- Suhrcke, M., & Paz Nievas, C. (2011). The impact of health and health behaviours on educational outcomes in high-income countries: a review of the evidence. Copenhagen, Regional Office for Europe, no 35.
- Tettegah, S. Y., & McCreery, M. P. (2015). *Emotions, Technology, and Learning (Emotions and Technology)* (1st ed.). Academic Press.
- Tobin, G. A., & Begley, C. M. (2004). Methodological rigour within a qualitative framework. *Journal of Advanced Nursing*, 48, 388–396. doi:10.1111/j.1365-2648.2004.03207.x
- Tierney, W. G., Sabharwal, N. S., & Malish, C. M. (2019). Inequitable structures: Class and caste in indian higher education. *Qualitative Inquiry*, 25(5), 471–481.
- Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. *Preventive Medicine Reports*, 12, 271–283. <https://doi.org/10.1016/j.pmedr.2018.10.003>

- UNESCO. (2022, February 28). Education: From disruption to recovery. UNESCO. <https://en.unesco.org/covid19/educationresponse>
- UNESCO. (2020). UNESCO COVID-19 Education Response: Conflict-affected, displaced and vulnerable populations. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000373330>
- UNESCO Chair GHE. (2021). The UNESCO Chair GHE. The UNESCO Chair Global Health and Education/ WHO Collaborating Centre. Retrieved May 2021, from <https://unescochair-ghe.org/the-unesco-chair-ghe/>
- USDG. (2020). Policy Brief: The Impact of COVID-19 on children. UNSDG. [https://unsdg.un.org/sites/default/files/2020-04/160420\\_Covid\\_Children\\_Policy\\_Brief.pdf](https://unsdg.un.org/sites/default/files/2020-04/160420_Covid_Children_Policy_Brief.pdf)
- Viner, R., Russell, S., Croker, H., Packer, J., Ward, J., Stansfield, C., Mytton, O., & Booy, R. (2020). School Closure and Management Practices During Coronavirus Outbreaks Including COVID-19: A Rapid Narrative Systematic Review. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.3556648>
- Vos, Theo et al. (2022). Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet Psychiatry*, 9(2), 137–150. [https://doi.org/10.1016/s2215-0366\(21\)00395-3](https://doi.org/10.1016/s2215-0366(21)00395-3)
- Weems, C., and Overstreet, S. (2009). An Ecological-Needs-Based Perspective of Adolescent and Youth Emotional Development in the Context of Disaster: Lessons from Hurricane Katrina. In (pp. 27-44).
- World Bank. (2020). WDI - The World by Income and Region. World Development Indicators. <https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html>
- World Health Organization. (2005). *Mental Health Action Plan for Europe: Facing the Challenges, Building Solutions*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2008). *Commission on Social Determinants of H. Closing the gap in a generation: health equity through action on the social determinants of health*. Geneva: World Health Organization, 2008.
- World Health Organization. (2021). Adolescent mental health. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>
- World Health Organization. (2019). Adolescent health. [https://www.who.int/health-topics/adolescent-health#tab=tab\\_1](https://www.who.int/health-topics/adolescent-health#tab=tab_1)
- World Health Organization. (2014). *Health for the world's adolescents: a second chance in the second decade: summary*. World Health Organization. <https://apps.who.int/iris/handle/10665/112750>
- Williams, R., et al. (2008). Children, Resilience and Disasters: Recent evidence that should influence a model of psychosocial care. *Curr Opin Psychiatry*, 21(4), 338-344. doi:10.1097/YCO.0b013e328305b6e4
- Yule, W., Bolton, D., Udwin, O., Boyle, S., O’Ryan, D., & Nurrish, J. (2000). The Long-term Psychological Effects of a Disaster Experienced in Adolescence: I: The Incidence and Course of PTSD. *Journal of Child Psychology and Psychiatry*, 41(4), 503–511. <https://doi.org/10.1111/1469-7610.00635>



# Appendices

## Appendix 1: Safe reopening of schools -survey

For people working in schools only



### Education and Health Professionals' Experiences and Views about the Safe Reopening of Schools

#### Infection Control Measures in Schools

If you work in more than one school, please choose the school where you work most often and think about that school while you answer the questions on this page.

6. Did you receive guidance in your school for reopening after the first lockdown and how to deal with ongoing infection outbreaks?

7. For the following infection control measures in school, please tell us whether they are in place in your school, and how easy or hard it is for students and staff to comply with them. (Phone users - please scroll across to see all the questions)

|  | Is this being used?  | How hard for students to comply? | How hard for staff to comply? |
|--|----------------------|----------------------------------|-------------------------------|
| Wearing a mask                                       | <input type="text"/> | <input type="text"/>             | <input type="text"/>          |
| Physical (Social) distancing                         | <input type="text"/> | <input type="text"/>             | <input type="text"/>          |
| Extra handwashing / Use of sanitiser                 | <input type="text"/> | <input type="text"/>             | <input type="text"/>          |
| Ventilation of classrooms                            | <input type="text"/> | <input type="text"/>             | <input type="text"/>          |
| Organisational changes (changing the timetable etc.) | <input type="text"/> | <input type="text"/>             | <input type="text"/>          |
| COVID-19 screening by mass testing                   | <input type="text"/> | <input type="text"/>             | <input type="text"/>          |

8. If you would like to explain your answer, or describe any other measures in place, please tell us here.

\* 9. What kind of school do you work in? (Phone users - please scroll across to see all the questions)

|             | Public/Private (Free or fee-paying) | Is it specialised? (eg for Physical disabilities) | Do any students stay overnight in the school? |
|-------------|-------------------------------------|---|---|
| School type | <input type="text"/>                | <input type="text"/>                              | <input type="text"/>                          |

10. How many students attend your school? (You can give an approximate answer)



For people working in schools only

Education and Health Professionals' Experiences and Views about the Safe Reopening of Schools

Impact of Infection Control Measures

11. Have these measures affected the **mental health and wellbeing of students**? If so, how?

12. Have these measures affected the **mental health and wellbeing of staff**? If so, how?

13. Have these measures affected **learning for students**? If so, how?

14. Have these measures affected the **ability of teachers to do their job well**? If so, how?

## Appendix 2: Interview guide

| Interview Section   | Content   |
|---|---|
| Context   | Country and role<br>Description of the school/s where they work* ( <i>Age of children/youth, public/private, urban/suburban/rural, level of privilege</i> ) |
| The effect of the pandemic on schools                             | How many waves of infection, if/when schools closed, if schools are open at the time of the interview   |
| Return of students after the first lockdown*                      | Whether any groups of students have not returned ( <i>By gender, students with chronic illness etc.</i> )   |
| Educational 'catch-up' measures*                                  | Whether any remedial measures were put in place and, if so, whether they were effective   |
| Virtual / Remote learning*  | Whether this is in place, what channels are used (e.g. online, TV) and impact on students and teachers  |
| Experience of implementing infection control measures in schools* | What measures are in place and how were they implemented, innovation, compliance, impact on teaching and learning for students and staff                    |
| Management of infection breakout*                                 | What measures are in place if an infection is reported in school  |
| Important resources for keeping schools open*                     | This includes human resources, documents and equipment  |
| Intersectoral collaboration                                       | Whether there has been joint working across education and health at local level, and what could be done for the future (including professional training)    |
| Education as a national priority in the pandemic                  | Perception of the priority the national Government gave to keeping schools open   |

\* Only asked of interviewees from an education background

