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A Comparative Study of the Mental Health Effects of War, COVID-19, & Surviving a Natural Disaster in Children

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**A Comparative Study of the Mental Health Effects of War, COVID-19, & Surviving a
Natural Disaster in Children**

An honors thesis presented to the Department of Anthropology,
University at Albany, State University of New York in partial fulfillment of the requirements for
graduation with Honors in Human Biology and graduation from the Honors College

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Abstract

Towards the end of 2019, the SARS-CoV-2 virus outbreak from Wuhan, China has thrown the world into a global pandemic. Given the novelty of the virus and updated medical standards, the effects of COVID-19 on the mental health of children were and currently are not fully known. This study aims to map out an approximate timeline of children's mental health based on other forms of traumas such as war and natural disasters. This is a review of mixed-method design of numerous studies from the three variables. Data was collected through self-reported measures of mental health symptoms including anxiety, depression, and post-traumatic stress disorder (PTSD), and qualitative interviews. Analysis indicates that all three events were associated with increased harmful mental health symptoms. Nonetheless, the severity and duration of each symptom varied between groups based on the intensity and period of exposure. Individuals who experienced war reported the greatest severity in chronic symptoms, followed by individuals with COVID-19, and finally individuals who survived a natural disaster. Findings suggest that mental health support and intervention strategies should be tailored to the specific needs of individuals who have experienced several types of traumatic events.

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Introduction

For numerous children around the world, the SARS-CoV-2 pandemic is their first experience of extreme trauma on their physical and mental health as a result of public lockdowns, social distancing, mask mandates, etc. Traumatic events during an individual's childhood can have negative long-term effects if not taken seriously.¹⁰⁻¹¹ Developmental cascades are experiences a child has that greatly influence how they behave in adulthood. Consequently, children who develop mental health disorders at a young age are at risk for experiencing negative symptoms later on. The reason for this is that much of human development is centered around the experiences we have in our early life. The effects of trauma on a child's psyche will vary from child to child based on their developmental stage and thereby how they appraise the event that will shape their mental growth.³ In terms of post-traumatic stress development, a child and adult will appraise the event similarly.³

The importance of assessing other traumatic exposures in disaster-affected populations to get a truer estimate of trauma-related mental health disorders was significantly exaggerated.⁷ The use of a matched comparison group collected at the time of initial recruitment is a methodological strength of this type of research. This approach allows for a more accurate comparison between those exposed to trauma and those who were not, which can help isolate the specific effects of the trauma.⁷

There are very few longitudinal studies on the effects of a global pandemic on children's mental health as adults. Consequently, this will be a review of how other childhood traumas such as exposure to war and surviving a natural disaster affect children's mental health to theorize the long-term effects of COVID-19 on children's mental health, and an analysis of how the severity and duration of the traumatic stimulus influence the severity and duration of the symptoms.

Nevertheless, current literature on children's mental health during the pandemic are mostly in agreement that the pandemic has negatively impacted children's development and mental health, increasing their risk of developing mental disorders in the future and setting them up for failure if no action is taken to mitigate the negative mental health effects of isolation and social distancing.^{4-5, 10-11, 13, 18-19, 21, 24}

Throughout history, war has inflicted immense harm on humans, and its exposure can have devastating effects on one's mental health, especially on children who have not fully matured. Children exposed to war-related trauma are highly likely to develop post-traumatic stress disorder (PTSD), anxiety, and depression. The effects of war on children can last up to 12 years, and therapy is necessary to help children rehabilitate back to a relatively normal mental state. War-exposed children exhibit severe post-traumatic stress reactions, with family attachment style having a significant impact on their mental health outcome. Children who have a secure and warm attachment with their families reported lower mental health issues. Harry Harlow's study on rhesus monkeys highlighted the importance of attachment and physical contact in the development of healthy social and emotional relationships in primates.⁹ The mental health of the caregiver is directly correlated with the child's mental health outcome. Children's exposure to war and conflict causes a high psychological burden on refugees and emphasizes the need for continuous mental health care. Long-term mental health care is also necessary for young people and families fleeing war and seeking refuge. The experiences of children during and after war are in contrast with their need to develop in a safe, secure, and predictable environment.

Finally, only a few studies examine the longitudinal psychological effect of experiencing and surviving a natural disaster during childhood. I have found four studies examining the

psychological outcome of experiencing a natural disaster as a child and following up a varying number of years later. The studies show that while some children experience post-traumatic stress disorder after a natural disaster, symptoms may decrease over time.^{7-8, 14-15} However, children may still struggle with mental health issues related to the disaster long-term that may influence educational and occupational disadvantages for affected individuals. Additionally, the studies indicated that females are more likely than males to develop PTSD and depressive disorders after a natural disaster. All of the studies concluded that it is essential to provide treatments for affected children as survivors as soon as possible. Overall, the studies highlight the importance of considering gender and exposure when studying the effects of disasters on mental health.

This review of COVID-19, war-related, and natural disaster-related traumas aim to approximately depict the course of mental health of children for each type of trauma. Analyzing the trends of the initial and follow-up measurements of these studies will allow us to generate a progression table of what we can expect to observe over time. An approximate timeline of the mental health effects of these traumas can then be used as a guideline for early interventions.

My main hypotheses are:

- Anxiety, depression, and post-traumatic stress disorders will be the most common mental health effects of each type of trauma with anxiety being initially the highest immediately after the event then slowly dropping after the event where depressive symptoms begin to appear and post-traumatic stress following suit.
- Exposure to war will have the most severe mental health consequences due to the violent nature of the event followed by surviving a natural disaster because of the

life-or-death situation children face and finally COVID-19 due to the novelty of the virus and the greater likelihood of survival for healthy children.

Additionally, I aim to research interventions that could be used as guidance for caregivers and mentors for safeguarding the mental health of children.

Sars-CoV-2 Review

Current studies on the mental health of children during the pandemic have all suggested that the mental health of children has declined during the pandemic compared to before the outbreak.^{10-11, 18} Researchers believe that isolation and social distancing measures implemented by WHO and the CDC to mitigate the spread of COVID-19 have delayed the development of children around the world which may have negative long-term effects on the child's mental health and future well-being in terms of job security and overall quality of life.^{11, 18} A survey conducted by Ravens-Sieberer, et al¹⁸ has found that children in Germany believe their quality of life to be worse during the pandemic compared to before, in which 15.3% of the sample reported a low quality of life whereas the percentage increased to 40.2% of the sample stating to have a low quality of life during the pandemic. Further analysis of their data indicates that younger children, around 11 to 13 years old, were significantly more affected than older children, around 14 to 17 years old. Their data indicates that there was a 33.6% increase in low quality of life in younger children compared to a 22.2% increase in older children. This study illustrates a few points: 1) younger children are hit significantly harder than older children in terms of happiness 2) the pandemic has decreased the quality of life in children in Germany.

Further studies by Schmidt, et al²¹ in Europe have shown that younger children aged 1 to 6 years old have demonstrated an increase in oppositional-defiant behaviors whereas adolescents have reported a significant increase in emotional complications 4 to 6 months after the initial

outbreak.²¹ Similarly, the reason for this is due to a slowdown in children's development causing them to stagnate and exhibit poor behaviors.²¹ They found that between 2.2% and 9.9% of all the children sampled reported behavioral problems above the clinical cut-off before the pandemic and that between 15.3% and 43.0% reported an increase in these problems during the pandemic. Analyzing the data, they observed that age, gender, and exposure to COVID-19 were significant factors in the frequency and type of problems children experience. Preschoolers, 1 to 6 years old, had the greatest increase in oppositional-defiant behaviors such as crying, sleeping problems, clinging, sadness, and being upset due to separation. In schoolchildren, emotional issues such as mood changes, sulking, nervousness, and crying were frequently observed. Adolescents (14 to 19 years old) were observed to have the highest percentage of problems with increased anxiety, feelings of tiredness and sadness, and frequent mood changes.²¹ The results are supported by other studies concluding an overall decrease in developmental progress and greater immaturity.

A study done on children in India highlights the negative impact of the pandemic on their physical and mental health with an emphasis on children whose parents are affected by the virus or are working in hospitals. The study observes that children staying at home due to the lockdown are likely to spend more time in front of a screen and on the internet, which can lead to psycho-social problems reducing their self-esteem and developing an internet addiction.²⁴ Additionally, spending more time indoors can make children vulnerable to the effects of indoor pollution, which can affect their brain development resulting in limited cognitive abilities.²⁴ In terms of attachment, children who are separated from their parents are more susceptible to psychological problems, including depression, stress, anxiety, avoidance behaviors, and post-traumatic stress.²⁴

A more recent study done by students attending the University at Albany concluded that the younger adult population in the United States saw a significant increase in anxiety and depressive symptoms. The reasons for this vary due to the mixed responses of the individual states to the virus outbreak. However, the students propose that indirect factors of the virus are a major contributor to the increase in mental health problems in young adults but also stress that there are many compounding variables, such as an increased frequency of mass shootings, that makes it very difficult to conclude one specific cause for the increase in mental health problems.

War Trauma Review

Throughout history, war has plagued humanity, and exposure to such an extreme form of violence can and will have devastating effects on one's mental health as witnessed in ex-military soldiers. The harmful effect will have a significantly larger impact on a child's mental health because they have not fully matured. It is very evident that children exposed to war-related traumas are highly likely to develop some form of PTSD and other mental problems such as anxiety and depression.^{2-3, 6,12, 16-17} A study by Thabet & Vostanis¹⁶ has observed that children with PTSD who have experienced multiple instances of war-related events have an increased risk of worsening their PTSD symptoms. In addition, multiple studies have also shown that the effects of war on children can last up to as long as 12 years.^{2-3, 12} However, they also observed that children will slowly return to a relatively normal mental state if the stressor was removed. In addition to removing the stressor, mental health therapy is strongly suggested to help rehabilitate the children back onto a more normal development course. Despite therapeutic efforts to mitigate the effects of war on children, most will continue to exhibit some symptoms of PTSD and some amount of emotional and behavioral issues.¹⁶⁻¹⁷ Results of these studies indicate that, to some degree, a child's mind can be very resilient even to the most extreme levels of stress.

Children exposed to war and flight can experience a range of distress and post-traumatic stress reactions.³ The reason for this is that the subjective appraisal of the experience by the child plays a significant role in determining their stress reactions. The researchers emphasize the importance of the individual's cognitive appraisal of their experience that will result in various reactions. The most common measurements of the psychopathologic effects of war are post-traumatic stress, anxiety, and depression.³ Their meta-analysis of eight studies on children who fled from war states that 23% reported having some form of post-traumatic stress, 14% with depression, and 16% with anxiety.³ The study highlights that rates of these mental disorders are higher among children affected by war and conflict compared to the general population. The high psychological burden on refugees underscores the need for continuous mental health care beyond the initial period of resettlement. Separation from parents and the loss of safety are significant issues that impact children's social-emotional development, well-being, and mental health. Overall, the study emphasizes the urgent need for support during and after war-related exposures, as well as for long-term mental health care for young people and families fleeing war and seeking refuge. The experiences of children during and after war are in contrast with those who developed in a safe, secure, and predictable environment.

A further look into the psychological effect war could have on family attachment observed by Palestinians living in the Gaza Strip. Mladenović et al (2018) showed that a secure family type with warm siblingship and optimal parenting strategies was more than twice as common as an insecure family type with negative relational patterns. The quality and type of family attachment and other external relationships all contributed significantly to the child's mental health, as children in families with insecure attachment, sibling conflicts, and negative

parenting exhibited symptoms of heightened aggression, anxiety, and depression.¹⁷ As expected, children in families with secure and warm attachments reported lower mental health issues.

A look at younger children (1.5 to 5 years of age) exposed to constant war-related trauma found that they exhibited severe post-traumatic stress reactions.⁶ The study found that there was a significantly greater risk for preschoolers (3 to 5 years) to develop post-traumatic stress disorder compared to younger children (1.5 to 3 years). The reason for this appears to be directly related to the child's exposure to the trauma and the mother's proximity during the trauma. As discussed, family attachment style has a significant impact on the mental health outcome of traumatized kids. This is in line with multiple studies by Mary Ainsworth observing that children actively sought contact with their mothers when they were afraid, hurt, hungry, and simply not in their immediate vicinity. They treated their mothers as a secure base from which they could explore the world and showed distress when separated from them.¹ Another likely contributor to this phenomenon is the child's developmental stage resulting in different appraisals of the same event. Overall, the study found that more than a third of the world's youth exposed to war over an extended period are likely to develop post-traumatic stress, placing their futures at significant risk and requiring intense interventions.²⁻³ There was a direct correlation between maternal and child mental health indicating that support and intervention for caregivers are just as important, if not, more important in some instances than for the child.

Current literature has highlighted the direct correlation between the mental health of the caregiver and their child. Mentally healthy caregivers can spend more positive time with their child resulting in positive reactions from the child. Controversial experiments done by Harry Harlow on rhesus monkeys observed that infant monkeys preferred to cling to the cloth surrogate that provided warmth over the wire surrogate that provided breast milk.⁹ This indicated that the

infants' desire for comfort and contact was stronger than their desire for food. His study emphasized the importance of attachment and the need for comfort in the form of physical contact in the development of healthy social and emotional relationships in primates.

Interestingly, a study done in Palestine found that the rate of children reporting moderate to severe post-traumatic stress symptoms decreased by 30.6% just after a one-year period.¹⁷ However, a significant number of children (20.9% & 31.8%) were rated above the clinical cut-off for mental health problems according to parents and teachers respectively.¹⁷ Thabet and Vostanis (2000) noted that strong predictors of long-term post-traumatic stress symptoms were the number of traumatic experiences a child could recall at the first assessment. They concluded that if the stressor was removed, there was a significant reduction in post-traumatic symptoms and other mental health problems in children over a one-year period. However, a considerable proportion of children still experienced mental health problems at follow-up, indicating a need for ongoing support and intervention.

Natural Disaster Review

Similar to war-related trauma, children that survive a natural disaster are highly likely to develop some form of PTSD and anxiety.^{7-8, 14-15} However, unlike war trauma, children who survived a natural disaster event tended to only suffer from a small long-term effect on their mental health that significantly diminished by the time of the follow-up interview.^{7-8, 14-15} This observation makes sense due to the perceived reduction in the severity of the experience compared to war. However, natural disasters are life-and-death events that will have considerable effects on children's mental health.

The longitudinal impact of surviving a natural disaster on children's mental has been examined by multiple researchers. One of the longest studies examining the traumatizing effects

of experiencing a natural disaster was published by Morgan et al. (2003) following up 33 years later. The Aberfan disaster happened in 1966 and was a coal mine collapse that buried a school and the nearby houses, killing 116 children and 28 adults.¹⁵ The demographic of the survivors who agreed to take part in the study at the time of the disaster was on average 7 years old and 40 years at the time of the follow-up. The sample comprised an equal split between male and female participants. Self-reports from the interview suggest that the experience of the disaster is roughly equivalent to other comparative traumas such as witnessing someone being badly injured or killed, being seriously attacked, or assaulted, and being involved in a fire, flood, or other natural disasters. Survivors were however 3.38 times more likely to develop post-traumatic stress than a comparison group from a nearby village. However, the village comparison group had high levels of psychopathological disorder, resulting in a possible ceiling effect making it difficult to compare the means within and between the two groups.¹⁵ Between the survivors and comparison groups, there was no significant difference in the frequency of any anxiety, depressive symptoms, or substance misuse.¹⁵ Further assessment found that over half (61%) of the participants had experienced post-traumatic symptoms within 2 weeks of the interview and that 29% of them met the diagnostic criteria for PTSD at follow-up¹⁵ suggesting that the psychological effect of childhood trauma can persist and lead to the onset of long-term post-traumatic stress.

Another study published by McFarlane & Van Hooff (2009) followed survivors of the 1994 bushfires in Victoria, Australia 20 years later. Their data indicate that, although children survivors were rated as more symptomatic by their parents following the event, the longitudinal effects of anxiety and depressive disorders were small.¹⁴ However, educational and occupational disadvantages remained,¹⁴ but this may not have been statistically controlled for the individual

socioeconomic status of each child at the time of the disaster. The study also suggested that traumatic events other than disasters in the general community may also affect the psyche.¹⁴ However, the data indicates that despite continued distressing symptoms, low rates of PTSD were observed.¹⁴

Finally, a study of the Buffalo Creek Survivors 17 years later has concluded that the survivors of the event had ‘recovered’ 17 years later at the time of the follow-up.⁸ However, contrary to the previous two studies and similar to the longitudinal study in the Gaza Strip¹⁶, Green et al. (1994) found that there were significant decreases in the overall severity ratings and in some specific symptoms over time. However, some symptoms, such as substance abuse and suicidal ideation, increased over time.⁸ The rates of post-traumatic stress decreased by 25% and there was no significant difference based on age although women reported more post-traumatic symptoms than men and all current cases were women.⁸ Overall, individuals who were exposed to the disaster experienced a reduction in the severity of their symptoms over time. This could be attributed to the plasticity of the human mind and/or the effectiveness of treatment interventions. The finding that women had more PTSD-related symptoms than men is consistent with previous research that has shown that women are more likely to develop PTSD after exposure to trauma.⁸ However, the fact that all current PTSD cases were women could indicate that women are more likely to seek treatment for PTSD, and/or that men may be less likely to report their symptoms due to social pressure on men and acceptance towards women. Overall, the study provides some insight into the long-term effects of disasters on mental health and suggests that while symptoms may decrease over time, some individuals may still struggle with mental health issues related to the disaster. The study also highlights the importance of considering gender and exposure when studying the effects of disasters on mental health.

A study examining the effects of the Spitak earthquake on the mental health of Armenian children up to 5 years after the event studied survivors in two intervals: 1.5 years after and 5 years after the disaster. Goenjian et al. (2005) measured symptoms of complex post-traumatic stress and depression in three groups of children: from Spitak, the epicenter of the earthquake, from Gumri, another heavily affected city that received treatment, and from Yerevan, a city that was not directly affected. At 1.5 years after the event, the study found significant differences in post-traumatic stress reports among the three groups, with children from Spitak having the highest scores followed by children from Gumri and finally from Yerevan. Both exposed groups had scores above the diagnostic cutoff for post-traumatic stress. 5 years after the earthquake, children from Spitak continued to have the highest prevalence of post-traumatic stress, but similar to the Buffalo Creek study,⁷ there was a significant decrease in scores within and between all three groups.⁷ The results for depressive disorders were significant between groups with children from Spitak having the highest rates for depression at both time periods. At 1.5 years after the event, children from Gumri and Yerevan depression scores were not above the clinical cutoff but after 5 years, their scores increased to just below the clinical cutoff. Similar to the post-traumatic scores, there were no significant differences in depression scores between groups. Further analysis of the data noticed that females had significantly higher post-traumatic stress and depression scores than their male counterparts at both time intervals.⁷ As time progressed, the difference in scores between genders increased and at 5 years the difference between them was significant. Overall, the results suggest that the intensity of the trauma has a significant and long-term impact on the mental health of children. It also highlights the importance of providing treatments for affected children as survivors from Gumri reported a lower frequency of post-traumatic stress and depression than children from Spitak that did not receive treatment.

Methods

Due to the novelty of the recent pandemic and updates to the medical standards, longitudinal studies on pandemic children's mental health are extremely limited, thus, I will refer to reviewing other forms of traumas on children's mental health and relate them to pandemic children. A literature search of studies relating to the mental health effects of COVID-19, war, and natural disasters respectively was performed using the Google Scholar database. I found more studies analyzing the effects of experiencing natural disasters and war-related trauma in children an X amount of time after the event. After compiling the information into Excel, I compared the effects of the trauma at various stages along its progression and sought to match it with how the pandemic is currently going. After creating a very generalized timeline of psychological events of war and natural disasters, I used inferential statistics to work out what effects we could anticipate the pandemic to have. Key phrases used in the Google Scholar search engine were 'children', 'war', 'natural disaster', 'longitudinal effect', 'mental health', and 'COVID-19'. For this review, to simplify the findings, the operational definition of childhood and children refers to being under 18 years. Subsequently, adulthood and adults refer to being over the age of 18 years. Studies from the reference list of prevalent studies were used as further material for review. Additionally, relevant studies from any time were used. Overall, all of the studies were assessed qualitatively.

Timeline of Psychological Events

Studies of the mental health effects of COVID-19 are limited due to the novelty of the virus, as such, I evaluated studies examining the effects up to 6 months after the initial outbreak in December 2019. Early findings, approximately 1 to 2 months after the initial outbreak, observed children in India were found to be highly susceptible to increased rates of depression,

anxiety, and stress.²² Around 4 months after the initial exposure, studies in China and Europe found that 4.3 to 18.92% of children between the ages of 1 to 15 had anxiety and 4.3 to 11.78% with depression.^{4, 18} 5 to 6 months later, a study in Germany found 24.1% of children had increased anxiety and 62.1% with depression.

Multiple studies on war have shown that mental health effects can last up to as long as 12 years.²⁰ When the stressor of war was removed in cases where families fled, studies found that the frequency of negative mental health symptoms was reduced but still present.³ A study in Palestine found that rates of post-traumatic stress decreased a year after exposure to war-related trauma.²³ However, the subjects were still rated above the clinical cut-off for mental health problems. Significant influences on long-term effects were attachment styles. Children who had a secure and warm attachment with their families reported lower mental health issues than children with insecure attachments and a toxic family environment. The mental health of caregivers is a major contributor to the attachment children will have with them. Mary Ainsworth's work has shown a direct correlation between the mental health of caregivers with that of their child.¹ Finally, age-related differences were observed showing that younger children were less likely to develop post-traumatic stress compared to older children.¹⁰

In terms of experiencing a natural disaster, the longest study was 33 years and looked at survivors of the Aberfan disaster. Researchers found that initially, survivors reported sleeping difficulties, nervousness, lack of friends, unwillingness to go to school, and enuresis which are all signs of post-traumatic stress, anxiety, and depression.¹⁵ At the time of the follow-up 33 years later, survivors were 3.4 times more likely to have developed post-traumatic stress disorder than non-affected subjects in a nearby village.¹⁵ Additionally, more than half of the survivors reported

experiencing a post-traumatic symptom within two weeks of the interview indicating that life-or-death events in childhood can result in long-term post-traumatic stress.¹⁵

The second longest study was on the survivors of Australian bushfires 20 years after the event. Effects of anxiety and depression were small in survivors at follow-up.¹⁴ Another study with a similar follow-up period is on Buffalo Creek survivors following 17 years after the initial disaster. Rates of post-traumatic stress decreased by 25% with no significant difference based on age, but females reported more symptoms than men and were the only ones to currently have post-traumatic stress.⁸ However, other mental health disorders increased such as substance abuse and suicidal ideation.⁸ This could indicate long-term anxiety and depression.

Finally, the shortest follow-up study was done on Armenian children that survived an earthquake. Children at the epicenter of the earthquake reported the highest rate of post-traumatic stress and depression 1.5 and 5 years after the disaster compared to another city that was minimally hit by the earthquake and one that was unaffected.⁷ However, 5 years after the disaster, rates of post-traumatic stress were lower in all groups while rates of depression in the minimally hit city and unaffected city increased to just below the clinical cut-off.⁷

Interventions

The COVID-19 pandemic has led to increased psychopathology in the youth worldwide, and identifying factors that protect against this is crucial for restoring them back to healthy development. A study combining two longitudinal samples of children and adolescents found that pandemic-related stressors were associated with increases in internalizing and externalizing symptoms, but having a structured routine, reduced screen time, lower exposure to pandemic-related news, extended periods outside, and adequate sleep were associated with reduced mental health problems.¹⁹ There was a negative correlation between stressors brought about by the

pandemic and psychopathology in the youth when their screen times were limited and disappeared in children, but not in adolescents.¹⁹ This observation provides valuable insight into simple interventions families can use to promote resilience against mental health problems during the pandemic and any other challenging event.

As a result of the public lockdowns, children worldwide were staying indoors more resulting in greater screen time and less social interactions. In many cases, children whose parents were not present due to the pandemic suffered even more psychopathologic problems.²² To combat these issues, researchers suggest parents reduce their children's use of screens and the internet and encouraged parents to participate in physical activities with them. For children who are separated from their parents, parents should make attempts to increase communication with their child via phone calls and video chat. In more severe cases, mental health services are recommended.

Literature on the mental health effects of war on children has found that children exposed to war-related traumas are highly likely to develop some form of post-traumatic stress and other mental health problems such as anxiety and depression. Studies have shown that the effects of war on children can last up to as long as 12 years with children who experienced multiple instances of war are at risk of having their symptoms worsening.¹⁶ However, if the stressor were to be removed, in addition to therapy, data indicates a reduction in mental health problems and a return to a relatively normal development.

Given that research about war-related traumas consistently results in larger magnitude effects, I believe researching mitigation efforts for war-affected children would serve as a good blueprint for less severe forms of traumas such as the pandemic. Current literature on the subject strongly recommends the restoration of the afflicted children's environment to normalcy as soon

as possible to lessen the impact on their mental health. The afflicted should be given basic primary health care including medicine, food, water, and shelter.²⁵ After their basic needs have been met, a return to their daily routine should be established to start the process of restoring them to their former mental state.²⁵

Discussion

In summary, the mental health effects of traumatic events can persist for years, even after the stressor has been removed. The mental health outcomes of children exposed to traumatic events are influenced by age-related differences, attachment styles, and the mental health of their caregivers. Therefore, it is important to provide support and interventions for children and families exposed to traumatic events to mitigate the long-term mental health effects.

In terms of assessing the accuracy of my hypotheses, my claim that anxiety, depression, and post-traumatic stress disorders will be the most common mental health effects of each type of trauma with anxiety being initially the highest immediately after the event then slowly fading after the event where depressive symptoms begin to appear and post-traumatic stress following suit was supported. My second claim that war-exposed children will exhibit the most severe mental health symptoms followed by survivors of natural disaster events and finally pandemic children was partly incorrect. According to some studies, self-reported symptoms of mental health due to the pandemic were more prevalent than symptoms due to a natural disaster event. Although it should be noted that only a handful of articles were used to come to this conclusion.

The analysis of various studies suggests that the mental health effects of traumatic events, including natural disasters and war, can last for years, and in some cases, even decades. Studies examining the effects of the recent pandemic on children's mental health up to 6-months after the initial outbreak have found increasing rates of depression, anxiety, and stress. Age-related

differences were observed, with younger children being less likely to develop post-traumatic stress compared to older children. There are many compounding factors that contribute to this difference including different parenting strategies, stage of development, environmental conditions, etc. Additionally, family health was found to be a significant factor in determining the mental health outcome of the child.

The data from the initial assessment indicate that children tend to experience higher rates of anxiety and depression following their exposure to any of the three types of traumas. This may be attributed to the unexpected and abrupt nature of the event, which can suddenly disrupt their sense of normalcy. Furthermore, when it comes to life-threatening circumstances, such as violence related to war or natural disasters, survivors may become more aware of the fragility of their own lives as they reflect on their experiences and the people that were lost in the event. The loss of a sense of safety is a significant factor that will affect children social and emotional development. Again, family health and attachment styles are key to mitigating such effects on children in these situations.

Long-term observations on survivors of natural disasters, including the Aberfan disaster and Australian bushfires, have shown that rates of anxiety and depression can diminish over time but self-reported symptoms of post-traumatic stress at follow-up have shown that adverse effects can linger. Additionally, females were found to report the most symptoms of mental health than males at the initial and follow-up evaluations. This statistic should not be taken at face value due to multiple reasons for this phenomenon such as the difference in social pressures placed on gender roles, etc.

Similar patterns have been observed in survivors of war-related trauma. The reason for this is the appraisal of the situation is comparable to experiencing a natural disaster as they are

both relatively violent life-or-death events. For children that fled from war zones, rates of post-traumatic stress have decreased contrasting with children who are unable to flee and thus are repeatedly exposed to violent acts. Unlike other forms of prolonged stress, war-related violence is difficult to be desensitized to so removing the stressor should become the first step to improving mental health.

It is important to keep in mind that the psychological effects of each type of trauma presented are based on very raw estimates and should not be taken as fact due to the limited amount of data used to generate these conclusions. Moreover, it is also important to note that each study examined did not utilize the same measurements or calculations when analyzing their data, which may affect the accuracy of the conclusions drawn.

One way to improve the accuracy of any research is to increase the amount of data. For this study, this would include gathering more articles to analyze. Another way to improve the accuracy would be to check that the studies being analyzed are using similar methods to analyze their data. This would make it easier to compare data from different sources. Therefore, further research is needed to confirm and refine the conclusions made in this paper.

Future studies on the mental health effects of COVID-19 on children beyond 6 months after the initial outbreak could be conducted to provide more concrete insight into the long-term effects of the pandemic on mental health and observe the trajectory in comparison to other traumas. Additionally, studies could explore the reason females are reported to have a higher frequency of mental health disorders after a traumatic event than males by analyzing whether social pressures play a significant role or not. Finally, research testing the effectiveness of different types of interventions for children with a cost-benefit analysis of the aforementioned treatment could help mitigate psychopathology in poorer communities.

References

1. Ainsworth, M. S. (1989). Attachments beyond infancy. *American psychologist*, 44(4), 709.
2. Bellamy, C., (2004). *The state of the world's children*. New York: United Nations Children's Fund.
3. Bürgin, D., Anagnostopoulos, D., et al. (2022). *Impact of war and forced displacement on children's mental health—multilevel, needs-oriented, and trauma-informed approaches*. *European Child & Adolescent Psychiatry* 31, 845–853.
<https://doi.org/10.1007/s00787-022-01974-z>.
4. Chen, Fangping, Zheng, Dan, Liu, Jing, Gong, Yi, Guan, Zhizhong, Lou, Didong (2020). *Depression and anxiety among adolescents during COVID-19: A cross-sectional study*. *Brain, Behavior, and Immunity*, 88, 36-38.
<https://www.sciencedirect.com/science/article/pii/S0889159120308916>.
5. Elharake, J.A., Akbar, F., Malik, A.A. et al. (2022) *Mental Health Impact of COVID-19 among Children and College Students: A Systematic Review*. *Child Psychiatry Hum Dev*.
<https://doi.org/10.1007/s10578-021-01297-1>.
6. Feldman, Ruth, Vengrober, Adva (2011). *Posttraumatic Stress Disorder in Infants and Young Children Exposed to War-Related Trauma*. *Journal of the American Academy of Child & Adolescent Psychiatry*, 50(7), 645-658,
<https://doi.org/10.1016/j.jaac.2011.03.001>.
7. Goenjian, A. K., Walling, D., Steinberg, A. M., Karayan, I., Najarian, L. M., & Pynoos, R. (2005). *A prospective study of posttraumatic stress and depressive reactions among*

- treated and untreated adolescents 5 years after a catastrophic disaster.* The American journal of psychiatry, 162(12), 2302–2308. <https://doi.org/10.1176/appi.ajp.162.12.2302>.
8. Green, Bonnie L., Grace, Mary C., Vary, Marshall G., Kramer, Teresa L., Gleser, Goldine C., Leonard, Anthony C. (1994). *Children of Disaster in the Second Decade: A 17-Year Follow-up of Buffalo Creek Survivors.* Journal of the American Academy of Child & Adolescent Psychiatry, 33 (1), 71-79. <https://doi.org/10.1097/00004583-199401000-00011>.
 9. Harlow, H. F. (1958). *The nature of love.* American Psychologist, 13(12), 673–685. <https://doi.org/10.1037/h0047884>.
 10. 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>.
 11. Kumar, Anant & Nayar, Rajasekharan (2020) *COVID 19 and its mental health consequences.* Journal of Mental Health, 30(1). <https://doi.org/10.1080/09638237.2020.1757052>.
 12. Llabre, Maria Magdalena PhD; Hadi, Fawzyiah PhD, (2009). *War-Related Exposure and Psychological Distress as Predictors of Health and Sleep: A Longitudinal Study of Kuwaiti Children.* Psychosomatic Medicine, 71(7), 776-783. doi: 10.1097/PSY.0b013e3181ae6aee.
 13. Liu, Jia J., Bao, Yanping, Huang, Xiaolin, Shi, Jie, Lu, Lin (2020) *Mental health considerations for children quarantined because of COVID-19.* The Lancet Child & Adolescent Health, 4(5), 347-349. <https://www.sciencedirect.com/science/article/pii/S2352464220300961>.

14. McFarlane, A., & Van Hooff, M. (2009). *Impact of childhood exposure to a natural disaster on adult mental health: 20-year longitudinal follow-up study*. *The British Journal of Psychiatry*, 195(2), 142-148. doi:10.1192/bjp.bp.108.054270.
15. Morgan, L., Scourfield, J., Williams, D., Jasper, A., & Lewis, G. (2003). *The Aberfan disaster: 33-year follow-up of survivors*. *The British Journal of Psychiatry*, 182(6), 532-536. doi:[10.1192/bjp.182.6.532](https://doi.org/10.1192/bjp.182.6.532).
16. Mousa Thabet, A., Karim, K., & Vostanis, P. (2006). *Trauma exposure in pre-school children in a war zone*. *British Journal of Psychiatry*, 188(2), 154-158.
<https://doi.org/10.1192/bjp.188.2.154>.
17. Mladenović, Nataša, et al. (2018). *Family Systems Approach to Attachment Relations, War Trauma, and Mental Health among Palestinian Children and Parents*. *European Journal of Psychotraumatology*.
<https://www.tandfonline.com/doi/citedby/10.1080/20008198.2018.1439649?scroll=top&needAccess=true&role=tab>.
18. Ravens-Sieberer, U., Kaman, A., Erhart, M. et al. (2022) *Impact of the COVID-19 pandemic on quality of life and mental health in children and adolescents in Germany*. *Eur Child Adolesc Psychiatry* 31, 879–889. <https://doi.org/10.1007/s00787-021-01726-5>.
19. Rosen ML, Rodman AM, Kasperek SW, Mayes M, Freeman MM, et al. (2021) *Promoting youth mental health during the COVID-19 pandemic: A longitudinal study*. *PLOS ONE* 16(8): e0255294. <https://doi.org/10.1371/journal.pone.0255294>.
20. Sack, William H. Him, Chanrithy, Dickason, Dan (1999). *Twelve-Year Follow-up Study of Khmer Youths Who Suffered Massive War Trauma as Children*. *Journal of the*

American Academy of Child & Adolescent Psychiatry, Volume 38, Issue 9, 1173-1179.

<https://doi.org/10.1097/00004583-199909000-00023>.

21. Schmidt, Stefanie J., Barblan, Lara P., Lory, Irina, Landolt, Markus A. (2021) *Age-related effects of the COVID-19 pandemic on mental health of children and adolescents*. *European Journal of Psychotraumatology*, 12(1),
<https://doi.org/10.1007/s00787-021-01726-5>.
22. Talevi, Dalila, et al. (2020). *Mental Health Outcomes of the COVID-19 Pandemic*. *Rivista Di Psichiatria*, 55(3), 137-144. doi: 10.1708/3382.33569.
23. Thabet, Abdel A., Vostanis, Panos (2000). *Post traumatic stress disorder reactions in children of war: a longitudinal study*. *Child Abuse & Neglect*, 24(2), 291-298,
[https://doi.org/10.1016/S0145-2134\(99\)00127-1](https://doi.org/10.1016/S0145-2134(99)00127-1).
24. Thakur, K., Kumar, N. & Sharma, N. (2020) *Effect of the Pandemic and Lockdown on Mental Health of Children*. *Indian J Pediatr* 87, 552. <https://doi.org/10.1007/s12098-020-03308-w>.
25. Werner, E. (2012). *Children and war: Risk, resilience, and recovery*. *Development and Psychopathology*, 24(2), 553-558. doi:10.1017/S0954579412000156.