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Keywords

COVID-19, eating disorders, adolescents

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[Introduction and Background](#)
[Review](#)
[Conclusion](#)
[References](#)

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ABSTRACT

COVID-19 was an unprecedented time for the entire world. As cases rapidly rose globally, the primary focus was on preventing further spread of the virus and taking care of acutely ill patients. Unfortunately, this meant that getting adequate care for other chronic conditions, including eating disorders (EDs), was a lower priority. Adolescents with EDs were a particularly vulnerable population, as their source of social support and normalcy in the form of school and in-person activities was removed with social distancing and lockdowns. The purpose of this paper is to investigate how COVID-19 affected EDs in adolescents, including likelihood of accessing care, rates of hospitalizations, use of telehealth services, and development of co-morbid mental health conditions. This brief literature review of current research will explore the question of how adolescents with EDs were negatively affected by the pandemic.

INTRODUCTION AND BACKGROUND

The COVID-19 pandemic has greatly affected many aspects of daily living for people worldwide. It has had a negative impact on mental health, especially in people with prior psychiatric illnesses, including EDs.¹ Multiple factors can have a harmful impact on the development/recovery of EDs and eating habits, including changing living situations, social distancing, changes in physical activity routines, financial concerns affecting access to healthcare, and limitations in food access.^{1,2} New psychosocial stressors and lockdown restrictions can worsen ED-related triggers and reinforce a lack of control over the external environment, which can be especially challenging for people with anorexia nervosa, bulimia nervosa, and binge eating disorder.²

When the discussion about how the pandemic affects EDs includes adolescents as well, it becomes more complicated due to the relative lack of evidence in young people with EDs.³ This is a significant limitation, because most research has been done on small sample sizes or in localized areas, making it difficult to draw significant conclusions from any one given study. But, general trends have shown that adolescents with EDs presented with higher rates of medical instability and hospitalization during the pandemic when compared to adolescents with EDs before the pandemic.³ It is also essential to remember that EDs are associated with an increased morbidity and mortality risk, family burden, and higher healthcare costs when compared to the

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general population, making them even more difficult to treat during a stressful period like the pandemic.¹ Our goal is to summarize recent research on this topic; however, COVID-19 is still omnipresent and further research needs to be done to understand its impact on EDs in adolescents before drawing general conclusions.

REVIEW

Methods

For this brief literature review, a database search was done using PubMed and Google Scholar. The keywords used were “COVID-19”, “eating disorders”, and “adolescents”. This criteria yielded 17 results on PubMed, and 28 results on Google Scholar, for a total of 45 results. From this initial search, studies before 2020 as well as duplicate studies were excluded. Results were also sorted by relevance, and a final of 24 sources were chosen.

Diagnoses and Hospitalizations

In the DSM-5, EDs are described as “a persistent disturbance of eating or eating-related behavior that results in the altered consumption or absorption of food and that significantly impairs physical health or psychosocial functioning”.⁴ They usually develop during the teenage years, and socioeconomic status and education level seem to have the greatest effect on the development of EDs.⁴ Unfortunately, the diagnosis of EDs has increased globally during the pandemic.⁵ However, the demographics and incidence of the specific diagnoses were similar before and during the pandemic, with the majority of patients still being female and white.^{6,7}

Besides looking at the number of new diagnoses, another quantitative way to measure how the pandemic affected healthcare needs of adolescents with EDs is to look at hospital admission rates. Because this topic is recent and still currently developing, there is not a main research study that has comprehensively looked at the changing needs of adolescents with EDs during the pandemic. However, out of the studies reviewed, the trend was that hospital admissions for EDs greatly increased during the pandemic.³⁻⁸ Meier et. al did a systematic literature review using 59 cross-sectional studies, which showed that there was an overall average increase of 48% (range 0% - 123%) in hospital admissions for EDs during the pandemic in women, children, and adolescents with EDs compared to previous time points.³ A retrospective cross-sectional study in Italy of 500,000 children between the ages 5-19 showed a similar trend, with an increase in hospitalizations by 10.8% from

2019 to 2021 ($P < 0.05$).⁴ Likewise, a study done at Yale University’s hospital showed that hospital admissions increased from 1.4 per month pre-pandemic to 3.6 per month during the pandemic ($P < 0.001$) which is almost a three-fold increase, although this study is limited by its small sample size of 85 participants.⁷ Also, a larger proportion needed higher levels of care, like a partial hospitalization program, residential care, or transfer to an inpatient psychiatric unit.⁷ Similarly, a study at Johns Hopkins All Children’s Hospital showed that there was a 188% increase in hospitalizations among adolescents with EDs from pre-pandemic to during the pandemic ($P = 0.009$), although this is also limited by its small sample size of 71 adolescents.⁸ Their results also showed a significant increase in co-morbid mental health conditions like anxiety and depression in these patients.⁸

Although some of these studies are limited by their small sample size and geographical distribution, they all show similar trends: during the pandemic, there was an increase in the rate of hospitalizations in adolescents with EDs when comparing rates before the pandemic vs. after the pandemic. Some studies show a greater increase than others, but there was a statistically significant increase in hospitalization rates in the studies that were analyzed, meaning that there was a worsening of ED symptoms.³⁻⁸ However, it is important to acknowledge that hospital admissions likely reflect symptom changes in adolescents with severe EDs, and may not reflect symptom changes in adolescents with less severe EDs.

The Relationship between EDs and Other Mental Health Conditions

The association between EDs and other mental health issues has been established well before the COVID-19 pandemic. EDs have been tied to mental health conditions, especially anxiety and depression.⁹⁻¹² Although the incidence of anxious and depressive symptoms increased in the general population during the pandemic, adolescents with EDs were a particularly vulnerable population.⁹⁻¹² In fact, a review of mental health of adolescents during the COVID-19 pandemic showed that from the second wave of the pandemic and onwards, there was an increase in suicidal ideation and attempts in adolescents with pre-existing EDs and with other behavioral issues like anxiety and depression.⁹ This trend could have been influenced by the extreme change in the routine of adolescents; they had to quickly transition to online learning while adjusting to living at home with their families.⁹⁻¹¹ Also, social isolation from peers and loneliness can exacerbate

symptoms of anxiety and depression among children and adolescents.⁹ A youth-self report (YSR) questionnaire of 813 adolescents showed that youths themselves frequently said that the pandemic was a trigger for an increase in the severity of their eating disorder.¹¹ Both male and female adolescents with EDs scored higher on the subscales of Withdrawn, Somatic complaints, Anxious/depressed, and Social problems during the COVID-19 pandemic when compared to before ($P < 0.001$).¹¹ When considering the rapid changes that adolescents had to adapt to during the pandemic, it is no surprise that those with EDs were especially vulnerable to developing other serious mental health symptoms.

More research has to be done to assess the exact impact in adolescents with eating disorders, but existing data already supports the negative effect on mental health in this population. A larger study done by Dey et. al from 80 different healthcare organizations in England found that female adolescents have been disproportionately affected by EDs.¹² They found that there was a 30% increase in hospital admissions for EDs during the pandemic among this population, and that there was a significant association between EDs, anxiety, and depression as well.¹² Of note, the number of new referrals of adolescents to mental health services increased by 46% in 2020 compared to 2019.¹² This study concluded that lockdown regulations created an especially harmful environment for adolescents, who could have benefited from access to individualized therapy, but unfortunately could not access the services they needed for their mental health.¹² Although more research has to be done to compare the prevalence of anxiety and depression in adolescents with EDs vs. without EDs over the course of the pandemic, it is clear that adolescents have worse mental health outcomes now than before.¹²

The Effect on Access to Treatments and Their Effectiveness

Given the rising rates of hospitalizations and co-morbid conditions in adolescents with EDs since the beginning of COVID-19, there is an increased need for treatment options too. However, the pandemic has made access to adequate treatments tricky for many reasons, including difficulty with transitioning to telehealth use and mixed perception among participants.^{13,15,17} Before 2020, there was limited evidence on how telemedicine could be used for treatment of EDs in adolescents, but this is now changing.¹³ Graell et al. analyzed 1,329 telehealth visits and 489 outpatient visits in adolescents with EDs from the start of the pandemic.¹³ They found that telehealth

models are useful for maintaining continuity of care in outpatient treatment of EDs in adolescents, but day hospital programs are more challenging to implement using a telehealth model of care.¹³

Patient responses to the shift to telemedicine have been varied as well, which complicates evaluating its effectiveness.^{13,17} Some studies found that patients felt no difference in the quality of their care after switching to telemedicine.¹³ However, a sample of 1021 people with EDs in the US and Netherlands reported the quality of care with telemedicine to be “somewhat” or “much” worse than usual.¹³ Other studies had patients who reported a lower quality of care and lower satisfaction as a result of lower therapeutic alliance and a shorter duration of treatment.¹³ When analyzing the negative effect COVID-19 had on treating adolescents, it is also important to consider the potential positive effects as well, especially given the mixed patient response to telemedicine. For example, telemedicine can be a convenient and cost-efficient way to access treatments for patients who live far away from in-person treatment facilities.¹³ Furthermore, adolescents with EDs may experience discomfort with viewing themselves on screen, but using videoconferencing in a telemedicine session can be a safe place to overcome that discomfort, with the help of a trained professional.¹³ However, the success of telemedicine in treating adolescents with COVID-19 is contingent upon family support and resources at home.^{13,18}

New Developments in Telemedicine

There have been novel developments within the realm of telehealth since the beginning of the pandemic in an effort to adapt to the pandemic, although evidence for their effectiveness is limited. For example, in “tele-psychology”, a psychotherapist uses conversation analysis to interpret verbal language and voice tone.¹⁴ Another treatment is an extension of the CBT commonly used in telemedicine, and is called enhanced cognitive behavioral therapy (CBT-E).¹⁵ It helps the patient create goals and work on specific tasks in between sessions, and is designed for patients with EDs.¹⁵ Advantages include that it is easily adaptable to telehealth models of treatment, and it is convenient and accessible for a lot of patients.¹⁵ Other innovative methods include hybrid meetings with a multidisciplinary team, including the patient, family, and members of the medical team.¹⁶ The Great Ormond Street Hospital reported positive results using this method, stating that all adolescents involved successfully avoided admission to the hospital.¹⁶ However, details about the sample size and geographic distribution of the participants is unknown, limiting the reliability of this study.

Carer Burden and its Effect on Care

Although adolescents with EDs are disproportionately affected by the pandemic when compared to healthy adolescents, how well they cope may also be tied to factors that are not in their direct control. Family dynamics and financial stability can greatly affect care in these adolescents.^{17,18} Furthermore, it is also important to consider the carer burden in parents and other family members, which refers to the physical, emotional, and financial toll associated with providing care.¹⁸ Unique challenges faced by carers of youth with EDs during the pandemic mainly revolve around the transition to telehealth services.¹⁸ Now carers have the added responsibility of periodically weighing their child, recording food/calorie intake, and taking vital signs, which can contribute to stress.¹⁸

A case series of 4 adolescents from a pediatric ED center in Israel using telemedicine showed that there was an improvement in condition in those who had well-organized families, because they were more motivated and successfully able to adjust to the new conditions as a result of the lockdown.¹⁷ But telemedicine was not as helpful in adolescents who had more family problems or were dealing with financial concerns, and they could have had more benefit from face-to-face interventions.¹⁷ For example, one case described a 14-year-old female with a history of anorexia nervosa and rage outbursts who had to start living at home with her parents and three siblings at the start of the pandemic.¹⁷ Her sessions with the psychiatrist, nutritionist, and psychologist were transferred to telemedicine.¹⁷ Her father had to continue working outside of the home, and her mother was confined to bed rest because of severe back pain, meaning that the patient's sisters would cook and supervise her meals.¹⁷ Unfortunately, this family situation led to continuous tensions between the patient, her mother, and the patient's siblings.¹⁷ The telemedicine family consultations and individual psychotherapy sessions did not help the patient with her ED, and she was ultimately admitted to inpatient treatment after the first quarantine ended.¹⁷ Although further research has to be done about the effectiveness of certain treatment options specifically for EDs in adolescents, this case shows that telemedicine may not be a viable option for every patient and that family dynamics greatly contribute to patient outcomes.

Online Learning Services as a Trigger for Appearance Concerns

Interestingly, using videoconferencing software like Zoom and the transition to online learning was as-

sociated with worsened body image concerns in adolescents.^{7,19} Adolescents with EDs or who already have concerns about their appearance can be especially vulnerable to the negative effects of videoconferencing.¹⁹ Videoconferencing was associated with more appearance-management behaviors and reduced engagement with other members of the meeting.¹⁹ Choukas-Bradley et. al surveyed 93 girls aged 12-17 years four weeks after the start of lockdown orders (April 2020; time 1), six weeks after (time 2) and seven months after lockdown orders (time 3).¹⁹ They found that girls' ratings of how frequently they evaluated their own appearance was positively correlated with higher depressive symptoms at time 2, but not time 3.¹⁹ However, this was the only longitudinal study done on a sample of adolescents, so further data is needed, especially in adolescents with EDs.

Future Directions and Implications for Care

Since the start of the pandemic, telemedicine has been increasingly used to help adolescents with EDs. Although it may not be a viable solution for every individual, it is headed in a positive direction. The transition to telehealth services during the pandemic has allowed adolescents to have continuity of care for their EDs.²⁰ Since March 2020, the use of telepsychiatry and telepsychology for mental health services has increased greatly, and is predicted to continue even post-pandemic once all of the restrictions are lifted.^{21,22}

However, it is important to note that while adolescents with EDs are likely an especially vulnerable group as a result of the pandemic, the full impact of the pandemic itself is still unknown.²³ It is not clear whether the surge in EDs will continue, improve, or worsen with time.²⁴ Long-term data is needed to further understand ED trends, and what consequences are directly as a result of the pandemic.²⁴ Regardless, adolescents with EDs will likely have needs that will persist even once the pandemic is over.

CONCLUSION

The question of how adolescents with EDs are negatively affected by the pandemic is starting to become clear. Despite limitations in the sample size and diversity of populations in current studies, the hope is that future studies can be done on a wider scale to further highlight this trend. EDs are serious, life-threatening mental health disorders, and their treatment, especially in adolescents, must be a priority going forward.

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