

# COVID-19 Pandemic Impact on Children and Adolescent's Mental Health: A Review of Current Research

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## Introduction

Covid-19 is a novel, highly contagious but preventable disease caused by a coronavirus (SARS-COV-2) [1]. The Covid-19 pandemic, which was declared a global pandemic by the World Health Organization in March 2020, has impacted the lives of families across the globe including physical, emotional and mental health [2]. Several stressors including prolonged isolation, infection fears and financial loss are known to impact mental health outcomes during the pandemic [3]. Although children appear to be at lower risk for the severe medical complications of Covid-19, the impact of school closures and social isolation have a devastating impact particularly during adolescence, which presents a sensitive period for social interaction [4,5]. During the Covid-19 pandemic, children and adolescents experienced great stress related not only to the fear of getting ill, but also the loss of loved ones, which increased the risk for long-term health outcomes [6]. In this review we will identify the risk factors for, and the current data on the impact of the Covid-19 pandemic on the mental health of children and adolescents.

## Factors Contributing to the Negative Impact of the Covid-19 Pandemic on Children and Adolescents' Mental Health Include

1. School closures and routine disruption.
2. Parental (caregiver) stress.

3. Increased screen time and limited physical activities.
4. Limited access to mental health care.

## School Closures and Routine Disruption

School closures and limited outdoor activities reduced social interaction and resulted in social isolation, which may negatively impact children's mental health [7] and increase experience of loneliness and psychological stress [8]. School closures have impacted the 55 million students in kindergarten through 12th grade in the United States, but particularly impacted the three million children who were receiving mental health services exclusively through school or school-based programs which were lost during school closures [9]. Prolonged school closure and home confinement have significant impact on children's mental health with 56% of those experiencing lock down related psychosocial problems attributed to school closures [10,11]. Furthermore, school closures have led to the loss of mental health services for 13.2% of adolescents in USA who received some form of mental health services from school prior to the pandemic. The loss of school routine and social isolation might have a devastating effect on young people with mental illness and children with special needs who experienced significant stress and symptom relapse, or can trigger an exacerbating episode of anxiety and depression [12-15]. In addition, school closures resulted in decreased child protection referrals due to inability of the educational system to identify cases of neglect, abuse and human trafficking [16,17].

## Parental Stress (Stress Related to Parental Role)

Family life can be affected by the economic recession, parents remote working from home in addition to caring and educating these children, which increase parental stress [18]. Financial burden on families caused by pandemic predicts a higher level of anxiety and depression [19]. 26.9% of parents reported worsening of their own mental health since the onset of the pandemic, especially mothers, unmarried parents and families of younger children [20]. Parenting stress is directly associated with children's depression [21]. Furthermore, caregiver and parent stress, together with loss of access to mental health services and children's social isolation, leads to an increased risk of child abuse during the quarantine and school closures [22,23]. Parents' stress about COVID-19 and other related conditions could increase anxiety in children [24]. On the other hand the presence of social support and good parent-child relationship protect against children's mental illnesses during the pandemic despite school closures and resultant social isolation [25].

## Increased Screen Time and Limited Physical Activity

During the Covid-19 pandemic, there was a significant increase in sedentary time and decreased physical activity which were negatively correlated with global mental health, anxiety, depression and quality of life [26,27]. There was an increase of four hours/day in screen exposure during the Covid-19 pandemic lockdown among children and adolescents which have been linked to increase in cardiovascular disease risk among children [28,29]. Social media can be useful for maintaining social interaction and coping with isolation [30,31]. However, inappropriate social media and videogames can lead to emotional and behavioral symptoms such as inattention, delinquency, low self-esteem, decreased physical activity and eating disorder [32,33]. Furthermore, excessive Covid-19 related media exposure was associated with increased anxiety level and stress [34].

## Limited Access to Mental Healthcare

During the Covid-19 pandemic, hospital emergency rooms often became the site for mental health evaluations of children and adolescents with a 24% increase in ED visits for mental health concerns in children age 5-11 years and a 31% increase in ED visits for mental health concerns in children age 12-17 years [35,36].

## The Impact of Covid-19 Pandemic on Mental Health of Children and Adolescents

It's well-known that stressful early life events such as the Covid-19 pandemic can lead to psychological breakdowns [37]. In addition, adolescence is a critical period for emergence and exacerbation of anxiety and depressive symptoms [38]. The significant impact of Covid-19 on young people's mental health can be manifested in learning, friendship and family relationships [39] which place generations at risk for long term effects if not addressed [40]. Increased prevalence of anxiety, depression, post-traumatic stress disorder and somatic symptoms have been reported during the pandemic. In addition,

worsening symptoms in children and adolescents with pre-existing conditions have been reported.

## Anxiety and Depression

1. Children impacted by social isolation and loneliness are more likely to experience symptoms of anxiety and depression persisting into post-pandemic condition with the prevalence of anxiety and depression in children and adolescents having doubled compared to pre-pandemic levels [41].
2. Shortly after lockdown Xie and colleagues [42], reported that 34% of children endorsed depressive symptoms while 19% endorsed anxiety symptoms.
3. Among Chinese children Duan and colleagues [43], reported depressive symptoms were endorsed in 22.28% of children and adolescents.
4. Zou and colleagues [44] reported prevalence the rate for depressive symptoms among Chinese adolescents age [18,45] was 43.7%, while prevalence of anxiety was 37.4%.
5. Luma and colleagues [46], reviewed 23 studies with 57,925 children and adolescents from two countries during the pandemic and reported that the pooled prevalence of depression and anxiety symptoms were 29% and 26% respectively.
6. Furthermore, psychological stress has been reported in more than 10% of primary and secondary school students in a Chinese province with high rate of Covid-19 [47].
7. Among college students, depressive symptoms were reported in 34% while anxiety symptoms were reported in 31% [48].

## Post-Traumatic Stress Disorder (PTSD)

1. Using parents' report Ma and colleagues [49] reported that over 20% of children age 7-15 scored above the study cutoff for clinical PTSD.
2. Yue and colleagues [50] found high risk for PTSD in 3.16% of their samples of Chinese primary school children.

## Somatic Symptoms

Due to greater concern about health risk posed by Covid-19, somatic symptoms were reported in 35% of college students while somatic symptoms were only reported in 2.39% of primary school students [51].

## The Impact of Covid-19 on Children with Pre-existing Conditions

### Children with Attention Deficit Hyperactivity Disorder (ADHD) and Special Educational Needs

Over half of parents of school children reported decline in their ability to focus during Covid-19 school closures with limited academic adjustment resulted in difficulties in completing school-related

tasks [52,53]. Similarly, parents of children with special educational needs reported that their children appear to be experiencing worry, loss, and change in their mood and behavior due to Covid-19 pandemic lockdown [54].

### Children with Eating Disorders

41% of young people under clinical care experienced reactivation in their eating disorder symptoms post-lockdown [55].

### Children with Autism Spectrum Disorder (ASD)

Majority of parents of children with ASD reported increased difficulties in managing their child's behavior [56,57].

### Summary

1. The coronavirus disease 2019 (Covid-19) pandemic profoundly disrupted the lives of children and adolescents around the world.
2. The increased emotional stress, feeling of hopelessness and fear in children and adolescents during the pandemic can evolve into mental health illness such as anxiety, depression, posttraumatic stress disorder, and increased drug use.
3. Prolonged social isolation and school closures in effort to control the pandemic are possible reasons for the significant impact of the pandemic on children and adolescents' well-being.
4. The impact of the pandemic on children and adolescents' mental health is significantly greater for children with special needs.
5. In addition, increased stress and economic adversity caused by the pandemic might potentially increase the risk of children's maltreatment which, in many cases, went unreported.

### Conclusion and Recommendation

Research on the mental health effects of the Covid-19 pandemic on children and adolescents confirm the presence of significant anxiety and depression, as well as increases in these symptoms compared with pre-pandemic level. The economic and emotional stress the parents experienced during the pandemic increased their mental health symptoms and might have increased the risk of children's maltreatment. Early identification of mental health issues in children and adolescents using available screening tools is extremely important. Ongoing data collection for children's mental health is needed to monitor the persistent impact of Covid-19 on children and adolescents' mental health to improve their mental health outcome in the current and future pandemics. Furthermore, there is a growing need to implement policies that will help children and adolescents cope with short and long-term mental health effects of the pandemic. Ongoing research is also needed to understand the true toll of the pandemic on children and their families. In addition, ensuring the availability and access to mental health care services for children and their families with the

implementation of technology-based, remote health service and prevention strategies will be vital.

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