The Psychological Effects of Disasters on Children and Adolescents

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Abstract. The impact of disasters is often enormous. Especially for children and adolescents extensive psycho-social problems related to various disasters, although psychological pain will disappear after disaster exposure, but after the disaster experience, significant adaptation difficulties will persist, these factors require children and adolescents to pay attention to understand the importance of the link between disasters and increasingly common psychological distress. Psychological and behavioral sequel in children and adolescents after disasters are widespread and prolonged. This paper combs relevant studies to understand the psychological impact of disasters on children and find better solutions and measures. This paper summarizes the psychological stress disorder and psychological-behavioral responses caused by disaster events to children and proposes psychological and behavioral interventions for affected children and adolescents.

Keywords: Disaster · Post-traumatic stress disorder · Psychological resilience · Mental health

1 Introduction

1.1 The Meaning and Concept of Disaster

Human so-called "Disasters" usually refer to the more serious destructive events or have a greater impact on human life. The development process of human history has been accompanied by various disasters, such as earthquake, flood, fire, epidemic disease, terrorist activities, war and so on. Disaster is a kind of social stressor, which has the characteristics of unpredictability, sudden nature, fast speed and high stress intensity. Disaster refers to the "suffering caused by natural and man-made disasters", which is accompanied by human beings, truly, comprehensively and justly reflects the human world and consider human nature.

1.2 Impact of Disasters

Natural disasters make people feel the division of human self and the universe and the smallness of human power, while social disasters make human beings feel more

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panic. Especially for children and adolescents, disasters may destroy the social values of children and adolescents, making them doubt their own lives around, and deny the educational concepts they have received. China is one of the countries most severely affected in the world by its frequent natural disasters. According to the data in Table 1 and Fig. 1 [1], it will find that the economic losses and casualties caused by natural disasters are huge every year. In 2022, a total of 112 million people were affected, including 554 people killed or missing, 2.428 million were relocated, 47,000 houses collapsed, and 796,000 were damaged to varying degrees, resulting in direct economic losses of 238.65 billion yuan. Natural disasters will not only bring property losses and casualties to the affected areas, but also, as a psychological stressor. It will also cause psychological trauma to the affected people. Children and adolescents, as vulnerable groups, are affected by disasters, and their families and communities have no time to rebuild their homes for a long time, so they may experience a strong sense of insecurity and abandonment, greatly reducing their social functions and adaptability, and decreasing their mental health level.

Table 1. 2015–2022 Basic statistics of China's natural disasters.

Year	Number of deaths (including missing persons)	Direct economic loss (one hundred million RMB)
2015	967	2704.1
2016	1706	5032.9
2017	979	3018.7
2018	635	2644.6
2019	909	3270.9
2020	591	3701.5
2021	867	3340.2
2022	554	2386.5
Total	7208	26099.4

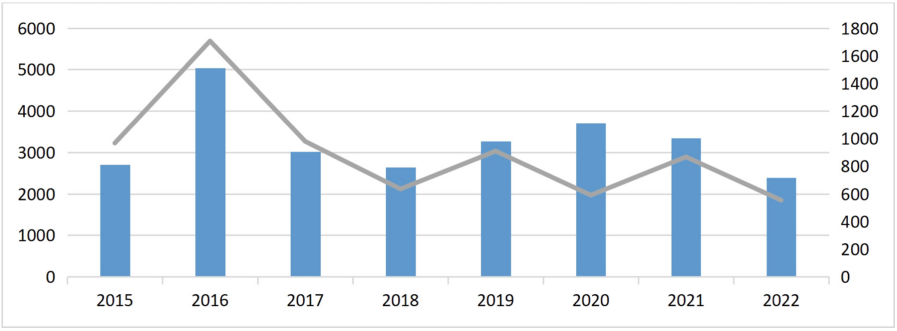

Fig. 1. -2022 Basic statistics of China's natural disasters

Several factors call attention to the importance of the association between disaster exposure and the increasing prevalence of psychological distress [2]. First, disasters are common events that affect large number of people. Estimates suggest that as many as two million residents in the United States are injured or suffer property damage each year. Second, a wide range of psycho-social problems are associated with a variety of disasters, including: post-traumatic stress disorder (PTSD), anxiety disorders, depression, psychosomatic disorders, substance abuse, transient reactive psychosis, domestic violence, and divorce [3]. Finally, although psychological distress disappears after disaster exposure [4], But major adaptation difficulties will persist after disasters.

Children and adolescents who suffer from trauma not only experience post-traumatic stress but also the severe adverse psychological effects of other psychological disorders [5]. The literature on the impact of disasters on the mental health of children and adolescents is mixed. Child and adolescent victims are confused and anxious after the disaster. Children and adolescents are particularly vulnerable to disaster trauma, manifested in a variety of complex psychological and behavioral manifestations. However, psychological responses among children and adolescents are often ambiguous. Studies shows that parents, teachers and even mental health experts severely underestimate the intensity and duration of stress responses in children and adolescents [6]. This depends on the developmental stage of children and adolescents, cognitive and emotional maturity, and limited coping strategies, where psychological responses differ from adults. Indeed, we cannot generalize our adult findings to children and adolescents, and the disasters they experience are understandable and different from those of adults.

2 Post-Traumatic Stress Disorder (PTSD)

In the 5 to 8 years after the disaster, survivors were found with more specific phobias than in similar population samples. In patients with anxiety disorders and depression, survivors had higher rates in specific phobia, separation anxiety, and panic disorder, as compared to controls. The increase was more pronounced in survivors of PTSD. Therefore, the assessment and treatment of disaster survivors should consider not only PTSD but also other types of mental health problems with a view to not only alleviate the current distress but also prevent the development of complications, especially depression [5].

In addition to the symptoms of post-traumatic stress, increased symptoms of anxiety and depression have been found in earthquakes [7], train-bus collision studies [8] and war-related trauma [9]. Long-term follow-up studies of diagnostic interviews with Cambodian adolescents and young adults who suffered severe trauma in childhood found a high incidence of lifetime depression, in addition to the PTSD study, about 30% of patients experienced a low incidence of anxiety disorders in adulthood, and a high prevalence using standardized diagnostic interviews [10, 11].

Criteria for PTSD disorders such as the Diagnostic and Statistical Manual: Mental Disorders (DSM-IV) also recognize that regression behavior is a characteristic response to trauma in children, which increases the risk of separation anxiety in adolescents. Panic disorder can reasonably be looked upon as a complication of the enhanced physiological arousal signature of post-traumatic stress, and another possible reason is the catastrophic assessment of the physiological arousal hypothesis in current cognitive models [12].

3 Disaster Survivors

3.1 Factors Affecting the Psychology of Disaster Survivors

The sudden and shocking nature of catastrophic events can cause obvious psychological pain of the parties concerned. No matter how good the psychological quality is, they will be sad, fear and despair. When a huge natural disaster occurs, even if people do not personally experience the disaster scene, but if there are relatives or friends encounter harm, it will also produce anxiety, fear, panic and other post-traumatic stress reactions. In addition, ordinary people outside the disaster areas will also have anxiety and panic because of the concern and uncertainty of the disaster.

According to the research, the reasons that affect the psychology of disaster survivors include: (1) the nature of disasters, the degree of damage and exposure of different types of disasters will have different disaster consequences due to the differences of their damage degree and the sudden nature.(2) Age: Different in age, the level of cognitive emotional development and the ability to cope with stress are different, and the response to disasters is also different.(3) Gender: Regarding the gender difference of the psychological impact of disasters, most domestic research data show that women are higher than men. (4) With the extension of time and the duration of disaster, the impact of disaster on mental health gradually weakens.(5) Social support: Good social support can reduce the psychological trauma caused by traumatic events, and enhance the coping and recovery ability of children and adolescents.(6) Negative life events before and after disasters: The tracking study of Fan Fang and others on teenagers after the Wenchuan earthquake showed that there was a dynamic interaction relationship between negative life events and individual psycho-pathological behavior.(7) Psychological recovery characteristics Not all children and adolescents experience psychological problems after experiencing disasters. Instead, some children will grow stronger after experiencing setbacks. This quality that enables people to successfully cope with setbacks, namely psychological resilience [13], refers to the dynamic process in which individuals adapt well to a dangerous environment. (8) Family factors: Family is the main place for children and adolescents to live, learn and obtain psychological support, Therefore, family factors have an important impact on the mental health of children and adolescents after disasters.

3.2 The Assessment and Treatment of Disaster Survivors

The psychological and behavioral sequelae after disasters are widespread and last for a long time. In particular, children and adolescents who suffer trauma suffer not only post-traumatic stress but also the serious adverse psychological effects of other psychological disorders. More awareness of this is needed when developing intervention strategies. The approach to support is preferably community-based, multi-level, long-term, including relevant agencies such as health, education, local and national governments. An integrated approach using psycho-social educational and clinical interventions is expected to provide better outcomes than any individual approach. Clearly, further research into the effectiveness of psychological and pharmacological interventions in this population is necessary [14].

4 Post-Disaster Solutions

4.1 Post-Disaster Consultation

Post-disaster counseling should be provided long term, with focus shifting to meet the changing needs of high-risk groups [15]. Supportive interventions include fostering a sense of security and efficacy, connecting patients with the community and services, and helping parents and children talk about trauma [16]. A community approach consisting of trained primary healthcare workers can provide effective psychosocial support and rehabilitation services [17].

4.2 Post-Disaster Treatment

Existing data suggest that there are a range of psycho-social problems affecting children after disasters. More awareness of this is needed when developing intervention strategies. The proportion of children with post-traumatic symptoms varied across studies, depending on different factors such as the nature and severity of disasters, diagnostic criteria used, cultural issues related to the meaning of trauma, available support, common psychiatric symptoms in children including acute stress response, regulatory disorders, depression, panic disorder, post-traumatic stress disorder, childhood anxiety disorder and psychiatric disorders. Comorbidities and sub-clinical syndrome are also common. Most of the post-disaster mental health interventions can be provided by local disaster workers in the community. Supportive counseling, cognitive behavioral therapy is considered by many as the primary treatment for PTSD in children and adolescents [18]. Trauma/grief-centered short-term psychotherapy and game therapy are commonly used psychological interventions and can be conducted in groups. Information about drug efficacy is still emerging, and many drugs are being used and found to be useful [14].

4.3 Post-Disaster Treatment for Children and Adolescents

Cognitive behavior therapy (CBT) is recognized by many as the primary treatment of post-traumatic stress disorder (PTSD) in children and adolescents. The efficacy of CBT in relieving the symptoms of post-traumatic stress after catastrophic disasters has been demonstrated [19]. The short-term group CBT was also found to have long-term benefits. Significant improvements in children were reported during the 18-month follow-up, while treatment outcomes remained unchanged during the 4-year follow-up for older children with severe post-traumatic symptoms or severe post-traumatic stress disorder, trauma-focused CBT traumatic events should be performed within 1 month after surgery. Where appropriate, families should participate in the treatment of PTSD in children and adolescents [20]. Treatment studies of childhood non-disaster PTSD have shown that cognitive behavioral interventions involving direct discussion of trauma, desensitization, and relaxation techniques are useful for problematic behavior, cognitive reconstruction, and empowerment reinforcement programs.

Components of trauma-centered interventions often include stress management techniques (relaxation, thought cessation, positive thinking, imagination, deep breathing, etc.), assessment and reconsideration of children's cognitive assumptions about trauma,

and inclusion of parents and other supportive individuals into treatment. Few have examined the treatment of PTSD in children facing disasters in a controlled way. The efficacy of school-based short-term groups and trauma/grief-centered individual therapies in adolescents suffering from disasters, according to research findings [21]. Untreated adolescents gradually deteriorated. Brief trauma/grief-centered psychotherapy is not only effective in reducing the symptoms of PTSD, but also in preventing the development of depression "Emotional First Aid" technology has been used to address PTSD in disaster situations [22]. Treatment tools include clarifying traumatic facts, normalising childhood PTSD responses, encouraging expression of emotions and teaching problem-solving skills.

Games can serve as a medium for assessment and treatment in children. Play interviews are essential when examining children under 7 years, but should be applicable to all prepubertal children [23]. Through play, children can verbally and non-verbally express difficult painful emotions, their wishes and fears, worries, fantasies, reappearance, and traumatic experiences. Many unspeakable phenomena are observed in the game. The way that children play is as important as the way they play. In the drama, we should actively try to introduce the accompanying thinking process. The process can include drawing characters, drawing characters, making up stories, drawing families, "if you can change something, what it is," checking three wishes, and so on how children can participate in the process, explaining difficulties, bereavement and suggestions through the content of the game. Interactions with an empathic, objective, neither judgmental nor overindulgent therapist enables the child to reintegrate, reorganize and continue to recover. The child may internalize and identify with these qualities of the therapist [24].

It is very important to involve the parents in the assessment and the intervention. Psychological education for the family members and children involved in the disaster is especially helpful for the treatment of mental health sequel after the disaster. Parents also need help to understand and accept that confusing and disturbing expressions and behaviors in post-disaster situations are "normal" to "abnormal" situations [25]. They should be more accessible, direct and honest answers to the child's questions without providing more information than the child needs. They should turn off the TV and not let the children repeat images of traumatic events. Families should be encouraged to return to normal daily life and practices as soon as possible.

5 Conclusions

Disasters occur frequently in today. Disaster is an accidental, suddent and devastating external force. This paper cites several scholars' understanding of disasters, through the extensive analysis of the impact of disasters and the psychological factors affecting the survivors and survivors, focuses on the psychological impact on children and adolescents, and evaluates and treats the survivors, and proposes some solution measures and methods and strategies related to the disaster. Some aspects about PTSD are also introduced. It is of great significance to deeply understand the psychological impact of disasters to continuously improve the psychological cure system of disasters. COVID-19 raid strikes, people feel panic, anxiety, fear, helplessness, these are all normal reactions. In these populations, the psychology of children deserves particular concern. In experiencing

crises, children are often more likely to feel fear and confusion. At this time, parents should first manage their emotions, let children to understand the infectious disease in scientific ways, excessive emphasis on the negative impact of the disease and the harm to health, without providing positive information, will only bring psychological pressure and unnecessary worry and fear. Pay attention to the children's feelings, appropriate comfort, if necessary, should seek help from professionals.

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