

Emerging Mental Health Issues in Children and Adolescents Secondary to the Coronavirus Disease- 2019 Pandemic



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• Suicide • Mental health

Key points

- Determine the prevalence of anxiety, depression, and suicide among adolescents before and during the coronavirus disease-2019 (COVID-19) pandemic.
- Identify evidence-based screening tools to assess for mental illness in adolescents.
- Identify strategies to foster resilience and promote well-being in adolescents.
- Implication strategies for advanced practice nurses, including educating adolescents and families on mental health promotion, and advocating for mental health awareness and resources for adolescents.

Once a highly stigmatized and avoided topic, mental health, particularly among children and adolescents, has become widely recognized socially. Children and adolescents have long experienced depression, anxiety, and devastating rates of suicide. These issues are more widely recognized today due in large part to the drastic increase in mental health issues in children and adolescents during the COVID-19 pandemic. This article

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highlights common mental health issues in children and adolescents and the impact of COVID-19 on their overall mental health. It provides practitioners with the screening tools and opportunities to foster resilience in children and adolescents during this unprecedented time.

BACKGROUND

In April 2022, the American Academy of Pediatrics (AAP), the American Academy of Child and Adolescent Psychiatry (AACAP), and the Children's Hospital Association (CHA) declared a national emergency in children's mental health and called on policymakers to join them in taking action [1]. Between March and October 2020, emergency department visits for mental health issues in children aged 5 to 11 years rose by 24% and 31% in adolescents aged 12 to 17 years [1]. Miller and colleagues [2] explain that current evidence indicates that adolescent mental health symptoms of anxiety, depression, and posttraumatic stress disorder (PTSD) during the pandemic range from 21% to 65% incidence rates. Furthermore, preexisting mental health and behavioral concerns in children and adolescents are exacerbated by stressful events, such as the pandemic and its consequences.

SIGNIFICANCE

Understanding the mental and social development of children and adolescents is critical in attempting to understand the drastic increase in mental health issues during the pandemic. The US Surgeon General's Advisory explains that mental health is shaped by two primary factors: biological and environmental [3]. Biological factors include genes and brain chemistry, which are inherent factors in the person. Environmental factors include life experiences, which can determine whether genetic predisposition to mental health disorder manifests. Environmental factors include prenatal considerations, such as drug and alcohol exposure, birth complications, discrimination, racism, and adverse childhood experiences (ACEs), such as abuse, neglect, exposure to violence, and socioeconomic disparities. These ACEs negatively affect the child's sense of safety, stability, bonding, and well-being [3]. The biologic and environmental factors interact with each other so a child who is genetically predisposed to anxiety may be more affected by an environmental stressor than children without the biologic predisposition. Owing to an increase in environmental stressors, social isolations, and shutdowns, many children and adolescents are experiencing increased rates of mental health disorders.

DISCUSSION

Coronavirus disease-2019

The coronavirus disease-2019 (COVID-19) pandemic has caused upheaval and stress in all aspects of life. Children and adolescents are particularly vulnerable to such stressors as they are still learning how to regulate themselves and overcome stressful situations. Daily life changed quickly resulting in a sudden and drastic change in how our youth attend school, interact with peers, receive

health care, and participate in activities. Simultaneously, many parents became unemployed, families became financially unstable and many were left with concerns about food, health care, and housing. Many children and adolescents were affected by contracting COVID-19 themselves, watching loved ones become seriously ill, and experiencing death. The US Surgeon General's Advisory reports that as of June 2021, more than 140,000 American children had lost a parent or grandparent caregiver to COVID-19 [3]. Furthermore, vulnerable populations, such as those with lower socioeconomic status, have contracted and died from COVID-19 at higher rates than less vulnerable populations. Therefore, the children and adolescents in those vulnerable populations have the environmental risk factors of socioeconomic disparities, discrimination, and racism, with the added stresses of losing loved ones at higher rates and living in a pandemic. In understanding the concepts of executive function and resiliency, and how children develop those skills, it is logical that the pandemic has led to an increase in mental health issues among our youth.

Depression

The prevalence of depression among children and adolescents has been increasing for years. However, the rates have drastically increased since the beginning of the pandemic in early 2020. In a poll conducted by the Centers for Disease Control and Prevention (CDC) in 2019, pre-pandemic, 36.7% of American high-school students reported experiencing persistent feelings of sadness and hopelessness [4]. In a similar poll conducted by the CDC in 2021, 1 year into the pandemic, 44% of American high-school students reported persistent feelings of sadness and hopelessness [4]. Contributing factors to this increase include stress at home related to the pandemic and increased rates of child abuse. In the 2021 poll, 55% of students reported experiencing emotional abuse by a parent or other adult in their own home, including swearing at and insulting the child [4]. Furthermore, 11% reported experiencing physical abuse by a parent or other adult in their home, including hitting, kicking, and beating the child [4]. Twenty-nine percent reported that a parent or other adult in the home lost a job due to the pandemic, causing increased stress in the home [4]. Social connectedness with peers through school is of vital importance. Owing to the lack of social interaction and alternate methods of teaching during the pandemic, children and adolescents have lacked the social interaction that promotes mental well-being, leading to an increased prevalence of depression (Box 1 for symptoms). In addition, schools and health care providers are pivotal in detecting and reporting child maltreatment. Many of these incidences have gone undetected during the pandemic due to alternate methods of teaching and an increase in the use of telemedicine.

Anxiety

In addition to the increase in depression, there has also been a marked increase in anxiety among children and adolescents during the pandemic. Racine and colleagues [5] note that 11.6% of children and adolescents experienced

Box 1: Common symptoms of depression, anxiety, and suicide in children and adolescents [12–14]

Depression

- At least 2 weeks of a depressed or irritable mood and/or loss of interest or pleasure in most activities
- Symptoms present most of the day, nearly every day
- Appetite increase or decrease
- Sleeping too much or too little
- Decreased energy
- Decreased activity level
- Impaired concentration
- Thoughts of worthlessness, hopelessness, and guilt
- Mood changes
- Irritability
- Suicidal thoughts or actions

Anxiety

- Generalized and persistent fear and worry
- Weight loss
- Pallor
- Tachycardia
- Tremors
- Muscle cramps
- Paresthesias
- Hyperhidrosis
- Headaches
- Abdominal pain
- Specific fears and worries related to type of anxiety-separation, generalized, social, obsessive-compulsive disorder, panic, phobias

Suicide

- Threatening to hurt or kill oneself or talking about wanting to hurt or kill oneself
- Seeking methods to kill oneself (firearms and pills)
- Talking or writing about death, dying, or suicide (out of the ordinary for the person)
- Feeling hopeless and trapped
- Uncontrolled anger or rage
- Seeking revenge
- Reckless and risky behavior
- Increasing substance use

Withdrawing from family, friends, activities
Inability to sleep or sleeping too much, anxious, agitated
Dramatic mood changes
Seeing no reason for living

symptoms of anxiety before the pandemic. The pandemic has shown to increase the prevalence of anxiety symptoms in children and adolescents to 20.5% [5]. Anxiety and depression are often comorbid conditions and have many of the same contributing factors. Social isolation, the unknown of what will happen, and the fear of illness or death of oneself or loved ones all contribute to the rising anxiety in our youth. Hawes and colleagues [6] examined the incidence of mental health symptoms during the pandemic and noted that there were high rates of clinically elevated symptoms (see Box 1) of anxiety during the pandemic in subjects aged 12 to 22 years who were examined. The increased use of technology in place of social interaction has also contributed to the increase in anxiety among children and adolescents. As Gray and colleagues [7] note, social distancing efforts have resulted in interaction primarily via virtual platforms. Adolescents, particularly those with existing anxiety or anxious tendencies, are preoccupied with how others perceive them. The increase in social media and virtual platforms during the pandemic has led to adolescents making social comparisons based on online presentations to attain a desired image. This leads to a conflict between the virtual and real self, increasing anxiety. In addition, online bullying can reach people much faster than face-to-face conflict, forcing those who are bullied to socially isolate even further [7]. Children and adolescents with anxiety require stability to feel secure and the unknown nature of the pandemic has led to more dysregulation in these children.

Suicide

The most devastating consequence of mental illness is suicide. Owing to the increase in mental health disorders, there has also been an increase in the prevalence of suicide. Suicide attempt emergency department visits in adolescents aged 12 to 17 years increased by more than 50% in early 2021 in comparison to the same period in 2019, before the pandemic [1]. The contributing factors to the drastic increase in attempted suicide are similar to those of the increased prevalence of depression and anxiety: increased rates of loneliness and sadness, social isolation, losing loved ones to COVID-19, stress at home, online influences, more time at home with things like medications and guns, and an increase in child abuse and maltreatment. It is vital to recognize the risk factors and symptoms of suicidal children and adolescents (see Box 1). The increased prevalence of suicide among our youth is a staggering statistic that demands attention from health care professionals.

Mental health interventions

It is critical that all health care providers evaluating and treating children and adolescents are aware of the emerging mental health issues among this vulnerable population. Thorough wellness visits should include obtaining past medical history, family medical history, family assessment, medications and supplements used, developmental surveillance, physical examination, and anticipatory guidance. As the pandemic continues, it is especially important to fulfill all portions of the wellness exam. The family history and family assessment can alert the provider to a predisposition or environmental factors that could contribute to the child developing a mental health disorder. The developmental surveillance is crucial to identify any developmental issues in younger children, many of which can be worsened by social isolation and alternative methods of teaching. The private interviews with adolescent patients allow the patient to disclose symptoms of mental health issues, as well as any safety concerns they have, such as abuse in the home. Performing proper surveillance allows the provider to determine if further screening for mental health issues is indicated.

Screening and assessment of mental illness. The drastically increasing prevalence rates of mental health issues in children and adolescents make it vitally important for health care providers to be aware of mental health surveillance and screening. Providers serving the pediatric population should approach children and families with an open, empathetic, and nonjudgmental demeanor. Particularly when discussing sensitive topics, such as mental health, it is important to gain trust. Every wellness visit, and episodic visit if indicated, should include a targeted history focused on the child's behavior and any functional impairment [8]. The provider must be aware of developmentally appropriate behavior at various ages to discern if behavior showed is abnormal. It is important to listen to and address behavioral, mental, and functional concerns of both the caregiver and child. If a patient or caregiver indicates a concern about the child's behavior or mental wellness either directly or through developmental surveillance, an appropriate screening tool should be used to assess for mental illness. Several evidence-based screening tools (Table 1) are available to screen for mental health disorders, including depression and anxiety. If the screening tool used indicates a concern for the disorder examined, that is, depression or anxiety, the provider should further inquire about specific symptoms to determine if a diagnosis is indicated. Providers should use the DSM-V diagnostic criteria in assessing and diagnosing mental health disorders. Through a more extensive discussion of symptoms, the provider will be able to discern if the child meets diagnostic criteria for a specific mental illness and what type of treatment or management is indicated. See Fig. 1 for an assessment algorithm.

Treatment of pediatric mental health concerns. Initiating proper treatment of mental health disorders in children is imperative to prevent worsening symptoms. A

Table 1
Evidence-based screening tools [8]

Instrument	Ages (years)	Reporter	Number of items	Time to complete (Min)
General Mental Health				
Pediatric Symptom Checklist (PSC)	4 to 18	Parent Child	35, 17 (different versions for different ages)	5 to 10
Strengths and Difficulties Questionnaire (SDQ)	4 to 18	Parent Child Teacher	25	5
Anxiety				
Self-Report for Childhood Anxiety-Related Emotional Disorders (SCARED)	8 to 18	Parent Child	41	5
Depression				
Patient Health Questionnaire (PHQ-9)	12+	Child	9	< 5
Center for Epidemiological Studies Depression Scale for Children (CES-DC)	6 to 18	Child	20	5
Beck Depression Inventory	7 to 14 13+	Child Child	21 20	5 to 10 5 to 10

child who verbalizes suicidal ideation with or without a plan should be referred immediately to a child behavioral health provider or hospitalized. If the patient denies current suicidal ideation and the screening tool use and patient interview do not indicate a diagnosable mental health condition, the patient and caregiver should be educated about signs and symptoms that would indicate the need for a follow-up appointment. Motivational interviewing can be beneficial in these scenarios for stress management and problem-solving [8]. If the patient requests to see a mental health specialist in the absence of a diagnosed condition, a referral should be initiated to a pediatric mental health specialist. Zhang and colleagues [9] show how research-based psychological counseling reduces the symptoms of depression and anxiety in adolescents.

A child who meets diagnostic criteria for a mental health disorder should be treated with medication, if indicated, and referred to a pediatric behavioral health provider for therapy and advanced management. There are no US Food and Drug Administration (FDA)-approved anxiolytic medications for pediatric patients. Patients presenting with an anxiety disorder should be referred for behavioral therapy. The urgency and determination of inpatient or outpatient treatment will depend on the level of severity (see Fig. 1). *Play Therapy* for preschool-aged children and *cognitive-behavioral therapy* (CBT) for school-aged and older are often effective alone in treating pediatric anxiety [8]. In older children and adolescents, or if CBT alone is ineffective, there are several selective serotonin reuptake inhibitors (SSRI) that are FDA

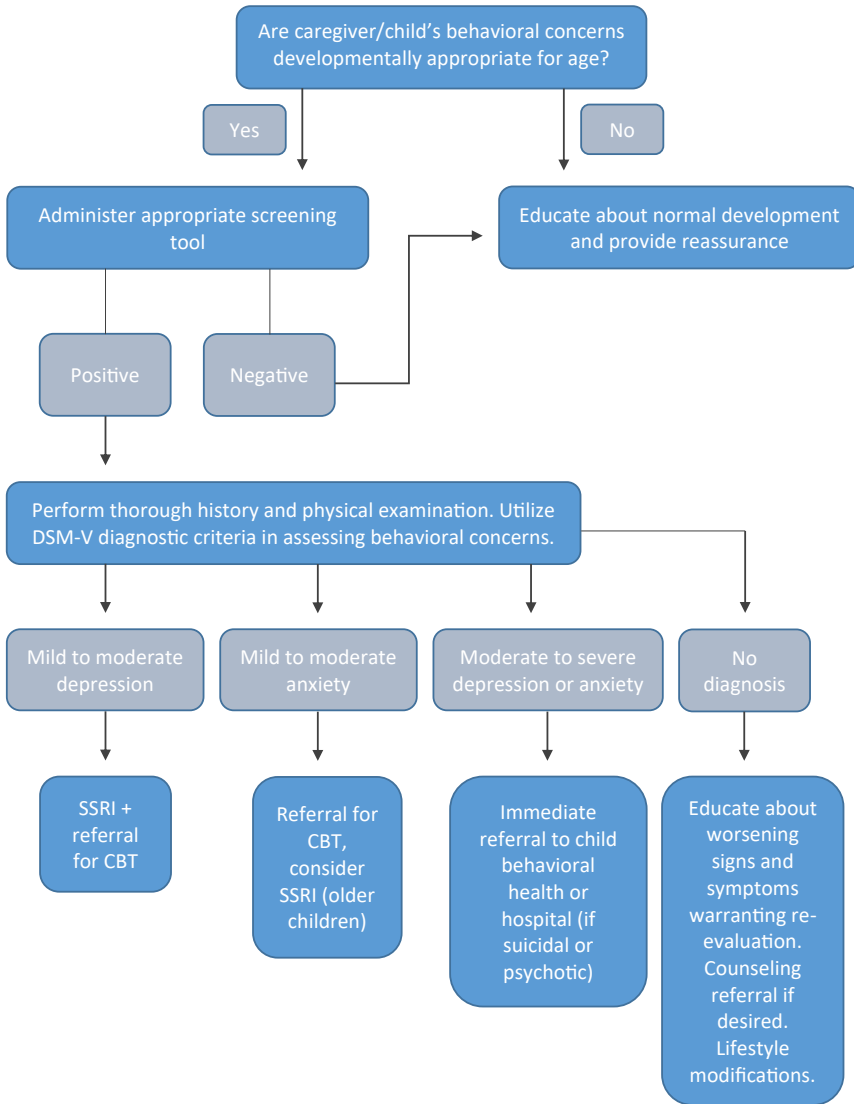


Fig. 1. Assessment and management algorithm [11].

approved for pediatric patients and have proven safe and effective in treating anxiety (Table 2) [8].

The priority intervention in regard to pediatric depression is to determine suicidality. Suicidal risk is greatest within 4 weeks of an initial depressive episode [8]. Patients with acute suicidal ideation and intent with a plan, unstable behavior, psychosis, or risk of abuse should be referred for immediate psychiatric evaluation and treatment at an inpatient pediatric behavioral

Table 2

US Food and Drug Administration-approved medications for depression and anxiety in pediatrics [8]

Drug class and examples	Conditions treated	Primary care drug interactions	Common side effects
<i>Selective Serotonin Reuptake Inhibitors (SSRIs)</i>			
Fluoxetine (prozac, Sarafem) FDA approved 8+	Anxiety Major depressive disorder Obsessive-compulsive disorder Selective mutism	Multiple drug interactions Contraindicated drugs—MAOIs, tryptophan, St. John's wort, thioridazine, TCAs Diet—avoid grapefruit juice and alcohol	Headache, nervousness, insomnia or sedation, fatigue, nausea, diarrhea, dyspepsia, and appetite loss
Escitalopram (lexapro) FDA approved 7+	Depression Anxiety	Same as above but better drug interaction profile	Same as above
Fluvoxamine FDA approved 8+	Major depressive disorder Obsessive-compulsive disorder	Increased risk of bleeding—NSAIDs, aspirin, warfarin	Same as above
Sertraline (zoloft) FDA approved 6+	Major depressive disorder Obsessive-compulsive disorder	Same as above Diet—may interact with grapefruit juice	Same as above
<i>Serotonin Norepinephrine Reuptake Inhibitors (SNRIs)</i>			
Duloxetine (cymbalta, Irenka) FDA approved 7+	Major depressive disorder Generalized anxiety disorder	Multiple drug interactions Risk for toxic levels—SSRIs, amphetamines, guanfacine (potentiates BP effects) Diet—avoid grapefruit juice and alcohol	Nausea, headache, dizziness, diaphoresis, and behavior activation
Venlafaxine (effexor XR) FDA approved 8+	Major depressive disorder Generalized anxiety disorder	Same as above	Same as above

health facility or a hospital. If the patient is at low risk for suicide, the provider can initiate treatment through outpatient modalities. There are several FDA-approved medications for depression in pediatrics (see Table 2). SSRIs are typically first-line treatment. Sertraline and fluoxetine are commonly prescribed as they can be prescribed safely at younger ages (6 years and 8 years, respectively). The evidence indicates that the best treatment responses result from a combination of CBT and SSRIs [8]. Medication maximum response can take 4 to 6 weeks to attain, but doses can be titrated

every 2 to 4 weeks if significant side effects are absent [8]. Upon initiating antidepressant therapy, it is important to inform caregivers and patients that activation and mania can occur with antidepressant use. If any concerning symptoms arise, such as decreased impulse control, increased risk-taking behavior, and significantly elevated mood/mania, immediate follow-up is indicated. Providers should make contact with the patient or caregiver within 3 days of initiating pharmacotherapy and follow-up in the clinic weekly through the first 4 weeks of treatment [8]. Once stable, follow-ups should occur every 3 months or as needed for side effects and changes in symptoms [8].

The specialty of pediatrics is unique in that the patient includes the child, but also the family/caregiver and the environment in which the child lives. Therefore, it is crucial to involve the family in the treatment of pediatric mental health conditions. Individual CBT is indicated for children with mental health concerns, but family therapy is also beneficial. A study conducted by Inscoc and colleagues [10] indicated that caregiver involvement in trauma-informed mental health services led to better outcomes for children with co-occurring traumatic stress and suicidal thoughts and behaviors. The COVID-19 pandemic has caused trauma for many children and adolescents, leading to an increased prevalence of mental health issues and suicidal thoughts and behaviors. Therefore, obtaining trauma-informed mental health services for those patients could prove beneficial.

Health care providers may be the only mandated reporters that children and adolescents encounter regularly during the pandemic, so it is crucial to ask important questions and perform thorough physical examinations. Anticipatory guidance of developmental milestones should continue, and providers should also include strategies for fostering resilience in children and adolescents. The concept of resiliency is one that helps many at-risk youth overcome the obstacles that put them at risk for developing mental health problems and is largely determined by executive function and regulation. As Miller and colleagues [2] explain, schools incorporate executive function into their curricula. Executive function involves the processes responsible for regulating emotion, coordinating brain function, and influencing emotional expression to promote healthy social-emotional development and resilience. However, the alternate methods of teaching during the pandemic have limited the ability of the schools to teach those concepts well.

Families can also foster resilience in their children with a variety of positive methods. To promote resilience, it is important to empower children and caregivers to recognize, manage, and learn from their emotions [3]. This includes caregivers addressing their own mental health and substance use problems, modeling positive relationships, and promoting healthy and positive relationships between their children and others, social media, and technology [3]. Caregivers should be educated about the connection between mental health and physical health [2], and that toxic stress affects the long-term health of children and adolescents [3]. Providing thorough

education to caregivers allows them to empower and instill resilience in their children.

Implications for advanced practice nurses

Health care providers are patient advocates and trusted professionals. One of the responsibilities of this role is to advocate for policies that promote well-being of the patients served. The evidence indicates a mental health crisis among American children and adolescents, and primary care providers serving this population should be involved in advocating for and promoting access to quality health care and mental health services [1,3]. There are emerging mental health concerns in children and adolescents since the onset of the pandemic. In using the appropriate interviewing strategies, screening tools, and diagnostic and management processes, advanced practice nurses can properly identify and treat the rapidly emerging mental health conditions among America's youth. In addition, the specialty knowledge that advanced practice nurses have regarding mental health and child development equip them to be advocates for enhanced coverage of pediatric mental health services. Many public medical insurances cover mental health services but there remain many private insurance policies that have limited coverage for mental health conditions. Access to care continues to be a barrier for children to obtain mental health services. Unfortunately, there are still many areas in America that lack mental health services for pediatric patients. Advocating for legislation that allows for advanced practice nurses to practice at the full scope of their certification and licensure can create opportunities for advanced practice nurses to serve this underserved population. The role of the advanced practice nurse in providing primary care for pediatric patients spans well beyond the physical health of the child. It is essential for advanced practice nurses to recognize the disparities in pediatric mental health and work diligently to diminish them.

SUMMARY

In conclusion, the literature shows an increase in the incidences of depression, anxiety, and suicidal behavior among children and adolescents [5,6]. This evidence supports the declaration of a national emergency in pediatric mental health. Primary care health care providers serving children and adolescents should know the risk factors, assessment strategies, and treatment modalities for pediatric mental health issues. Furthermore, pediatric health care providers should be aware of the increasing incidences of mental illness among American youth and advocate for the resources to combat this national emergency. Further research should be conducted to observe the efficacy of various mental health treatments in pediatric patients, advance the assessment tools available to screen for and diagnose mental health conditions in children and adolescents, and how the presentation and incidence of pediatric mental health issues change as the COVID-19 pandemic evolves.

CLINICS CARE POINTS

- In April 2022, a national emergency in children's mental health was declared in the United States [1].
- Due to an increase in environmental stressors, social isolations and shutdowns, many children and adolescents are experiencing increased incidences of mental health disorders during the COVID-19 pandemic.
- Emergency department visits for suicide attempts in adolescents aged 12-17 years increased by more than 50% from 2019 (pre-pandemic) to early 2021.
- Advanced practice nurses should be prepared to advocate for access to mental health services for all children and adolescents.
- Advanced practice nurses serving children and adolescents should be prepared to identify and treat emerging mental health conditions in children and adolescents, as well as provide the education and resources to help families and their children.

DISCLOSURE

The authors have nothing to disclose.

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