

Researching children and disasters: What's different in pandemic times?

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URL: http://trauma.massey.ac.nz/issues/2022-2/AJDTS_26_2_Gibb.pdf

Abstract

The repercussions of the global COVID-19 pandemic are far-reaching and extend to the ways in which scholars conduct disaster research. Research on children and disasters is no exception. Focusing on methodologies, this paper explores the methodological constraints and innovations of studying children during the current crisis, and the implications for post-pandemic research on children and disasters. We begin by reviewing research methodologies to study children and disasters, drawing upon scholarly and grey literature as well as on our own research project on the pandemic experiences of children, adolescents, and older adults. We then discuss how these research approaches, tools, and spaces have changed during the pandemic. Methodological adaptation and innovation are necessary because traditional data collection methods are largely not feasible during the current pandemic; for example, many researchers cannot travel to the disaster site, hold in-person focus groups, interview children and their families face-to-face, or conduct extensive participant observation in places people would usually frequent. We pay particular attention to research ethics issues, including the challenges of navigating the research design process when children are involved. We contend that the massive adoption of online methods during the COVID-19 pandemic is laying the foundation for a seventh wave of research on children and disasters characterized by the integration of in-person and virtual worlds, and of in-person and virtual research methods.

Rather than initiating this transition to a hybrid or blended model, the pandemic is accelerating the transition, and compelling more of the research community to engage than might have otherwise. The “bricolage” of methods originating in both in-person and virtual fields, adapted in various ways for both in-person and virtual fields, is better attuned to the spaces where children live their lives, and the ways in which they live their lives.

Keywords: Research methods, children, COVID-19 pandemic, ethics, virtual research methods

The repercussions of the global COVID-19 pandemic are far-reaching and extend to the ways in which researchers conduct disaster research (Asare et al., 2020; Ritchie et al., 2020; Ritchie et al., 2021; United Kingdom Alliance for Disaster Research, 2020). Research on children and disasters is no exception. As an interdisciplinary team of social scientists pursuing research questions about the social impacts of the pandemic on children, adolescents, and older adults, we have grappled with pandemic-driven shifts in data collection and analysis, and the repercussions for power dynamics and inequities in whose perspectives are represented. Applying discourses from feminist geography and other bodies of literature on researcher reflexivity and subjectivity (England, 1994; Soedirgo & Glas, 2020; Whitson, 2016), we integrate observations from our research team's experiences throughout this paper as part of a broader call for greater transparency about the research methodologies that shape our understanding of disasters (Peek et al., 2020). We explore the challenges, ethical considerations, shortcomings, and workarounds of children and disaster research during the pandemic as a means of inviting other scholars to join us in discussing the messiness and complexity of the research process.

Research on children and disasters has grown tremendously in the decade and a half since Anderson published a plea in the *International Journal of Mass Emergencies and Disasters* calling for disaster scholars in the social sciences to study children's experiences of disasters. As W. A. Anderson (2005) noted, it is critical to focus on the impact of disasters on children and youth as a group, and, among children, across income levels and racial groups and in countries of different income levels. Attention to youth employment and children's

own perceptions of disaster recovery are also noted as valuable. Anderson also advocates for a greater understanding of what is done on behalf of children in disasters, including legislation and school preparedness programs, and how the possible digital divide affects children receiving online risk communication. Finally, and notably, Anderson asks social scientists to consider what children and youth do for themselves and others, as they are not just victims and observers. Children, for example, may create their own youth culture, with their own disaster humour, and they may consume media, especially with their cell phones, which increases their risk awareness and makes them the “risk communicators” for their families (W. A. Anderson, 2005, p. 169).

Following W. A. Anderson’s (2005) call, other scholars have agreed that it is necessary to study children’s vulnerability, as disasters affect their growth and development as well as their capabilities, as they can help prepare their households and communities for disasters, often with creative solutions (for example, Peek, 2008). In the 2000s and 2010s, scholars from across a diverse range of disciplines studied children’s experiences in disasters precipitated by a range of natural and technological hazards around the world. These studies typically adopt the definition of a child, set by the Convention on the Rights of the Child, as anyone below the age of 18 (United Nations [UN] General Assembly, 1989). However, researchers acknowledge the blurring of categories based on chronological age, stage of development, lived experiences, and cultural constructs of childhood and children, and that these categories vary across time and space (Berman et al., 2016; Cox et al., 2019; Peek et al., 2018). The research methods used in these child-focused studies largely mirror those commonly used by over 1,000 members of the internationally based Social Science Extreme Events Research Network (SSEER). These include case studies, surveys, in-depth interviews, qualitative content analysis, community-based participatory research, statistical analyses of primary or secondary data, focus groups, and observation (Peek et al., 2020). Additionally, disaster scholars have found that research on children and disasters has spurred numerous methodological advances, especially in qualitative, participatory, child-led, and creative methods (Peek et al., 2018).

Working with children requires child-centric approaches and contextually appropriate methods (Berman, 2020; Berman et al., 2016; Mudavanhu et al., 2015; Peek & Richardson, 2010). Strategies used by children and disaster researchers to adapt research methods to make

them “child-friendly” include: devising assent/consent in a form and language that reflects the competency of the child (Berman, 2020); using age-appropriate wording in all research protocols (S. Anderson et al., 2020; Koller et al., 2010; Mooney et al., 2017); adopting methods that accommodate both children’s interests and competencies (Delicado et al., 2017; Gibbs et al., 2013; Koller et al., 2010); creating safe spaces for children to risk talking about their feelings and perspectives by providing distance from the actual events or sensitive topic (S. Anderson et al., 2020; Mooney et al., 2017); having children engage with a metaphor instead of the actual disaster (for example, interactive theatre to tell the story of a torn dream cloth; Gibbs et al., 2013); using research designs that position the child as expert or co-researcher (Gibbs et al., 2013); speaking with children in their native language (Mudavanhu et al., 2015); interviewing children away from their teachers and parents (Mudavanhu et al., 2015); and providing specific training for researchers on interview methods with children (Koller et al., 2010).

Around the world, researchers have created, and in some cases co-created, innovative methods for centring children. In Zimbabwe, Mudavanhu et al. (2015) used focus groups because children were more relaxed with their friends than being isolated one-on-one with an adult researcher; moreover, the children discussed the questions and helped each other with answers, reminding one another about the details, as well as asking each other additional questions the research team had not thought to ask. Similarly, in the United States (U.S.) after Hurricane Katrina, focus groups made children more comfortable because they felt they had power in numbers (Peek & Fothergill 2009). In New Zealand and Australia, Gibbs et al. (2013): drew upon methods from studies with children and youth post-trauma; consulted internationally with child research and trauma experts in designing their studies and protocols; engaged in discussions with affected communities to develop an ethical framework for child research participation; built skills-training into the methodology (e.g., trained students to film, direct and edit videos, and to interview); put children into the driver’s seat for certain parts of the research (e.g., designing the interview protocol); partnered with trusted community leaders and service providers; and carried out the pilot projects and main study in partnership with local communities, service organizations, local and state governments, and national emergency management agencies. The authors noted that such partnerships were key in tailoring the language

and targeting age-appropriate research materials, as well as vital to recruitment and data collection, interpretation, and dissemination beyond the usual child settings (Gibbs et al., 2013).

In recruiting child participants, researchers may use a sensitively staged approach in which the research team initiates contact with a school principal through a phone call, then follows up by email with a research brief and later a personal visit, then attends a staff and parent meeting and has parents complete written consent forms, and finally reaches out to prospective child participants to collaborate on the design and implementation of the study; this approach ensures all questions are adequately answered and yields progressive informed consent (Gibbs et al., 2013; Mooney et al., 2017). Researchers may also translate their study into language relevant to a gatekeeper who has key knowledge or connections, and who mediates a researcher's access to study sites and potential participants; for example, such translation may entail highlighting inquiry-based learning, key competencies, and child-centred pedagogy when pitching the proposed project to teachers and school administrators (Gibbs et al., 2013). To assuage reservations that the research might trigger further trauma, researchers have also provided gatekeepers with research evidence showing that enabling children to tell their stories through creative means can be an emotionally and psychologically healthy activity for children (Gibbs et al., 2013).

Recently, a team of disaster scholars reviewed the academic literature to assess the emerging subfield of children and disasters (Peek et al., 2018). Examining peer-reviewed research from the 1940s to 2016, they identified six major, often overlapping, waves of research:

- 1) research on children's behavioural and emotional responses, such as anxiety and depression, to disaster (the vast majority of the literature);
- 2) research on physical health outcomes, including death, injury, post-disaster abuse, and exposure to contaminants from technological disasters, such as oil spills and nuclear accidents;
- 3) research on children's vulnerability, much of it recent (but rarely explicitly intersectional and often treating children as a uniform category);
- 4) research on how institutions, such as the family and schools, play a role in children's disaster outcomes;
- 5) research focused on children's capacities, resilience, and strengths, including how they help adults, other children, and themselves in disasters, such as assisting relatives in evacuation; and

- 6) research on children's voices, perspectives, and actions and how they can contribute to disaster risk reduction (this final wave often uses creative and participatory methods and is tied to advocacy efforts).

The six waves taken together show the advancements, innovations, and policy implications for the field. In reflecting on these six waves of research, and analysing the research conducted on children in the pandemic, we consider whether we could be seeing the beginning of a *seventh wave* of research.

The possibility of a seventh wave raises several questions:

- What characterizes this wave?
- Why are these changes transpiring?
- How is COVID-19 impacting the seventh wave?
- Which changes will persist once the pandemic restrictions are lifted?

Our interest in examining the possible onset of a seventh wave of research on children and disasters is twofold. On a theoretical level, we want to understand the targeted ethical considerations and methodological innovations in children and disaster research catalysed by pandemic restrictions, and how these adaptations will shape the future directions of this field. On an empirical level, we want to analyse the challenges we are facing and the adaptations we are making in our own research. Brought together through the CONVERGE COVID-19 Working Groups for Public Health and Social Sciences Research¹, we are currently pursuing a research project on the COVID-19 pandemic experiences of children, adolescents, and older adults in Canada and the U.S. (Gibb et al., 2020; Gibb et al., Forthcoming).

Given these two angles, this paper tackles the aforementioned questions through two lenses. First, through a content analysis of selected literature on children and disaster research, and second, through our own challenges preparing for and carrying out our collective research. Our writing deliberately alternates between an analytic mode in which we discuss themes emerging from the literature, and a descriptive mode in which we illustrate how themes apply to our study. A focus on research methods, and their potential to frame a seventh wave of research on children and disasters, is warranted because the research methods we use frame what we know about hazards and disasters. It is critical that we include children in our understanding of hazards

¹ More information about these working groups can be found at the CONVERGE website: <https://converge.colorado.edu/resources/covid-19/working-groups/>.

and disasters because their capabilities, vulnerabilities, growth and development, and potential to contribute to disaster preparedness and recovery at the household and community scales are all at stake.

Methodology

Like many of the methodological approaches to studying children and disasters during the pandemic, we adopted a remote, desk-based approach. We performed a content analysis to contrast pre-pandemic methodological approaches with those used during the pandemic. We aimed to capture the breadth of methodological tools and approaches to understand how and why researchers have innovated during the pandemic, and to identify which challenges remain unmet.

The types of documents reviewed for pre-pandemic versus pandemic research differed. The reasons for this approach are explained later in the discussion section. In reviewing the pre-pandemic literature, we drew upon journal articles and scholarly books. Within the journal articles, we focused on review articles that systematically studied the range of methodologies used by social scientists and interdisciplinary research teams to study children and disasters. For the pandemic literature review, we drew upon peer-reviewed journal articles and commentaries, and reports from the United Nations, international organizations, and NGOs. Additionally, we reviewed quick response research reports and working group reports on the CONVERGE website, and websites of children and disaster researchers with ongoing research projects. With these additional sources, we aimed to capture methodological adaptations and innovations that have not yet made their way through the scholarly publication and peer-review pipeline.

To identify appropriate sources, we selected articles, books, reports, and other grey literature with “disaster”, “child*”, “young person”, “teen*”, or “youth” in the title, abstract, or keywords. In April and May 2021, we conducted electronic database searches in Web of Science, Scopus, and Google Scholar. We prioritized studies where children and youth (age range 5-17 years) were the primary focus of the study. For pre-pandemic publications, we focused exclusively on social science studies as the breadth of research on children and disasters has already been reviewed (cf. Peek et al., 2018). We privileged literature that spoke to the social dimensions of disasters among children as context for our observations during the still-unfolding pandemic. We read pre-pandemic publications with the aim of

identifying the often creative and participatory methods that characterize the sixth wave (Peek et al., 2018), which may undergo further transformation in a possible seventh wave. Conversely, in our review of literature published since the onset of the pandemic, we included studies from biomedical fields conducted and published in early to mid-2020. These studies may reveal the methodologies that characterize the very beginning of a possible seventh wave.

In the surveyed literature, we paid particular attention to the following aspects of the methodologies: What was the methodological approach, and why? Which method(s) were used, and why? What ethical concerns were featured in the methodology? How did researchers make their methodology child-friendly? What methodological challenges and innovations emerged from the research?

We then conducted a content analysis to identify key themes and trends. Two authors led the content analysis, and the emerging themes were then analysed and discussed among all authors synchronously in video calls and asynchronously in an online document. These themes and trends are explained in the following section, drawing upon the surveyed literature as well as our own experiences studying children and disasters.

Results and Discussion

Methodological Changes and Challenges

During the pandemic, in some cases, there was an amplification of what was already being done in research studies – or even a continuation of the status quo. This was particularly true for children and disaster researchers in psychology, psychiatry, or medical fields and other disciplines that relied primarily upon surveys that could easily be administered online or via patient lists. Indeed, the vast majority of early publications on children and disasters during the current pandemic has come from these fields, utilising positivist research paradigms and using quantitative methods (for example, Adibelli & Sümen, 2020; Davico et al., 2021; H. Dong et al., 2020; Y. Dong et al., 2020; Drouin et al., 2020; Duan et al., 2020; Dumas et al., 2020; Dunton et al., 2020; Ellis et al., 2020; Fitzpatrick et al., 2020; Gaiha et al., 2020; Li, Wang et al., 2020; Li, Zhang et al., 2020; Liu et al., 2021; Mantovani et al., 2021; Oosterhoff & Palmer, 2020; Oosterhoff et al., 2020; Patrick et al., 2020; Qin et al., 2021; Riiser et al., 2020; Ruiz-Roso et al., 2020; Russell et al., 2020; Saurabh & Ranjan, 2020; Senkalfa et al., 2020; Tso et al., 2020; J. Zhou et al., 2020; S.-J. Zhou et al., 2020). Empirical social science research on children

and disasters during the COVID-19 pandemic that uses interpretivist or constructivist research paradigms and employs qualitative methods has mostly not yet made it through the academic publication pipeline.

Even before the COVID-19 pandemic, there was a reticence among disaster scholars to directly engage children in research, which can largely be attributed to ethical and methodological challenges arising from vulnerability, undue risks and burdens, risk management, and decision-making capacity of participants (Ferreira et al., 2018), as well as difficulties obtaining institutional ethics approval, accessing disaster-affected communities, crafting research protocols and theory under time constraints, and ensuring trained researchers are the ones entering the field (Peek, 2008, p. 11). Consequently, much research on children and disasters, and interventions ensuing from this research, have been based on talking *about* children rather than *with* them. Scholars have criticized this approach (for example, Cox et al., 2019; Delicado et al., 2017; Gibbs et al., 2013; Mudavanhu et al., 2015; Muzenda-Mudavanhu, 2016; Pfefferbaum et al., 2018). Despite these difficulties, many social science researchers have used innovative techniques to engage children in disaster-related research directly, for example: through arts-based projects (Gibbs et al., 2013; Malboeuf-Hurtubise et al., 2021; Mort et al. 2020), partnerships for community group or school-led research projects (Gibbs et al., 2013; Mort et al. 2020; Oncu et al., 2009), participatory activities (Gibbs et al., 2013; Mort et al. 2020), focus groups and interactive workshops (S. Anderson et al., 2020; King & Tarrant, 2013; Mort et al., 2020; Mudavanhu et al., 2015), mobile methods (Gibbs et al., 2013), and interviews coupled with storytelling and play (Koller et al., 2010; Mooney et al., 2017). Such approaches foreground the concerns particular to this group as voiced by children themselves, and enable scholars to identify and understand children's agency, resilience, and rights throughout the disaster cycle – rather than just enumerate their vulnerabilities (Cox et al., 2019; Gibbs et al., 2013; Fothergill & Peek, 2015; Mooney et al., 2017).

The onset of the pandemic placed significant roadblocks on directly engaging children in research on children and disasters. Many of the current publications on children and the COVID-19 pandemic obtained their findings through online, email, or telephone surveys and interviews (for example, Adibelli & Sumen, 2020; Barnett et al., 2021; Casanova et al., 2020; Davico et al., 2021; H. Dong et al., 2020; Drouin et al., 2020; Duan et al., 2020;

Dumas et al., 2020; Dunton et al., 2020; Ellis et al., 2020; Fitzpatrick et al., 2020; Gaiha et al., 2020; Li, Wang et al., 2020; Li, Zhang et al., 2020; Liu et al., 2021; Mantovani et al., 2021; May & Coulston, 2021; Oosterhoff & Palmer, 2020; Oosterhoff et al., 2020; O'Sullivan et al., 2021; Patrick et al., 2020; Qin et al., 2021; Raby et al., 2020; Riiser et al., 2020; Ritz et al., 2020; Ruiz-Roso et al., 2020; Terre des hommes, 2021; Tso et al., 2020; World Vision, 2020; J. Zhou et al., 2020; S.-J. Zhou et al., 2020), reviews of medical records and epidemiological reports (Y. Dong et al., 2020; Sinha et al., 2020), and reviews of policies, media, and organizational reports (Barnett et al., 2021; Liu et al., 2020; May & Coulston, 2021; World Vision, 2020). Additionally, scholars have written many commentaries about anticipated experiences and outcomes of the pandemic among children based on their own expertise and review of the literature (Buheji et al., 2020; Fegert et al., 2020; Guessoum et al., 2020; Imran et al., 2020; Marques de Miranda et al., 2020; Masten & Motti-Stefanidi, 2020; Racine et al., 2020). As such, at the time of our literature review (April/May 2021), the research on children and disasters during the COVID-19 pandemic was thus largely reflective of what Peek et al. (2018) characterize as the first four waves of children and disaster. What is missing is research on children's resiliency, strengths, and capacities (fifth wave), and especially children's voices, perspectives, and actions across the disaster lifecycle (sixth wave).

Few in-person social science studies on children and disasters have taken place during the pandemic, and when they have, only with extra COVID-19 safety protocols in place such as physical distancing, providing masks and hand sanitizer, conducting activities outside, and eliminating potential study sites with a confirmed COVID-19 case (cf. S. Anderson et al., 2020; World Vision, 2020). S. Anderson et al. (2020), for example, describe how the pandemic catalysed major changes to their study on girls' menstrual management in resettlement centres after Cyclone Idai in Mozambique:

First, the methodology (originally designed to collect quantitative data) was adapted to a qualitative approach to avoid risks associated with large gatherings of people and the physical passing of surveys and pencils. Secondly, several additional questions were asked during the follow-up focus groups at the request of Mozambique's Ministry of Education and Human Development to understand 1) how COVID-19 had affected the community generally, 2) participants' level of knowledge about preventative measures to avoid transmission, and 3) if/how the

pandemic had affected menstrual management in the communities (S. Anderson et al., 2020, p. 6).

As a workaround, some researchers have opted to interview or survey not-for-profit agencies, community organizations, social service agencies, government departments, teachers, school administrators, child care providers, parents, guardians, and other caregivers who often serve as gatekeepers to learn about the children who are their students and clients (Barnett et al., 2021; Drouin et al., 2020; Fitzpatrick et al., 2020; Mantovani et al., 2021; May & Coulston, 2021; Patrick et al., 2020; Russell et al., 2020; World Vision, 2020). While this approach may be the best or only possibility for research on children and disasters given the pandemic restrictions, there are limits to this approach. In several pre-pandemic research projects, scholars have found significant variation between the accounts of caregivers about their children and the accounts of children themselves (Peek, 2008; Pfefferbaum et al., 2013). It thus remains important to complement the perspectives of adults talking *about* children with the perspectives of the children themselves, as expressed in their own words and art. As pandemic-related restrictions are relaxed and methods that seek direct accounts from children become more feasible, a key research question will be how data collected via caregivers and gatekeepers compare to children's own reflections about their experiences. Such lines of inquiry could produce important insights into issues that went unnoticed or mischaracterized by adults.

To get closer to eliciting children's own expressions of their experiences while still abiding by institutional, ethical, and public health restrictions, other researchers requested caregivers to act as intermediaries. Researchers, for example, trained parents as interviewers (Idoia et al., 2020) and asked caregivers, especially mothers (Malta Campos & Viera, 2021; O'Sullivan et al., 2021), to send in their children's pandemic artwork (Martyn, 2020), children's audio or written narratives (Malta Campos & Viera, 2021), or to discuss their child's pandemic experiences (O'Sullivan et al., 2021). These studies also reflect the increasing use of "call-and-response" type research in which the research team solicits participant-created data. Pre-pandemic, these data may have been constructed in-person in a group research setting – such as drawing activities, group storytelling, or applied theatre in a research workshop with schoolchildren in their classroom (for example, Fothergill & Peek, 2006; Gibbs et al., 2013; Peek & Fothergill, 2009). Re-designed for the COVID-19 context, such data could be constructed by individual children in and around their homes or school

classrooms, then submitted (usually electronically) to the research team. One particularly innovative pilot and feasibility study on the potential of an emotion-based directed drawing intervention and a mandala drawing intervention to improve child mental health during the pandemic used a video-conferencing platform, which enabled the research team to remotely facilitate the interventions with groups of students in their classrooms (Malboeuf-Hurtubise et al., 2021).

Unable to study other people's children, some researchers have begun studying their own children. Holiday (2021), for example, used a combination of in-person and digital ethnography of his own children to study social learning of COVID-19-related health measures via educational video games. In fact, the spark for our own research project began when one of the authors asked her 7-year-old daughter if she was interested in journaling about her pandemic life shortly after the initial COVID-19 school closures. Another author found that observations of and lengthy conversations with her high school-aged daughter were informative for the project.

The published large-scale studies on children's experiences of the pandemic have mostly been conducted by the UN and major international non-governmental organizations such as Save the Children and World Vision (Ritz et al., 2020; Terre des hommes, 2021; World Vision, 2020). Such studies have largely relied upon surveys administered online or by telephone. Several factors help explain why these organizations were able to quickly launch and conduct large-scale research projects: they have their own internal research ethics boards, they have country offices with local staff who continued their work during the pandemic, and they have contact lists of their program participants. These pre-established relationships, local know-how, and pre-existing list of potential research participants at multiple sites were highlighted as key elements in facilitating quick response research at such a large scale (Ritz et al., 2020; World Vision, 2020). While not mentioned specifically in any of the reports as a reason why the study could be conducted and published so quickly, it is likely that being able to rely upon a large team meant that the studies were not majorly hindered when some members of the team were pulled away to attend to caregiving or other responsibilities precipitated by the pandemic. The UN has also released policy briefs with child wellbeing-focused recommendations (UN, 2020) and COVID-19-focused updates to their earlier guidelines on conducting ethical research on children and disasters (Berman, 2020; Berman et al., 2016).

Other groups that work directly with children outside of academia, and that are not subject to university ethics boards, have been nimbler with engaging children directly. While not research projects per se, these initiatives set out to record children's experiences of the pandemic. For example, the Girl Guides of Canada (2021) contacted girls directly, as well as through their parents and guardians, in soliciting inputs for the Girl Guides of Canada Pandemic Time Capsule of girls' stories, videos, photos, and art. Major media outlets, including the Canadian Broadcasting Corporation, have similarly solicited children's narratives and artistic expressions about their experiences. Other media sources, such as *The New York Times*, have done in-depth reporting on children's experiences, often centring the children's voices ("Teens on a year that changed everything", 2021). These records may well become an important data source for future scholarly studies of children's pandemic experiences.

A major trend in research on children and disasters during the pandemic is a shift from in-person to virtual research methods. Researchers have modified their existing repertoire of in-person methodological tools to suit a virtual field. For example, in-person interviews are replaced by online video interviews or phone interviews (O'Sullivan et al., 2021; Raby et al., 2020; World Vision 2020), and in-person questionnaires are replaced by online or phone questionnaires (Mantovani et al., 2021; Ritz et al., 2020; Russell et al., 2020; World Vision, 2020). The exploration and increasing adoption of online interviews and app-based methods were already happening pre-pandemic in social science research more generally (cf. Gray et al., 2020; Kaufmann & Peil, 2020). Not surprisingly, this trend has accelerated during the pandemic (cf. Howlett, 2022), largely attributable to institutional restrictions designed to protect vulnerable populations and researchers alike from catching and transmitting COVID-19, as well as researchers' own convictions to conduct their research in the most ethical way possible. This pandemic-induced shift towards the increasing use of quantitative methods, technology-based methods such as online surveys, online video interviews, social media-based methods, and GIS and app-based methods, and the temporary halt of in-person fieldwork, are similarly reported among disaster researchers more generally (Ritchie et al., 2021).

Paralleling the shift from in-person to online methods is a shift in the locations of children and disaster research. This shift is transpiring in several ways. Researchers who usually conduct studies in another part of their

country or in another part of the world from where they are based are starting projects in their own communities, neighbourhoods, and even homes (for example, Holiday, 2021). In this way, there is a geographical contraction of study sites. Yet, there is a simultaneous expansion of study sites with the enthusiastic uptake of virtual methods. Without budgetary, time, and travel constraints associated with in-person research projects, researchers have increased the geographical range of their projects to include participants all over their province or state, their country, or even multiple countries. There is also an opening up of virtual spaces. This opening is occurring directly, for example, by "entering" children's homes during online interviews (Raby et al., 2020). It is also occurring indirectly, as researchers' attention is focused on the online spaces that children frequent, such as social media websites and online video game worlds (Holiday, 2021). Yet another way in which the geographical shift is transpiring is attributable to the hazard itself. In contrast to all other disasters in living memory, which are localised to various degrees, the pandemic is truly a global disaster, acutely affecting the entire planet. As such, research projects on children and disasters are happening in locations that are otherwise largely exempt from disaster studies (because of the low incidence or absence of hazards in the location). Our own research project exemplifies all aspects of this shift.

The limitations on in-person research methods have posed important challenges. As the online schooling experiences of many children and teachers have shown, engaging children and young people online in a focused manner for a sustained period of time is extremely difficult (Ewing & Cooper, 2021; Yates et al., 2021). For researchers, this challenge may result in shortening online interviews (as compared to in-person interviews) and accepting that there may be distractions within the child's interview environment (and caused by the child themselves – e.g., changing backdrops), and that it may be difficult or impossible to read body language (O'Sullivan et al., 2021). This is especially pronounced if the participant's camera is turned off, and the researcher may have to rely more upon verbal exchanges than show-and-tell or play acting as compared to in-person interviews.

The pandemic is exacerbating the exclusion of certain children's voices from children and disaster research. Unfortunately, recruitment of children marginalized because of their social locations is difficult in disaster research; this challenge has been greatly amplified during the pandemic. For example, among children

whose participation in research projects depends on having a translator physically present, or whose literacy levels – linguistic or digital – thwarts their participation (Ritz et al., 2020). This blind spot is critical because previous research has shown that existing inequalities linked to gender, sexuality, race, ethnicity, socioeconomic status, immigration status, disability, religion, linguistic status, and other social determinants of health are exacerbated during disasters (Cutter, 2006; Cutter & Finch, 2008; Enarson, 2000; Fothergill, 1996; Gibb, 2018). Early media and research reports of the COVID-19 pandemic indicate similar trends in which existing inequalities and exclusions are being amplified, including for children (Li, Zhang et al., 2020). Thus, to better understand the heterogeneity of children, studies should adopt an intersectional approach in explaining how other components of identity affect their experiences (Mullings & Schulz, 2006). This task, however, has proven difficult; some researchers have reported that recruitment in the pandemic has been so challenging that they have had to change their methodology entirely to accommodate a sample size of one (Marchezini et al., 2021). In our study, for example, one challenge of recruitment has been that parents are so overwhelmed with juggling their jobs and childcare that they do not have time to participate or respond to outreach.

Moreover, the reliance on Internet-mediated research methods is skewing which children, and which of their households, are engaging in children and disaster research right now. For example, reliable access to the Internet and a device to interact with a research team is highly uneven, which results in study participants generally coming from more privileged backgrounds (Chiou & Tucker, 2020). One report found that 17 million children in the U.S. did not have high-speed Internet service and 7 million did not have access to computers (Alliance for Excellent Education, 2020). These children were more likely to be children of colour. In a large scale study conducted by Save the Children and its partners in 46 countries with 31,683 parents and caregivers and 13,477 children, Ritz et al. (2020, p. 12-13) note that their sample is skewed: (1) towards people with stable Internet and/or phone access, and who are willing to absorb the cost of receiving phone calls or using their data plan; (2) towards people who can speak or read and write in one of their survey's 28 languages; and (3) towards people with time and interest (which biases the sample *against* the most marginalized and deprived, and persons with disabilities). Dunton et al. (2020) similarly report that their survey respondents were primarily college educated

mothers in high income households and questioned whether their findings could be generalized to children who do not fit this demographic.

These challenges have also spurred researchers studying children and disasters to utilize innovative methodological alternatives that strive to privilege children's own voices while mitigating COVID-19 risks. Our own research project, for example, uses a mixed methods approach that relies upon methods that are done almost entirely remotely and within the confines of the child's own "bubble" or "pod". It uses journaling as a tool through which children are invited to express their everyday experiences and geographies during the pandemic in their own words, drawings, photographs, maps, and audio and video recordings. The journals will be complemented by surveys, interviews, focus groups, and participatory workshops – methods that have previously been used effectively to study the disaster experiences of children (Fothergill & Peek, 2006; Mort et al. 2020; Peek & Fothergill, 2009; Pfefferbaum et al. 2013). We have adapted these methods for pandemic circumstances; the survey is currently online, the interviews and focus groups are being conducted mostly online, and the workshops will be directed by the research team via videoconference. Additionally, we are using podcasting as a research method because the making of a podcast is highly participatory, foregrounds children's own narratives of their experiences, can be done independently with simple tools (e.g., telephone, smartphone, or computer), and the dissemination of a podcast can be a powerful tool for public education, building empathy and connection (Lord, 2021).

In addition to the aforementioned methodological shifts and innovations, we anticipate that the massive shift to online teaching and learning during the pandemic will shape the methodological approaches of children and disaster researchers in the future. Researchers, especially those who have spent the past 2 years experimenting with online teaching and learning, will borrow the successful pedagogical strategies and methods – the ones that truly engage young people – and rework them into highly engaging virtual methods. For example, they may incorporate innovations around bringing "play" into the classroom (cf. Cavanagh, 2021) and include asynchronous activities and assignments. Just as college and university instructors plan to incorporate their successful online teaching strategies into their physical classrooms, we expect that children and disaster researchers will similarly bring lessons

learned from their online research to their in-person research.

Ethical Considerations

Researchers who study children and disasters, and especially those in social science studies or those using a participatory approach, devote a considerable amount of time and energy to thinking through ethical issues and devising research protocols that “do no harm”, and rightly so. It is critical to reflect on the ethical considerations of populations seen as vulnerable, such as Indigenous populations, those living in poverty, or those vulnerable due to age, and to understand past and current exploitation and experiences of discrimination and oppression (Rivera & Fothergill, 2021).

Children and youth are a vulnerable population in the disaster context, often enduring many losses, challenges, and long-lasting effects (W. A. Anderson, 2005; Bodstein et al., 2014; Fothergill & Peek, 2006; Muzenda-Mudavanhu, 2016). Their vulnerability can be psychological, physical, social, economic, and educational (Fothergill & Peek, 2015; Muzenda-Mudavanhu, 2016; Peek, 2008). Children may require forms of physical, social, mental, and emotional support distinct from those required by adults to cope with and recover from disasters (Fothergill & Peek, 2015; Peek, 2008; Peek & Richardson, 2010). This focus on children’s vulnerability and the “children at risk discourse” (cf. Gibbs et al., 2013) is built into the ethics approval process at institutions, whereby studies involving children are subject to additional scrutiny (e.g., ineligible for expedited review) and require additional assent and consent protocols, safeguards, and justifications compared to research with adults. Most scholarly articles and books on children and disasters, in addition to noting their ethics approval, describe specific measures taken to ensure high ethical standards. Measures include, for example: avoiding taking children to places “that are uncomfortable or painful to revisit [in either...] the physical realm or in conversation” (Gibbs et al., 2013, p. 137); using an iterative and continual assent/consent procedure with all child and adult participants (Mooney et al., 2017; Mudavanhu et al., 2015); having the study reviewed or supervised by an experienced family therapist, early childhood educator, psychologist, or social worker (Koller et al., 2010; Mooney et al., 2017; Uttervall et al., 2014); ensuring the project “is perceived as a support to those involved rather than as an additional burden” (Pascal & Bertam, 2021, p. 27); informing participants of the support available to them from a social worker or child life specialist (Koller et al., 2010); and privileging surveys and

research reports “that shared similar values [of the right of small children, their families and their teachers to be heard] and followed ethical procedures” in reporting upon other studies (Malta Campos & Viera, 2021, p. 136).

The current COVID-19 crisis is no exception to this attention to ethics and categorization of children as a vulnerable population. In the pandemic, children’s vulnerability is largely attributed to lapses in education due to school closures. This narrow framing is problematic because: (1) it dismisses their vulnerability beyond educational concerns; (2) it defines children as passive recipients of interventions, thereby ignoring their important contributions to their own and others’ recovery; (3) it suggests an innate, rather than socially produced, vulnerability; and (4) it wrongly homogenizes all children as vulnerable (Gibb et al., 2020; ResiliencebyDesign Research Innovation Lab, 2019). As Berman (2020) argues, it is critical that researchers and policymakers differentiate among vulnerable cohorts of children and recognize that the causes and outcomes of vulnerability vary greatly among children at all scales, from the household up to the global scale.

In UN Children’s Fund (UNICEF) discussion papers on the ethics of conducting research on children during humanitarian emergencies, Berman et al. (2016) and Berman (2020) foreground ethical considerations during an emergency and immediately post-emergency. These issues include: prioritizing a duty of care in which the research team weighs the harms and benefits of conducting research; examining institutional capacity and power relationships among all parties implicated in the research process; ensuring privacy, confidentiality, informed consent, and reciprocity; and ensuring appropriate communication of findings. In addition to these ethical considerations, Berman (2020) notes two extra COVID-19 factors for researchers to consider:

1. The spread of COVID-19 has been a protracted process and containment has been difficult. This has resulted in mandatory lockdowns and the potential for extended isolation of families.
2. In a number of countries, these lockdowns occur in contexts of overcrowding, inadequate sanitation and health infrastructure, and where incomes are earned on a daily basis. These conditions are leading, or are likely to lead, to greater social and economic strain in the poorest contexts (Berman, 2020, p. 4).

Unless data collection activities are absolutely necessary during the emergency phase, Berman (2020) strongly advocates that researchers wait until pandemic

restrictions are lifted before commencing their studies. Even after restrictions have been lifted, ethical concerns may remain about conducting research in certain settings. For instance, ethics boards may ban or avoid approving in-person research protocols, while individual researchers and participants will need to make their own calculations about the level of risk that is acceptable in the context of a dynamic virus threat.

Ethics have featured prominently in our deliberations - for our working group, our study, and this article. We have discussed, for example, ethical considerations of: conducting or not conducting research with children during the pandemic; various qualitative and quantitative research methods; the types, ordering, and wording of questions; recruiting family members and friends as participants; and claiming to centre children's voices then not attributing their real name to their contribution. We have grappled with cross-institutional differences in the ways and timelines in which requirements for research protocols responded to an evolving risk landscape. We sought and have received ethics approval from two of our host institutions, one in the U.S. and one in Canada. For various reasons, between the two institutions, it took nearly a year to obtain research ethics board (REB) and institutional review board (IRB) approval. While our experience is likely atypically long, other social scientists have noted the challenge of obtaining ethics approval rapidly enough in order to conduct quick response research (for example, Asare et al., 2020; Institute for Catastrophic Loss Reduction [ICLR] & the Natural Hazards Center [NHC], 2020; Peek, 2008; Peek et al., 2021). To facilitate the possibility for "timely, ethical, and scientifically rigorous" (Peek et al., 2021, p. 2) post-disaster research, researchers have developed strategies such as multi-institution authorization agreements and pre-approval of research projects in which the specific disaster and study site are inserted at the end (ICLR & NHC, 2020; Vindrola-Padros et al., 2020). While none of these examples were focused on children or composed of researchers based at institutions in multiple countries, we suggest researchers pursue these agreements and pre-approvals.

The difficulty of developing an ethical research project and obtaining institutional ethics approval to work with a population often characterized as vulnerable should not be a reason to abandon working with this age group (Packenham et al. 2017). Indeed, widely accepted ethical standards for human subjects research, such as the principle of beneficence outlined in the Belmont Report, deem it unethical to leave groups out

of studies simply because it would be inconvenient to include them (Gordon, 2020). Thus, these individuals should be included in the research, and the difficulties involved emphasize the need for clearer guidance for researchers and ethics boards, the urgency for more methodological and ethics training for social science disaster researchers, and the importance of sharing experiences and drawing on each other's best practices (Peek, 2008; Peek et al., 2020; Peek et al., 2021). Otherwise, we risk further silencing children's experiences of disaster, and perpetuating what Robert Chambers (2017) describes as biases, blind spots, and neglected areas of research.

Why the Changes?

At risk of restating the obvious, the world was upended by COVID-19, which changed the way many people live their lives. The world of research on children and disasters was not exempt from this upheaval. The following discussion explores some of the justifications for the observed changes in the way researchers study children and disasters.

One, life for *everyone* changed. During the pandemic, around the world, public health restrictions were put in place to limit the spread of COVID-19. These measures included travel restrictions or travel bans, physical distancing, mask wearing, shelter-in-place mandates, and so on. These restrictions constituted one set of barriers to researching children and disasters during the pandemic in that researchers could not physically access study populations.

Two, these restrictions were compounded by institutional COVID-19-specific restrictions on research with human subjects. In non-pandemic times, REBs and IRBs are particularly attentive when scrutinizing proposed research on populations typically deemed vulnerable. While the need for such oversight and restrictions is valid, it creates challenges for university-based researchers that add time and layers of complexity to studies involving children, particularly in the context of disasters. During the pandemic, many REBs and IRBs in Canada and the U.S. imposed additional restrictions on conducting research with such populations, which effectively curtailed social science in-person research with children.

Three, these difficulties were further exacerbated by the impacts of the pandemic and of critical work, family, social, and political commitments in researchers' personal lives. Disaster researchers reported diverse personal effects of the pandemic ranging from a challenging work-life

balance, childcare and caregiving challenges, decreased productivity, increased productivity, languishing and emotional toll, strain on spousal relationships, and challenges with work from home logistics (Ritchie et al., 2021). For example, some college and university-based researchers had to switch to emergency online teaching in March 2020, and subsequently had to prepare and deliver online or bimodal courses over subsequent semesters. This meant that they devoted most of their energy to teaching. Other researchers were dealing with the medical, financial, and psychosocial impacts of the pandemic on themselves, their households, and their extended families. Other researchers had caregiving responsibilities, such as caring for and educating young children during childcare centre and school closures and tending to elderly relatives. During the early months of the pandemic in North America, there was a swelling of critical social movements – notably Black Lives Matter and Indigenous Lives Matter – in which some disaster researchers were personally and professionally involved (Ritchie et al., 2021). As a result of pandemic-induced challenges and broader social movements coming to the fore, some disaster researchers made a deliberate decision to not do research at this time to focus on other priorities.

Conclusion

Thus far, there is insufficient evidence to claim that a seventh wave of research on children and disasters has begun. It will only be in hindsight that researchers will be able to point to a start date. We contend, however, that the massive adoption of online methods during the COVID-19 pandemic is laying the foundation for a seventh wave of children and disaster research characterized by its integration of in-person and virtual worlds, and of in-person and virtual research methods. Rather than *initiating* this transition to a hybrid or blended model, the pandemic is *accelerating* the transition, and compelling more of the research community to engage than might have otherwise. This process is due to a confluence of factors:

- 1) the growing importance of the online world in children's everyday non-pandemic social lives with their peers;
- 2) the increasing integration of the online world in the educational lives of children (e.g., homework and in-class activities facilitated by blended-learning platforms, replacement of math worksheets with math-focused video games, assignments requiring the integration of online tools);
- 3) the importance of videoconferencing for communicating with out-of-town friends and family;
- 4) the pre-pandemic interest among researchers to explore digital research methods (for example, Cox et al., 2019; Delicado et al., 2017; Pfefferbaum et al., 2013);
- 5) the perspective of the next generation of disaster researchers - who will have been online their entire lives - integrating digital methods into their studies will likely seem "normal" and exclusively in-person research designs unusual (just as researchers in the 1980s and 1990s likely could not have imagined doing disaster research through videoconferencing);
- 6) the rising pressure from (youth) activists, institutions, funding agencies, and researchers themselves to reduce the carbon footprint of research, including travel (Fent et al., 2022);
- 7) the push for greater alignment among disaster reduction, climate change, and the UN's Sustainable Development Goals work, and with decolonization, Indigenization, and social justice efforts, which could result in more community-driven disaster research supported by – instead of led by – university-based researchers and their digital methods.

Taken together with the published studies on children and disasters during the COVID-19 pandemic discussed earlier, these factors suggest that the online world is being normalized as being on par with the physical world, as opposed to secondary or complementary to it. The seventh wave of children and disaster research will thus likely be characterised as a "bricolage" of methods originating in both in-person and virtual fields, adapted in various ways for both in-person and virtual fields. We see this as an exciting development, and one that is better attuned to the spaces where children live their lives, and the ways in which they live their lives – in an intertwining of virtual and in-person worlds.

Like W. A. Anderson (2005), we present a challenge to researchers entering a seventh wave of research on children and disasters. We invite researchers to build on the innovative research methods, characteristic of the sixth wave, that centre children's own voices, interests, and rights (Peek et al., 2018). Leveraging children's contributions to develop culturally sensitive approaches has already been done in risk reduction policy, for example, through photovoice and theatre/arts-based approaches that demonstrate the experiences of children from across social strata (Mort & Lloyd Williams, 2019). These methods could easily translate into innovative, ethical, and participatory ways that social science

researchers are currently using to engage with children despite the limitations of COVID-19.

Additionally, we encourage methodological approaches that recognize children as “vulnerability bearers” as opposed to “vulnerable populations” (Peek, 2019; RbD, 2019). We suggest engaging in both the physical and virtual worlds where children live their lives. We advocate for prioritizing approaches and methods that contribute to the broader anti-racism, decolonization, and Indigenization efforts of disaster scholars and practitioners (cf. Bonilla 2020a; 2020b; Chmutina et al., 2021; Rivera, 2022). And finally, we ask researchers to share their experiences so that we, and others in the field, may learn from one another, and especially from the children with whom we engage, in building more socially and environmentally just, child-centric research on children and disasters.

Acknowledgements

This work was supported by the National Science Foundation-funded Social Science Extreme Events Research (SSEER) network and the CONVERGE facility at the Natural Hazards Center at the University of Colorado Boulder (NSF Award #1841338). This work was also supported by the Quick Response Research Award Program. The Quick Response Research Award Program is based on work supported by the National Science Foundation (NSF Award #1635593). Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the NSF, SSEER, CONVERGE, or the Natural Hazards Center.

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