

Coping Mechanisms For Children With ADHD And Anxiety During Pandemics: Evidence-Based Approaches.

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Abstract

Attention deficit hyperactivity disorder (ADHD) and anxiety are among the most common mental health issues affecting children, particularly during global crises such as the COVID-19 pandemic. The disruption to daily routines, social isolation, and stress related to the pandemic have worsened symptoms for many children and created barriers to accessing in-person therapeutic services. The purpose of this study is to explore evidence-based coping mechanisms for managing ADHD and anxiety in children, with a particular focus on therapeutic interventions applied during pandemics. This review studied core techniques such as Cognitive Behavioral Therapy (CBT), mindfulness practices, and behavioral interventions, all of which have been shown to manage symptoms and ensure emotional resilience. Therapeutic interventions, such as CBT and mindfulness, are essential in maintaining emotional balance during crises by targeting thought patterns and stress responses. Behavioral interventions designed to meet the unique needs of children with ADHD and anxiety offer structured support through behavior modification strategies. This study describes the importance of accessible mental health support through teletherapy and other remote platforms during lockdowns, ensuring continuity of care.

Keywords: ADHD, Anxiety Management, Cognitive Behavioral Therapy (CBT), Mindfulness Interventions, Behavioral Interventions, Covid-19, Child Mental Health, Evidence-Based, Therapeutic Approaches, Coping Mechanisms, Teletherapy, Pandemic, Mental Health.

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I. Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) and anxiety are two of the most prevalent mental health conditions affecting children worldwide. ADHD is a neurodevelopmental disorder characterized by symptoms of inattention, hyperactivity, and impulsivity, which can impair functioning in school, home, and social environments. Anxiety disorders, on the other hand, involve excessive worry, fear, or nervousness, which can interfere with a child's ability to cope with daily stressors. According to the Centers for Disease Control and Prevention (CDC), approximately 11.4% of children in the United States within the age range 3 - 17 are diagnosed with ADHD, 15% of these are boys while girls are 8% (CDC, 2022). Similarly, 7.1% of children between the ages of 3 and 17 experience anxiety disorders (ADAA, 2022). These conditions frequently co-occur, compounding challenges in emotional regulation, attention, and social interactions.

The global outbreak of pandemics, such as COVID-19, significantly increases mental health issues, especially for vulnerable populations like children with ADHD and anxiety. The sudden shift to remote learning, social isolation, and routine disruptions have intensified feelings of uncertainty and stress in many children. For those with ADHD, the lack of structured environments and increased exposure to home-based distractions make it difficult to maintain focus and engage in productive activities (Lee, 2020). Similarly, children with anxiety often experience heightened levels of worry and fear surrounding the health, safety, and well-being of loved ones. The compounded stress of these disorders during times of crisis marks the need for effective coping strategies to manage the negative effects on mental health (Pfefferbaum & North, 2020; CDC, 2023).

This study seeks to examine the effectiveness of evidence-based coping mechanisms specifically designed for children with ADHD and anxiety during pandemic conditions. By exploring interventions rooted in psychological research, this article aims to provide practical, actionable strategies to help children manage their symptoms in times of heightened uncertainty and stress. The study will also detail the importance of parental involvement, therapeutic support, and practical interventions that can be implemented at home and in clinical settings.

The mental health of children during crises like pandemics is of critical importance, as early interventions can prevent the long-term effects of symptoms and improve overall well-being. Understanding how ADHD and anxiety manifest in children during periods of disruption allows psychologists and caregivers to develop more effective support systems. The significance of this study lies in its contribution to the development of targeted,

evidence-based coping mechanisms that not only address immediate mental health concerns but also ensure resilience in children.

II. Literature Review

ADHD and anxiety are distinct but often co-occurring disorders in both children and adults. Clinically, ADHD is defined by persistent patterns of inattention, hyperactivity, and impulsivity, which negatively affect academic, social, and familial functioning. According to the DSM-5, children must exhibit symptoms for at least six months and show impairment in at least two settings, such as home and school, to receive an ADHD diagnosis (American Psychiatric Association, 2013; ADDA, 2016). Anxiety, in contrast, is characterized by excessive worry or fear that can manifest in physical symptoms such as restlessness, fatigue, and difficulty concentrating. Anxiety disorders in children are often diagnosed when their fears are disproportionate to the situation and interfere with daily activities (Cleveland Clinic, 2023). This means that anxiety disorders in children are diagnosed when their fears or worries are much stronger or more intense than what would be considered normal for a given situation. For example, it is natural for children to feel nervous before a big test or when meeting new people, but when these fears become excessive—causing extreme distress or avoidance behaviors—they may indicate an anxiety disorder.

Additionally, these overwhelming fears must affect the child's ability to function in everyday life. This could involve difficulty attending school, making friends, participating in activities, or completing routine tasks due to their anxiety. In other words, their fears not only feel excessive but also interfere with normal, daily functioning. When these patterns are persistent, clinicians may diagnose the child with an anxiety disorder.

Studies have found that over 31% of children diagnosed with ADHD also experience anxiety, complicating their treatment and symptom management. It has been highlighted that children with ADHD and anxiety are particularly vulnerable to external stressors, such as changes in routine or heightened uncertainty (Tsang et al., 2015). During the COVID-19 pandemic, research observed a marked increase in symptoms of both disorders. For instance, a study by Zhang et al. (2020) found that the pandemic influenced anxiety and inattention in children with pre-existing ADHD, primarily due to disruptions in their daily routines and increased isolation from peers.

Pandemics, particularly COVID-19, have caused widespread disruptions to daily life, which have disproportionately affected children's mental health. For children with pre-existing conditions like ADHD and anxiety, the closure of schools, physical distancing measures, and lockdowns have increased these symptoms (Lee, 2020). Research indicates that children with ADHD experience difficulties adapting to remote learning environments, where there's a lack of structured schedules and heightened inattention and impulsivity (Becker et al., 2020). Lockdowns and isolation have led to a breakdown of the coping mechanisms that children typically rely on, such as social interactions with peers and access to recreational activities. The absence of routine and stability, key to managing both ADHD and anxiety, has led to an increase in behavioral and emotional dysregulation among children. Furthermore, disrupted access to mental health services during pandemics posed additional challenges, as children are unable to receive consistent therapeutic support.

III. Gaps In The Literature

While there is substantial research on ADHD and anxiety in children, there are notable gaps in the literature concerning the specific impact of pandemics on children with these disorders. Existing studies largely focus on general mental health outcomes during crises, but there is limited research on specific research on interventions for children with ADHD and anxiety during pandemics. Furthermore, while CBT, mindfulness, and behavioral interventions have been well-studied in general contexts, their long-term efficacy in managing these conditions during periods of extended disruption remains underexplored. There is also limited research on how to modify these interventions for remote or hybrid formats, which became necessary during the COVID-19 pandemic.

IV. Methodology

This study employed a qualitative research approach to provide a comprehensive analysis of coping mechanisms for children with ADHD and anxiety, particularly concerning the COVID-19 pandemic. Data was gathered from multiple sources, including peer-reviewed journal articles, and longitudinal studies that examined the impact of behavioral interventions, Cognitive Behavioral Therapy (CBT), and mindfulness techniques on children diagnosed with ADHD and anxiety. Studies spanning pre- and post-pandemic periods were selected to analyze the variations in treatment outcomes. Sources were collected from online databases like PubMed, ScienceDirect, and ResearchGate. Specific criteria for inclusion were evidence of interventions during periods of crisis or stress, including pandemics, and a focus on childhood ADHD and anxiety.

The analysis centered on identifying the effectiveness of various therapeutic interventions during times of crisis, particularly the COVID-19 pandemic. Cognitive Behavioral Therapy (CBT) emerged as a primary

intervention for managing both ADHD and anxiety symptoms, showing high efficacy in modifying maladaptive thoughts and behaviors. Studies reviewed consistently highlighted its success in reducing anxiety and improving focus in children. Mindfulness-based interventions were analyzed for their ability to enhance emotional regulation and reduce stress. These interventions, often integrated into broader therapeutic plans, proved effective in helping children manage the disruptions caused by the pandemic. Behavioral interventions were also scrutinized for their role in coping mechanisms. These interventions focused on structured routines, positive reinforcement, and behavior modification, all of which helped mitigate ADHD symptoms increased by pandemic-related changes.

The analysis revealed that evidence-based therapeutic approaches, such as CBT, mindfulness, and behavioral interventions, provided children with positive coping mechanisms during the COVID-19 pandemic. However, socioeconomic barriers and limited access to digital health services hindered their accessibility.

V. Coping Mechanisms For Children With Adhd And Anxiety

Cognitive Behavioral Therapy (CBT)

Cognitive Behavioral Therapy (CBT) is a widely used evidence-based approach that has proven highly effective for managing both ADHD and anxiety in children. Its relevance lies in its structured, goal-oriented techniques aimed at helping children identify and challenge negative thoughts while developing healthier behavioral responses. Children with ADHD often struggle with impulsivity and emotional dysregulation, while those with anxiety may experience distorted thinking patterns, such as catastrophizing or persistent worry. CBT addresses both of these issues by teaching children to reshape their thought processes and manage emotions more effectively (AAP, 2021).

Cognitive restructuring and relaxation techniques are among the techniques used in CBT to help children recognize unhelpful or irrational thoughts and replace them with more balanced and real perspectives, like learning to challenge their automatic thoughts of failure when faced with a challenging task (Cully et al., 2021).

According to the survey below conducted by Cognitive Behavioral Therapy Los Angeles, when comparing the effectiveness of CBT with medication and other forms of talk therapy, CBT has been found to outperform most other treatments for the majority of anxiety disorders. However, certain disorders show a better response to medication than to CBT.

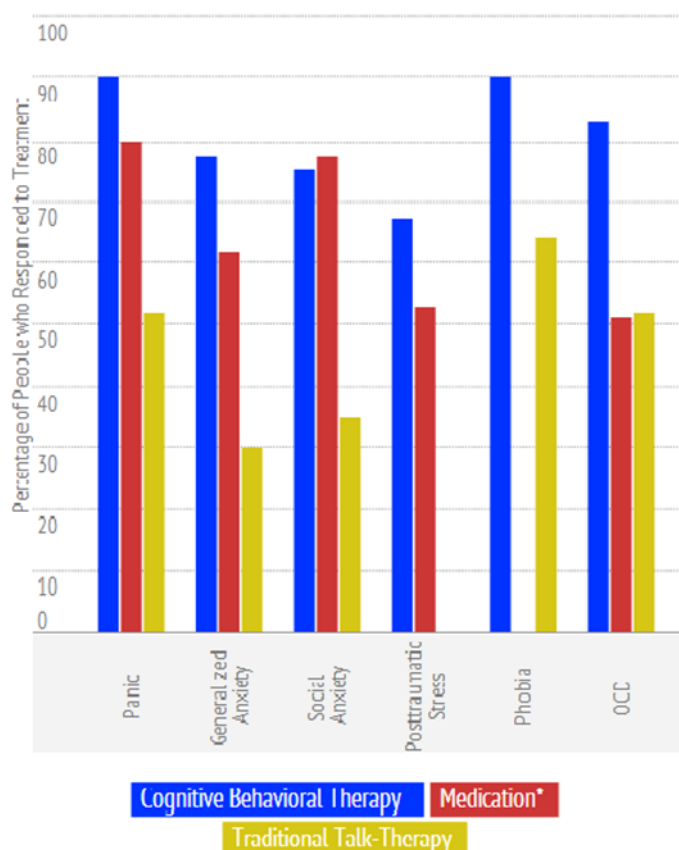


Fig 1: What treatment works for anxiety?
Source: Cognitive Behavioral Therapy Los Angeles

Exposure therapy is another key technique. It involves gradually exposing children to feared situations or stimuli to reduce their anxiety responses (Bouchard, 2004). Emotional regulation strategies within CBT teach children how to manage impulsive behaviors and emotional outbursts, which are common in ADHD.

Case studies have demonstrated the effectiveness of CBT during pandemics, particularly for children with ADHD and anxiety. During COVID-19, online-delivered CBT programs were found to significantly reduce anxiety levels in children by helping them cope with uncertainty and isolation. This was especially useful during periods of lockdown when in-person therapy was not accessible, describing the flexibility of CBT in adapting to crises. CBT, whether delivered through teletherapy or facilitated by parents, can provide practical coping strategies for children with ADHD and anxiety during pandemics.

Case studies

A study by Meininger et al. 2022, evaluated the effectiveness of Cognitive Behavioral Therapy (CBT) delivered via teletherapy for children diagnosed with ADHD and anxiety during the COVID-19 pandemic. As in-person treatment became limited, teletherapy emerged as a vital coping mechanism. Meininger conducted a study involving 561 therapists and 227 parents of patients, for a total of 643 patients aged 3 to 20 years, treated at a university outpatient unit. The study evaluated their experiences with teletherapy during the COVID-19 pandemic. The results indicated that 73% of the patients transitioned from in-person therapy to teletherapy following the outbreak. Both therapists and parents reported high levels of satisfaction with teletherapy, with no significant negative impact on treatment satisfaction or the therapeutic relationship. Factors such as stress related to COVID-19, age, gender, treatment duration, psychosocial functioning, and psychopathology were associated with satisfaction levels, though the correlations were relatively low. Additionally, 66% of parents and 53% of therapists expressed a willingness to continue using teletherapy in the future.

The study showed that CBT delivered via teletherapy helped children regulate emotions, manage anxious thoughts, and maintain focus, despite the stressors of the pandemic. Techniques such as cognitive restructuring and emotional regulation were particularly effective in reducing anxiety symptoms and hyperactive behaviors. Parents reported that their children's anxiety levels decreased, and they showed improved behavioral control, as measured by the CGAS scale. This case underscores how teletherapy can serve as an adaptive and evidence-based coping mechanism during global crises (Meininger et al. 2022).

Parent-led CBT for Children with ADHD and Anxiety Related to Pandemic Stress

Another study by Riddle et al., 2024, explored the role of parent-led CBT for children experiencing ADHD and anxiety influenced by the pandemic. With the disruption of regular routines due to lockdowns, the children's ADHD symptoms intensified, accompanied by heightened anxiety. The parents, under remote guidance from therapists, used CBT techniques such as positive reinforcement and structured routines to help their children cope with the dual challenges of ADHD and anxiety. The study found that parental involvement was key in helping children maintain behavioral control and reduce anxious thoughts during this period. This approach proved effective in reducing symptoms of both conditions by enhancing emotional regulation and building adaptive coping mechanisms, demonstrating the role of family support in managing ADHD and anxiety during crises (Riddle et al., 2024).

Mindfulness and Relaxation Techniques

Mindfulness and relaxation techniques have gained increasing recognition as effective tools in managing ADHD and anxiety. Mindfulness focuses on cultivating present-moment awareness, helping children better understand their thoughts, feelings, and bodily sensations. This practice is particularly beneficial for children with ADHD, who may struggle with sustained attention, and for those with anxiety, who are often preoccupied with future-oriented worries.

Mindfulness exercises such as deep breathing and guided imagery allow children to focus on their breath or visualize calming scenes, helping to reduce physiological symptoms of anxiety such as increased heart rate or muscle tension (Siebelink, 2018). Progressive muscle relaxation is another common mindfulness technique that involves tensing and then relaxing different muscle groups, helping children release physical stress. These exercises are simple enough for children to practice at home and can be integrated into daily routines, making them accessible during high-stress periods like pandemics (Casma and Nani Nurhaeni, 2020). The benefits of mindfulness during pandemics are particularly noteworthy. Benefits include increased resilience, improved physical health, enhanced emotional regulation, and mental clarity amongst other benefits. In a time marked by uncertainty, fear, and disrupted routines, mindfulness helps children build emotional resilience and enhances their ability to manage stress. Studies conducted during COVID-19 revealed that children practicing mindfulness reported lower levels of anxiety and greater emotional stability. The simplicity of these techniques also makes them ideal for use in home environments, where parents can guide their children through exercises even without formal training (Motta, 2020).

Remotely Delivered Mindfulness-Based Training for Adolescents During COVID-19

A feasibility study by Tymofiyeva et al. 2022, examined the impact of a 12-week mindfulness intervention program called Training for Awareness, Resilience, and Action (TARA) during the pandemic. The program, previously delivered in person, was adapted to an online format due to COVID-19 restrictions. It targeted adolescents, focusing on improving anxiety, depression, and emotional regulation. The study found that remote delivery of mindfulness-based interventions could be effective in reducing symptoms of anxiety and depression, even in the context of pandemic-induced stress. The transition to a digital format allowed continued mental health support despite social distancing protocols, showing potential for addressing the heightened mental health needs of children and adolescents with pre-existing vulnerabilities like ADHD (Tymofiyeva et al. 2022).

VI. Case Study: Mindfulness As An Intervention For Self-Regulation And School Reintegration In A Trauma-Informed Primary School Post-COVID-19 Lockdown

A study by Katrina (2024) conducted in a trauma-informed primary school examined the use of mindfulness interventions to support self-regulation and facilitate reintegration into the school environment post-lockdown. The program targeted children exhibiting signs of trauma, anxiety, and attention challenges, including those diagnosed with ADHD. The mindfulness-based intervention, designed to support emotional and behavioral regulation, involved daily mindfulness sessions integrated into the school's curriculum. These sessions included guided breathing exercises, body scans, and mindful listening. The program was adapted to a trauma-informed approach, emphasizing safety, emotional regulation, and creating a calming environment for students dealing with post-pandemic stress. After several months of implementation, the intervention demonstrated significant improvements in children's ability to self-regulate their emotions, particularly in managing anxiety and impulsivity. Teachers reported that students were better able to transition back into school routines, with increased attention spans and reduced behavioral disruptions. The mindfulness exercises became a daily tool for students to manage overwhelming emotions, facilitating a smoother reintegration into the school system post-pandemic. This study describes the effectiveness of mindfulness as a therapeutic approach for children with anxiety and ADHD, particularly in the context of post-pandemic school reintegration. The trauma-informed framework, combined with mindfulness practices, offered a supportive pathway for children to regain stability and cope with the lingering mental health challenges induced by the pandemic.

Behavioral Interventions

Behavioral interventions are foundational in the treatment of ADHD, focusing on modifying specific behaviors through reinforcement strategies. These interventions are particularly effective because they provide structure and consistency, which children with ADHD thrive on. During crises, such as pandemics, these interventions can be adapted to help children manage the increased emotional and behavioral challenges brought on by disrupted routines and heightened stress.

Key techniques in behavioral interventions include positive reinforcement, where desirable behaviors (e.g., completing homework or following instructions) are rewarded, and structured routines, which help children maintain a sense of predictability and stability (Gunaretnam, 2021). Visual aids such as charts or checklists are often used to reinforce routines and provide clear expectations for children (Thomas & Karuppali, 2022).

Case Study: Behavioral Interventions for ADHD Children and parent

A study by Erika et al. titled "Randomized Trial of First-Line Behavioral Intervention to Reduce Need for Medication in Children with ADHD" explored the effectiveness of behavioral interventions in reducing the necessity for medication in children with Attention-Deficit Hyperactivity Disorder (ADHD). The study was initially conducted in an analog summer treatment setting, where it was observed that many children with ADHD either did not require medication or responded to very low doses when concurrently receiving behavioral interventions. To extend this finding, the researchers followed 127 unmedicated children with ADHD, aged 5 to 13, into the subsequent school year. The children were randomly assigned to either receive behavioral consultation (BC) or not (NoBC) at the start of the school year, with weekly evaluations conducted by teachers and parents to assess the need for central nervous system stimulant treatment.

The results indicated that children who received BC were approximately 50% less likely to initiate medication use each week at school or home, and when medicated, they used lower doses. This led to a 40% reduction in total methylphenidate exposure over the course of the school year. Interestingly, despite this reduction in medication use, there were no significant differences between the BC and NoBC groups in terms of end-of-year behavioral ratings from teachers or parents, both of which were positive. Additionally, the cost of treatment did not differ significantly between the two groups. Although the BC group incurred additional costs due to the behavioral consultation, these were offset by the reduced reliance on medication. The study adds to growing evidence that low-intensity behavioral interventions as a first-line treatment can reduce or even eliminate the need for medication in children with ADHD.

VII. Challenges In Implementing Therapeutic Approaches During Pandemics

Accessibility of Mental Health Services

During pandemics, especially COVID-19, in-person therapy became difficult due to lockdowns and social distancing protocols. Several factors contribute to this challenge, including restricted in-person services, digital divides, socio-economic disparities, and limited resources within mental health systems. Pandemics typically result in widespread lockdowns and social distancing measures, severely limiting the availability of traditional, in-person therapy sessions. For children with ADHD and anxiety, the inability to engage in face-to-face therapy sessions with psychologists, therapists, and other healthcare professionals can significantly hamper progress. Cognitive Behavioral Therapy (CBT) and other evidence-based therapeutic approaches that rely on direct interaction between the child and the therapist are difficult to transition to remote formats without losing their efficacy, especially for younger children who may struggle with virtual engagement. Children with ADHD and anxiety often depend on structured, consistent, and face-to-face interventions, which are disrupted. The sudden transition to teletherapy became a challenge, as many children struggled to adapt to the virtual environment, potentially inflating their symptoms. Research has shown that maintaining engagement in virtual settings is especially difficult for children with ADHD due to attention regulation challenges, which further impacts the effectiveness of therapy (Shan He et al. 2021).

Technological and Resource Barriers

Another significant barrier during the pandemic was the lack of access to necessary technology for teletherapy. Many lower-income families, particularly those in rural areas, faced challenges with poor internet connectivity, lack of devices, and an inability to afford the requisite technology. These issues led to interruptions in treatment, leaving children without the proper mental health support during a time of increased stress. The digital divide restricted children from marginalized communities and were disproportionately affected due to systemic inequities in technology and access to mental health services during the pandemic (Lai J& Widmar, 2020).

Increased Stress in Caregivers

The stress experienced by caregivers during the pandemic further impacted the implementation of therapeutic approaches. Caregivers, often overwhelmed by job insecurity, health concerns, and homeschooling, had less capacity to support their children's therapeutic interventions. Research by Tseng (2024) demonstrates that caregivers experience high levels of stress which can negatively affect the consistency and effectiveness of therapy for children with ADHD and anxiety. This led to a greater reliance on community support networks, which were often strained during the pandemic due to increased demand and limited resources (Tseng, 2024).

According to a study by Allison Inserro, over 40% of caregivers reported feeling frequently overwhelmed, exhausted, stressed, and prone to raising their voices more than they would like. Caregivers also indicated that their downtime was significantly impacted by their child or adolescent's ADHD, more so than any other daily activity.

VIII. Recommendations For Mental Health Professionals

Mental health professionals should conduct thorough assessments to determine the specific challenges faced by each child during crises like pandemics to meet the unique needs that require personalized interventions. These therapies will ensure that treatment plans consider the child's environment, symptoms' severity, and access to resources. Cognitive Behavioral Therapy (CBT) may need to be adapted to address increased anxiety from isolation or disrupted routines. Parents and therapists can significantly improve outcomes in children with ADHD and anxiety by ensuring the therapy addresses the core issues causing the crises (Oewel, 2024).

Mental health professionals should advocate for the expansion of teletherapy platforms that are designed to engage children with ADHD, including interactive and gamified elements. Mobile services, such as therapy via smartphone apps or even telephone counselling, could bridge the digital divide experienced by lower-income families. Offering sliding scale fees or partnering with schools to deliver therapy in remote areas can also improve accessibility (Myers, 2015; Gkintoni, 2024).

Educating parents and caregivers is important, as they are effective in helping children with ADHD and anxiety implement coping strategies. Training should focus on behavioral management techniques such as setting routines, using positive reinforcement, and practicing relaxation techniques like mindfulness. Programs that teach parents how to deliver simplified versions of Cognitive Behavioral Therapy (CBT) at home during crises have proven effective in maintaining therapeutic progress (Merrill et al. 2023).

Policymakers should prioritize mental health in national response plans during pandemics. Expanding funding for telehealth services, ensuring insurance covers virtual mental health care, and developing infrastructure that guarantees digital equity are essential steps. Also, policies should mandate the integration of mental health services into schools, community health centers, and other accessible venues. Emergency response policies should

specifically consider the needs of children with ADHD and anxiety, ensuring resources are allocated to support these vulnerable groups during global crises.

IX. Conclusion

The findings from the research emphasize the coping mechanism that behavioral interventions offer in supporting children and adolescents with ADHD and anxiety, particularly during crises like the COVID-19 pandemic. Longitudinal studies, such as the Multimodal Treatment Study of ADHD (MTA), show that ADHD symptoms often persist into adulthood, with fluctuating periods of remission and recurrence, challenging the belief that childhood ADHD is generally outgrown. The evidence highlights that timely, individualized therapeutic interventions can manage the mental health impact on children during global disruptions. The significance of evidence-based, adaptable therapeutic approaches, such as online behavioral therapy during pandemics, cannot be limited. These approaches ensure that children receive consistent care despite external limitations, such as lockdowns, technology barriers, or restricted access to in-person services. Programs designed to train parents and caregivers in coping mechanisms also enhance the effectiveness of these therapies at home, offering critical support during times of crisis.

Finally, mental health professionals must prioritize child mental health during pandemics and other global crises, recognizing that early intervention can significantly reduce long-term psychological consequences. Strengthening access to mental health services, refining online and mobile therapeutic platforms, and advocating for policy changes that enhance mental health support infrastructure are essential steps in safeguarding the well-being of children during uncertain times.

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