



DISASTER MENTAL HEALTH PROTOCOLS IN RESPECT TO CHILDREN AND ADOLESCENTS

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Abstract: *The focus on providing rapid on-sight psychological assistance in addition to crisis response following a mass shared trauma has been highlighted in previous works. This growing field has become effective and reliant during worldwide incidents and continues to provide further support towards communities. In recent years, the need for disaster mental health has significantly increased as the causes of trauma have only grown in the midst of a pandemic, in addition to ongoing environmental and humanitarian instances. The aim of this review is two-fold: to investigate the shifts in long-term psychological intervention protocol before and after the COVID-19 pandemic; and to discuss the effectiveness of child- and adolescent-focused interventions in cases of multiple ongoing stressors and instances of trauma.*

Key Words: *Disaster Mental Health, Trauma, Psychological Intervention, Children, Adolescents, COVID-19*

INTRODUCTION

The term “disaster” is an all-encompassing symbol defining an event which deals some sort of economic, societal, material, or environmental loss that also inflicts adverse stress towards a community or individual. Disasters are seen to afflict large fractions of the population yearly, leading to expression of detrimental mental health and behavioral symptoms. These disaster events can be classified into three broad categories: Natural disasters, Man-made disasters, and mass trauma.

Natural disasters, which are major geological or meteorological events causing loss of life, poverty, and/or financial disarray. This category contributes to the psychological burden of persistent shock, grief, and anxiety.

Man-made disasters are often instances of mass violence and cause similar effects of loss of life and poverty, however are associated with psychological symptoms of anger, development of post-traumatic stress

disorders (PTSD), guilt, severe mood swings, absentmindedness and paranoia (Grimm et al., 2012); Makwana, 2019).

Lastly, incidents of mass trauma encompass a broad range of events that bring about large-scale community turmoil, an example of which, are pandemics (SAMHSA, 2021).

Response to a disaster and subsequent trauma exposure is interindividual and can vary among social classes, age, gender, and location (Makwana, 2019). However, generalizations of mental and behavioral health responses following a traumatic exposure are mostly understood as the following. The first year ensuing a disaster is commonly associated with peak psychological symptoms derived from the event. The severity ranges at individual risk factors depending on the context of the trauma and stress arising from the incident, characteristics of the surviving individual, the resources available, and the context of

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familial and community aid (Norris et al., 2002).

Although disasters elicit detrimental effects, they may not constitute as a traumatic instance for some individuals even in the case of a personal loss, feelings of anxiety, and presence of instinctual stress. This highlights the importance of screening after the occurrence of such an incident to ensure allocation of resources to those most in need. More-so, the allocation of such psychological aid demands specialization towards different members of the afflicted community.

Children and adolescents exposed to a traumatic event were found to exhibit differing responses compared to adults, unique to each age group. Some of these responses include, behavioral problems, hyperactivity, delinquency, an increase in risk-seeking behaviors and increased vulnerability to PTSD (Norris et al., 2002). Thus, screening directly following a disaster to determine acute and/or potential long-term trauma responses, are essential for identifying children and adolescents at risk for long-term disparities and instituting a focused intervention.

The type of disaster dictates a corresponding response. It is noted that instances of low morbidity and mortality, accompanied by little to no physical and social damage, classifies a disaster as unlikely to elicit acute or lasting mental impairment. It is crucial to add, that in addition to the aforementioned conditions, this disaster must not also contain malicious symbolism or intent (Norris et al., 2002). In such events, large scale interventions are not deemed necessary and support from community, family, and individual levels will suffice. A disaster deemed as large scale and potentially causing significant mental health burden is categorized if at least two of the following conditions apply:

- The large-scale loss and/or destruction of property,
- significant morbidity and mortality, created with malicious intent or causing catastrophic symbolism, and
- continuous financial burden within the afflicted community (Norris et al., 2002).

In these instances, longer term and larger scale professional interventions, like cognitive behavioral therapy, are found to provide the most support.

In the event of a disaster falling under the conditions as to cause a mental health burden, there are five essential disaster mental health responses: This protocol encompasses the focus on:

1. physiological safety,
2. calming the community,
3. promoting self and collective efficacy,
4. ensuring connectedness within the afflicted community, and
5. instilling hope.

Each of these protocols are executed in three phases. These aspects are fulfilled through a preparedness stage, crisis response stage, and recovery stage (Hobfoll et al., 2007; Vernberg et al., 2016). However, it has been highlighted that due to the unique response portrayed by children and adolescents, considerations should be made to involve their age groups in these immediate and mid-term strategies.

Vernberg and colleagues proposed implementation of this health response with children and adolescents using positive psychology, a method concerning positive experiences, positive individual traits, and positive institutions to incorporate into the five existing strategies (Vernberg et al., 2016). The methodology of incorporating an approach targeted to children and adolescents throughout the timeline of a disaster is further outlined in the Appendix. Children and

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adolescents are active agents in the midst of a disaster, and specific targeted therapeutics may prove efficacious in the long run as child and adolescent experience in a disaster-related scenario can be reformulated to promote posttraumatic growth. The efficacy of the approach depends on the application and integration of the positive psychology protocol into the disaster mental health procedure. The aim is to apply this protocol to coincide with child and adolescent developmental stages. It is adamant to utilize age appropriate language and concepts, address age specific concerns, and most importantly incorporate the elements of this protocol in a naturally occurring and familiar setting within the community structure (Vernberg et al., 2016). The consideration of this formulated intervention proposes effective long-term healing in the case of exposure to a traumatic experience within these developmentally sensitive ages.

WORKING WITH CHILDREN AND ADOLESCENTS

Although the combination of positive psychology and disaster mental health protocol can provide lasting therapy and psychological aid to children and adolescents, there are instances where a longer term or more specialized intervention is necessary. When considering environments or community structures that do not have disaster mental health protocols already instituted, post-disaster interventions are a means to alleviate immediate or gradual psychological turmoil.

Cognitive Behavioral Therapy

In addition to disaster specific interventions outlined in disaster mental health protocols, Cognitive Behavioral Therapy (CBT) aims to further alleviate the instance and severity of mental health symptoms in a psychosocial manner. Since at

least 50% of children have experienced one or more traumatic events, the use of CBT has been suggested as highly effective at disseminating adverse mental health symptoms in children and adolescents (Martin et al., 2019). The work in establishing an efficient therapy in children and adolescents suffering from such symptoms relies on the context of their social support system.

Children who have a lower incidence of adverse psychological reactions after a disaster or traumatic experience are those who have a stable support system, and the topic of their experience was discussed with a caregiver in a familiar setting. Coping systems and resiliency are found to be dependent on the context of family, school, and social settings, highlighting the importance of communication during a traumatic experience and the juncture following (Wisner et al., 2018).

Pfefferbaum and colleagues (2014) examined child- and adolescent-targeted interventions in the scope of CBT through a wide range of disasters and exposures to traumatic experiences. Although there were inconsistencies mentioned within the terminology of approaches, the findings suggested multiple individual forms of interventions were associated with improved outcomes. The most common components of CBT interventions being affect modulation, relaxation, and psychoeducation (Pfefferbaum et al., 2014).

The nine components within CBT go by the acronym “PRACTICE” that can be split up into three phases.

Psychoeducation/parenting skills, Relaxation, Affective skills, and Cognitive learning fall into the first phase marked by the development of stabilization skills.

The second phase is a singular component focused on Trauma narration.

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The third phase involves *In-vivo* mastery, Conjoined child and parent therapeutics, and Enhancing safety to create a consolidation stage (Cohen et al., 2018).

The use of CBT in disaster mental health encompasses the last step in public health and disaster/trauma frameworks. These frameworks may differ across nations in terminology however, they contain broad similarity within their timelines of administration.

The first portion being preparedness, primarily involving planning, allocation of resources, emergency response teams, and clear communication. The second portion transpiring directly after the disaster has occurred, focusing on responding and reacting to the aftermath. This is where psychological screening and active services within the community are utilized in tandem with the focus on providing material needs.

Finally, after the immediate aftermath has disseminated, the recovery process begins, and multiple focused interventions over a variable course of time are administered, like psychological first aid, prevention of psychopathology, and treatment of psychopathology with early or long-term designed interventions (Danese et al., 2020).

EMDR

Eye-movement desensitization and reprocessing (EMDR) provides an early response trauma-focused therapy towards posttraumatic responses immediately after a traumatic incident. EMDR therapy was originally utilized to treat veterans suffering from PTSD but has recently been seen to provide benefits in children and adolescents suffering from mental health symptoms following a traumatic or adverse incident.

This therapeutic has been incorporated within the scope of disaster mental health as results support effective reduction of

psychosocial burden following both single and multiple traumatic experiences (Bayhan et al., 2022; Karadag et al., 2020; Trentini et al., 2018).

In response to therapeutic success, multiple EMDR group therapy protocols have been created with the focus of treating children and adolescents and have been observed to follow the same success as CBT in reducing adverse mental health symptoms (Bayhan et al., 2022). The importance of screening directly following a traumatic experience is highlighted when discussing the use of this psychosocial therapy. EMDR is considered an 'Early Intervention', meaning the use of this therapy within the following 2-3 months of a life-changing trauma are seen to be most effective in reducing symptoms and preventing long-term disorders (Shapiro & Maxfield, 2019).

Even so, this categorization fluctuates depending on the type of disaster or stressor and its aftermath. The formulation of a child/adolescent-based disaster mental health protocol is multifaceted and should be designed in respect to intrinsic and extrinsic factors specific to the affected community. Whether the protocol includes CBT, EMDR or any other broad or specialized trauma focused therapy, can be decided based on the cognitive and psychological needs of the individuals affected by the traumatic incident.

CHILDREN AND ADOLESCENTS IN CONSIDERATION WITH MULTIPLE TRAUMATIC EXPOSURES

Associations and organizations focused on child and adolescent mental health therapy are numerous and range from the local level, Child and Adolescent Mental Health Services (CAMHS); to national, the American Academy of Pediatrics (AAP); to worldwide, Children's Hospital Association (CHA). These structures allow access to mental

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health and psychiatric resources toward a specific niche within a community. However, an issue has arisen within the scope of examining efficacy of specific interventions within a protocol and further specializing a component of disaster mental health. There is no 'singular' approach that has proved efficacious towards a certain trauma response or disaster. Providing mental health assistance towards a community must be particularized for that group of individuals (Purgato et al., 2021). With these limitations in mind, the AAP, CHA and American Academy of Child and Adolescent Psychiatry (AACAP), have issued a state of emergency as of October 2021. With the addition of a COVID-19 pandemic, the adverse situations existing previously have only been exacerbated contributing to the rising child and adolescent mental health crisis (AAP, 2021). This brings about a topic of how disaster mental health protocol has been utilized in the midst of a pandemic, alongside precluding incidents of trauma, and what effects are being observed in cases of communities suffering from multiple disasters.

The Burdens Introduced by the COVID-19 Pandemic

Dealing with the effects of a pandemic effectively increasing rates of morbidity and mortality, children and adolescents were observed to suffer from growing vulnerability towards mental health symptoms in regard to rapidly shifting lifestyle and behavioral factors. Disaster mental health interventions were promptly implemented, the two most common being CBT and Philosophy for Children (P4C). The most striking portion of mental health services during this period of time was the transition to offering solely virtual assistance. Specifically in children, initial findings suggested quarantine negatively affected

mental health including an increased burden of anxiety and depressive symptoms (Han et al., 2020). The sudden shift towards isolation was also seen to negatively impact both caregivers and children, with their mental health symptoms being positively correlated to each other. The largest limitation with virtual assistance is the understudied nature and impact on both child/adolescent and caregiver loneliness, contributing to symptoms of anxiety and depression. Financial burden and uncertainty in caregivers was also seen to impact mental health symptoms and be transferred to feelings of uncertainty with the respective child/adolescent (Fitzpatrick et al., 2021).

As the pandemic progressed, interventions were being improved upon and targeted toward virtual settings. The development of 'eHealth' digital therapeutics displayed cost effective and positive results within the field of disaster mental health. The majority of these digital resources focus on the prevention of mental health symptoms, however, have shown efficacy in the management and reduction of morbidity during the COVID-19 pandemic (Rauschenberg et al., 2021).

Long-term results utilizing these resources have limited data and require further examination. Therapeutic interventions with trained mental health specialists, like the administration of CBT, was noted to be the most effective and widely recognized intervention globally. This intervention was easily transferred to a virtual setting with individual, familial, and group formats. However, in the context of child and adolescent interventions, Solution Focused Brief Therapy (SFBT), in addition to physical activity-based therapies, were seen to promote the greatest factor of mental health wellbeing. The ease of accessibility towards these therapies was also seen to

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benefit the delivery of such intervention (Boldt et al., 2021).

As the circumstances of the pandemic once again shifted to the return to a classroom setting, investigation toward revised interventions accommodating virtual teaching and academic settings was required. The altered learning environment surrounding children and adolescents brought about inattentiveness and hyperactivity alongside the inability to focus. The P4C intervention was found to be the most effective within these circumstances throughout the duration of the virtual phase of the pandemic and was implemented by teachers to facilitate the new mode of classroom settings (Malboeuf-Hurtubise et al., 2021). However, different communities of children and adolescents experience unique burdens associated with the pandemic and subsequent environmental factors. The importance of delivery strategies being particularized towards a community, group, or individual remains tantamount even within the scope of a pandemic (Gomez et al., 2021).

Implications of Multiple Traumatic Stressors within a Community

The presented limitations within the scope of trained mental health professionals implementing therapeutic interventions in the COVID-19 pandemic are also transferred towards instances where a community suffers from the burden of a pandemic along with the burden of an additional disaster/traumatic experience. For instance, mass shooting and gun violence trends in the United States have steadily increased since the year 2000. Instances of these man-made disasters have grown to affect approximately 60% of high school students (Cimolai et al., 2021). Cases of gun violence within educational institutions has steadily increased since the shift from online learning back to in person learning. Since the 2021 school year began

allowing students to return to campus, gun violence trends have met their highest recorded levels when compared to the previous five years. It is estimated that 2022 will follow this unfortunate trend (Katsiyannis et al., 2022).

Direct and indirect exposures towards mass shooting events leading to development of mental health symptoms or a PTSD diagnosis, are observed to affect younger children more than adolescents. However, a strongly weighted contributing factor to the development of PTSD in children and adolescents is anxiety sensitivity, which is “the individuals fear of social, physical or cognitive consequences related to anxious arousal” (Cimolai et al., 2021). Children and adolescents that have high instances of anxiety sensitivity before the shooting trauma, are associated with higher PTSD scores after the shooting, meaning trauma exposed children are at a higher risk of suffering from adverse mental health outcomes following a shooting event (Cimolai et al., 2021). What does this mean for children and adolescents suffering from COVID-19 related mental health symptoms who are subsequently exposed to an additional traumatic experience? The interconnectivity of both of these events has been largely understudied and the implementation of mental health resources within schools and community structures has been placed in the hands of school guidance counselors. Social media record culminations display a social recognition of trauma exposure within the community during COVID-19 and in response to a school shooting event, however have not been met with respective disaster mental health protocols (Rusho et al., 2021).

In cases of longer term man-made or natural disasters, where instances of migration are necessary, impacts on mental health are challenging to fully capture.

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Circumstances where administration of disaster mental health protocols are implemented are uprooted, and access to these resources is difficult to obtain. Children and adolescents are largely affected in cases of forced migration due to disconnects from their caregiver. The support system of their community of origin is unattainable leading to a higher magnitude in expression of mental health challenges. The displacement brought about from their caregivers is in itself due to the immigration process, by limiting the accessibility of child-care resources on top of stressors of the migration and processing of the original trauma. In such cases, psychological and psychosocial interventions in group settings have displayed the most efficacy in migrant and refugee children (Rafieifar & Macgowan, 2021).

Fleeing from a community by migration or refugee status contains its own set of mental health burdens aside from those subjected by a pandemic. In the United States, the pandemic highly affected social determinants of health in immigrant and refugee communities. Disaster mental health interventions were halted and protocols in place for children and adolescents in these communities were prevented to limit transmission of the COVID-19 virus. Concerns regarding access and cost of mental health services in addition to fear of potential implications in migrant status by participating in these services, trumped the efforts to utilize these interventions (Hill et al., 2021).

DISCUSSION

In contexts of multiple disasters and traumatic experiences affecting individuals within a community, a particularized intervention depending on the context of the affliction may provide further benefit, specifically targeting more susceptible members of the community. Phases of

disaster mental health strategies potentially overlook children and adolescents during times of preparedness, crisis response, and resilience. Incorporating components of this protocol in a child-/adolescent-targeted approach provides significant benefit to the community as a whole. Ensuring effective outcomes relies on implementation of screening, and acute and long-term psychological therapy in targeted instances.

As global outcomes continue to shift, research in interventions for specific communities aims to elucidate effective measures in reducing the burden of mental health symptoms. The goal of these interventions is to alleviate additional psychological and psychosocial stressors after an incident occurs, which relies on targeting towards the disaster survivors. Children and adolescents in the foster care system are also at risk for psychological and mental health burdens and suffer from their own instances of stress and trauma that may contribute to post disaster trauma symptoms (Clausen et al., 1998). Their unique circumstances, although they have not been discussed in this review, are relevant under the scope of disaster mental health, and future investigations should aim to review effects of disasters within this community (Stone et al., 2021).

In the present age, populations within a community are incredibly diverse, meaning cross-cultural competencies must be addressed by adapting the services provided to respectfully address any concerns, symptoms, or threats to well-being within the community (Mostofi & Brown, 2021). As the field of disaster mental health continues to grow, more knowledge regarding efficacy of protocols and interventions can lead to an all-inclusive yet specialized approach in reducing burden of mental health outcomes.

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Appendix

Disaster Mental Health Protocol

Elements	Preparedness Phase	Crisis Response Phase	Recovery Phase
Psychological Sense of Safety	Development of crisis response plan with defined roles fitting for each member of the community and respective to their stage of development	Accurate information that pertains to the direct safety of individuals presented in a clear and simple language. Addressing the media and ensuring physical safety and comfort	Rebuilding and recovering the community, returning to developmentally fitting roles and activities as well as 'normal' schedules. Addressing of thoughts and feelings to promote safety and comfort
Promote Calming	Relaxation strategies to ensure preparedness	Screening and identifying various exhibitions of stress response to a trauma, ensuring specific considerations to individuals with disparities	Informing individuals of common reactions to stressful event and instances of trauma recall that may result in negative psychological impact
Self- Efficacy and Collective Efficacy	Communication of clear disaster preparedness plans accompanied by frequent repetition and practice of the plan with knowledge of individual roles	Managing emotions and problem-solving skills in an 'uncontrolled' instance and environment	Ensuring community support, autonomy for each individual and institutions reliving the burden of limited resources
Promote Connectedness	Institutions like schools or community centers becoming a key setting for crisis response and disaster management allowing a physical location to be viewed as a beneficial community asset during a stressor or trauma	Disaster mental health providers and responders ensuring the collective gathering of individuals with respect to similarity. Normalizing the act of seeking help and receiving support. Allowing physical and social activity to ensure collectiveness	Community members providing and receiving support during the aftermath
Instill Hope	Emphasis on the positive outcomes of the disaster plan rather than allowing focus on the disaster itself	Engaging with afflicted members of the community to provide sense of security while acknowledging the emotion and trauma and instituting alternative methods for interpreting the disaster while validating these outputs	Promoting resuming daily activities and social connectiveness, most commonly by increasing sense of self-agency in an individual

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This Table is compiled from the information discussed in Vernberg et al., 2016. Vernberg and colleagues propose a formulated disaster mental health protocol encompassing the mental health attributes often exhibited by children and adolescents during the three stages of disaster preparedness. This table summarizes the author's interpretation of the major aspects of the psychological elements used to promote resilience within the three stages of the disaster mental health protocol actively including children and adolescents. The breakdown of this information is essential for the readers' understanding of the importance in considering and otherwise overlooked portion of the community during the stages of a disaster. The proposed elements are an unparalleled overview of methods in reducing mental health systems and encouraging lasting therapy within the entirety of a community.