


The impact of COVID-19 on adolescent psychiatric inpatient admissions

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Abstract

COVID-19 has disrupted the lives of individuals and families across the globe. For many, the impacts of this global pandemic have been insurmountable and have resulted in significant stressors. Although medical advances have allowed individuals to slowly begin to restore their sense of normalcy, COVID-19 has resulted in unprecedented mental health impacts for many, especially children and adolescents. The present study examines whether stressors related to COVID-19 and whether subsequent quarantine/isolation were possible contributors to psychiatric crises that led to adolescent psychiatric inpatient admissions. Electronic medical records of those admitted to Strong Memorial Hospital's Child and Adolescent Inpatient Unit between March 13, 2020 and January 1, 2021 were reviewed. Admission and discharge notes were analyzed to determine the presence and context of keywords related to COVID-19. Approximately, 53% of all adolescent psychiatric crises that led to inpatient admission were related to COVID-19 stressors. Results of this study will be used to help understand the extraordinary mental health impacts of a global pandemic and will assist mental health service leaders to better plan for patient flow should there be another wave of quarantine/isolation. Additionally, these results can help inform and develop pandemic-related strategies and interventions that can reduce overall distress in children and adolescents.

Keywords

COVID-19, adolescents, inpatient, psychiatry, crisis

Introduction

The COVID-19 pandemic has resulted in increased uncertainty, isolation, and fear across the globe. Individuals and families have experienced tremendous loss, stress, and consequently mental health

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concerns. As there still lies much uncertainty surrounding the COVID-19 pandemic, knowledge gaps regarding the impact on individuals remain. Understanding the mental health difficulties, specifically those of children and adolescents, can help inform and develop pandemic-related strategies and interventions that can reduce overall distress and improve mental health outcomes.

Although research on the psychological impact of COVID-19 is still emerging, past research has explored the impact of pandemics and infectious disease outbreaks, such as severe acute respiratory syndrome (SARS) and the H1N1 influenza, on individual's mental health. Research indicates that 35% of individuals recovering from SARS reported moderate to severe levels of depression and/or anxiety (Cheng et al., 2004). Similarly, during the H1N1 pandemic, 30% of children and 25% of adults who were quarantined reported symptoms consistent with post-traumatic stress disorder (Sprang & Silman, 2013).

Recent data from China suggest that 25% of the general population experienced some level of psychological distress during the first wave of COVID-19 (Holmes et al., 2020). Additionally, Wang et al. (2020) noted that this level of psychological distress remained stable throughout different phases of the pandemic as there were no significant differences in reported rates of stress, anxiety, and depression from the initial phase of COVID-19 to the peak of the pandemic 4 weeks later. This indicates that any psychological distress experienced during the pandemic may be long-standing and can have lasting impacts on individual's mental health. Rettie and Daniels (2020) recently conducted a study in the United Kingdom examining how individual's tolerance of uncertainty and coping responses influenced their degree of distress. Findings indicated that COVID-19 is profoundly and negatively impacting the population's mental health with an increased incidence of anxiety and depression.

The rapid spread of COVID-19 in the United States resulted in regulations that dramatically altered individual's daily lives. In late June, only a few months into the pandemic in the United States, 40% of adults reported struggling with mental health or substance use issues. Specifically, 31% of adults reported symptoms of anxiety and depression, 26% reported symptoms related to trauma/stressor-related disorder, 13% started or increased substance use, and 11% seriously considered suicide (Czeisler et al., 2020). Call volumes to crisis call hotlines have increased drastically with crisis centers themselves grappling to manage the demand (Noguchi, 2020).

It is also important to understand the impact of COVID-19 on children and adolescents' mental health. More so than adults, it has been suggested that the COVID-19 pandemic may continue to have long-term consequences on children and adolescents (Shen et al., 2020). A survey conducted in the United Kingdom indicated that 80% of youth with pre-existing mental health needs reported that the coronavirus pandemic worsened their mental health status (Thomas, 2020). Limitations on outdoor play, meeting friends, and engaging in in-person activities have been associated with lower levels of positive affect in children (Lee, 2020; Liu et al., 2020; Singh et al., 2020). Although the extent to which children are impacted may depend on vulnerability factors, such as developmental age, pre-existing mental health condition, and socioeconomic status (SES), it is evident that this pandemic has had drastic implications and significant modifications in children's daily routines.

Most notably, learning has transitioned to hybrid or remote models, extracurriculars have been canceled or greatly reduced, and social isolation has increased while physical exercise has decreased. Some children and adolescents may experience frustration and distress at missed or postponed events or activities (Clemens et al., 2020; Singh et al., 2020). Online learning and attending to virtual classrooms are often difficult for children, especially those with pre-existing learning disorders (Clemens et al., 2020; Lee, 2020). Adapting to these changes may result in decreased school performance and increased agitation (Singh et al., 2020). Additionally, school can

provide a safe space for many children and adolescents, with a predictable source of food for lower-income families and access to mental health services (Lee, 2020).

Increased and prolonged home confinement has also significantly impacted children and adolescent's psychological well-being (Singh et al., 2020). Previous studies indicated that home confinement for children and adolescents is associated with increased uncertainty, anxiety, isolation, loss of coping mechanisms, and loss of motivation (Singh et al., 2020; Thomas, 2020). Research has indicated an increase in internet and social media use among youth. Not only may children have less supervision over their internet use which can increase risk of compulsive internet use and access to developmentally inappropriate content, they may also be at increased risk of cyber-bullying (de Miranda et al., 2020; Singh et al., 2020; Thakur et al., 2020). Although stay-at-home orders have increased parental contact with children and opportunities for more involvement and play, the opportunities for familial conflict have also increased. COVID-19 has posed significant stressors for parents as they are attempting to balance child-care, home schooling, and working from home. For other parents, COVID-19 has led to unemployment or increase financial stress, possibly negatively impacting the child's environment. Unfortunately, for some children, the increase in home confinement may reduce their safety as they may be exposed to domestic violence or various forms of maltreatment (Clemens et al., 2020; Lee, 2020; Singh et al., 2020). This is also a significant concern as children may have more limited contact with others who may identify signs of abuse, and many legal and preventative services are not functioning at full capacity (Clemens et al., 2020; de Miranda et al., 2020).

Research examining the impact of the pandemic on psychiatric inpatient admissions has largely been focused on older populations. Lee et al. (2020) conducted a study in Hong Kong examining whether psychiatric admissions among the geriatric population increased after COVID-19 and whether the increase was comparable with that seen during SARS. Although there were more psychogeriatric admissions during SARS, results indicated a 21.4% increase in psychogeriatric admissions from the 3 months prior to the onset of COVID-19 (November 2019–January 2020) to after the COVID-19 outbreak (February 2020–April 2020). Recent studies from Germany have indicated that although mental health needs have increased, psychiatric inpatient admissions have decreased (Hoyer et al., 2020). Similar findings have been reported in the United Kingdom, United States, Portugal, and Italy (Abbas et al., 2020; Clerici et al., 2020; Gonçalves-Pinho et al., 2020; Leeb et al., 2020). Despite the widely reported decrease in psychiatric inpatient admissions, research has indicated the proportion of individuals admitted because of suicide and violence risk was higher after COVID-19 (Lee et al., 2020). Research on patients reporting to the emergency department in Nepal during COVID-19 indicated an increase in suicide and self-harm behaviors (Shrestha et al., 2020). In the United States, research has suggested increased rates of youth suicidal ideation and suicide attempts during the COVID-19 pandemic as compared with rates in 2019 (Hill et al., 2021).

Presently there is limited research on the impact of COVID-19 on child and adolescent psychiatric inpatient admissions. In New York City, comparing pre-COVID-19 and COVID-19 periods, researchers found a significant decline in emergency psychiatric evaluations among children and adolescents. It was speculated that this may be due to parents' fear of bringing their children to the hospital and contracting COVID-19 in the emergency department, and that primary psychiatric referral sources (i.e., schools and mental health clinics) were more likely to be closed due to quarantine orders (Ferrando et al., 2020). However, although children's emergency department visits for injury or non-COVID-19-related concerns decreased, the reported children's emergency department visits for mental health-related concerns increased. This suggests that although children and families may be utilizing emergency psychiatric care less frequently, the proportion of emergency department visits for mental health as compared to other emergency department visits

was higher (Leeb et al., 2020). Additionally, the Centers for Disease Control and Prevention (CDC) found that although the number of children's mental health–related emergency department visits decreased sharply from mid-March 2020 through early April, there was a steady increase in these visits from mid-April through October 2020 (Leeb et al., 2020).

In New York City, approximately 23% of child and adolescents that presented at an academic medical center for emergency psychiatric evaluations during the COVID-19 period were found to have moderate to severe stressors related to COVID-19. For these individuals, the COVID-19-related stressors were directly related to their clinical presentation and need for psychiatric evaluation. The most common COVID-19-related stressors for these individuals were worrying about themselves or family members contracting the infection, stress related to quarantine, and financial strains. Researchers also found that during the COVID-19 period there was an increase in the proportion of child and adolescent patients admitted to inpatient units. Over half of the children and adolescents presenting for emergency psychiatric evaluations during the COVID-19 period were hospitalized to an inpatient unit, as compared to the 32% hospitalization rate in the pre-COVID-19 period. This suggests that patients that did present for emergency psychiatric services may have had proportionately more severe pathology (Ferrando et al., 2020). Similarly, research conducted in Los Angeles indicated that although adolescent psychiatric admissions decreased during the COVID-19 time period, COVID-19 precipitated admissions accounted for 24% of all adolescent psychiatric inpatient admissions. Researchers found that most admissions for adolescents with psychiatric histories were precipitated by stay-at-home stressors; however, for 28.6% of the sample, it was their first mental health encounter (Choi et al., 2020).

The purpose of this study is to determine the extent to which stressors related to COVID-19 and subsequent quarantine/isolation were contributors to psychiatric crises that led to admissions to an acute adolescent inpatient psychiatric unit. This information will be used to help understand the unprecedented mental health impact of a global pandemic and will assist mental health service leaders to better plan for patient flow should there be another wave of quarantine/isolation.

The Comprehensive Psychiatric Emergency Program (CPEP) and the Child and Adolescent Psychiatric Inpatient Unit (CAPIU) serve several counties in the Western/Upstate New York region. Catchment areas include urban, suburban, and rural areas with a wide demographic. CPEP serves children, adolescents, and adults; patients receive a comprehensive psychiatric evaluation and are either discharged with support services, or admitted to an acute inpatient unit within the same hospital. The CAPIU is a 27-bed unit for children and adolescents ranging from 5 to 18 years of age, although the majority of patients are of age 12 years and up.

Methods

The electronic medical records (specifically admission and discharge notes) of adolescents, ages 12–18 years, admitted to Strong Memorial Hospital's Child & Adolescent Psychiatric Inpatient Unit (CAPIU), were manually reviewed using the keywords, COVID-19," "COVID," "Corona," "Coronavirus," "Quarantine," "Lock-down," and "Pandemic" to assess whether factors related to the pandemic were involved in the psychiatric crisis that led to admission. Admission and discharge notes were reviewed to ensure the context of the keywords indicated that COVID-19 was a relevant stressor (e.g., "Patient reports isolation due to COVID-19 restrictions which led to an increase in depressive symptoms" vs. "Patient is remotely attending school due to COVID-19"). Both researchers independently reviewed the content of notes to ensure inter-rater reliability.

Individuals were admitted to CAPIU after presenting to CPEP at Strong Memorial Hospital. It should be noted that all patients who present to the medical emergency department with psychiatric

concerns are triaged to CPEP for evaluation. After evaluation, children and adolescents who are deemed appropriate, based on acuity, safety concerns, and risk, are admitted to the CAPIU. For those admissions that were related to COVID-19, admission month and demographics (age, gender, and race/ethnicity) of the individual were collected. No protected health information was collected or recorded. The Institutional Review Board reviewed procedures and approval was obtained.

Data were collected and reviewed from admissions that took place from March 13, 2020 to January 1, 2021. Investigators analyzed data to determine the percentage of child and adolescent psychiatric inpatient admissions related to COVID-19.

Results

As shown in [Figure 1](#), there was an overall decrease in the total admissions to the CAPIU during the COVID-19 pandemic (March 13, 2020–January 1, 2021; $n = 340$) in comparison to the same relative time period in 2019 (March 13, 2019–January 1, 2020; $n = 358$). A total of 340 adolescents between the ages of 12 and 18 years were admitted to CAPIU from March 13, 2020 to January 1, 2021. Of these admissions, 53.24% ($n = 181$) of admissions were associated with psychiatric crises related to COVID-19. Percentages by month are shown in [Figure 2](#).

The majority of adolescents admitted for psychiatric crises related to COVID-19 were Caucasian ($n = 127$, 70.17%) and identified as female ($n = 113$, 62.43%). The average age of these individuals was 15 years old. Further demographic data are demonstrated in [Figures 3](#) and [4](#).

In this retrospective study, the electronic medical records of 340 adolescents admitted to the CAPIU between March 13, 2020 and January 1, 2021 were reviewed to determine if COVID-19-related factors contributed to the psychiatric crises that preceded admission. Admission and discharge notes were examined for keywords related to COVID-19. It was determined that 53.24% of admissions during this time were associated with COVID-19-related factors. COVID-19-related

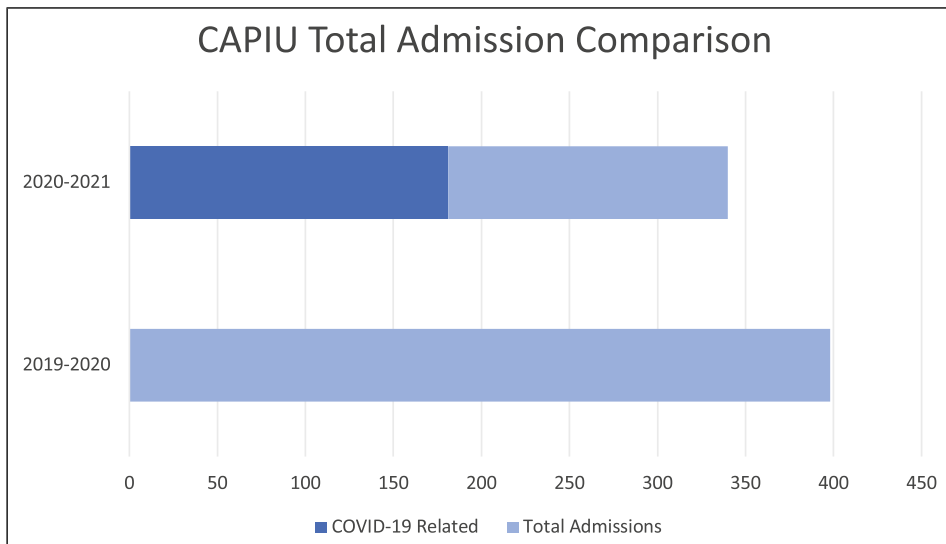


Figure 1. Child and adolescent inpatient psychiatric unit admission comparisons 2019-2020 and 2020-2021.

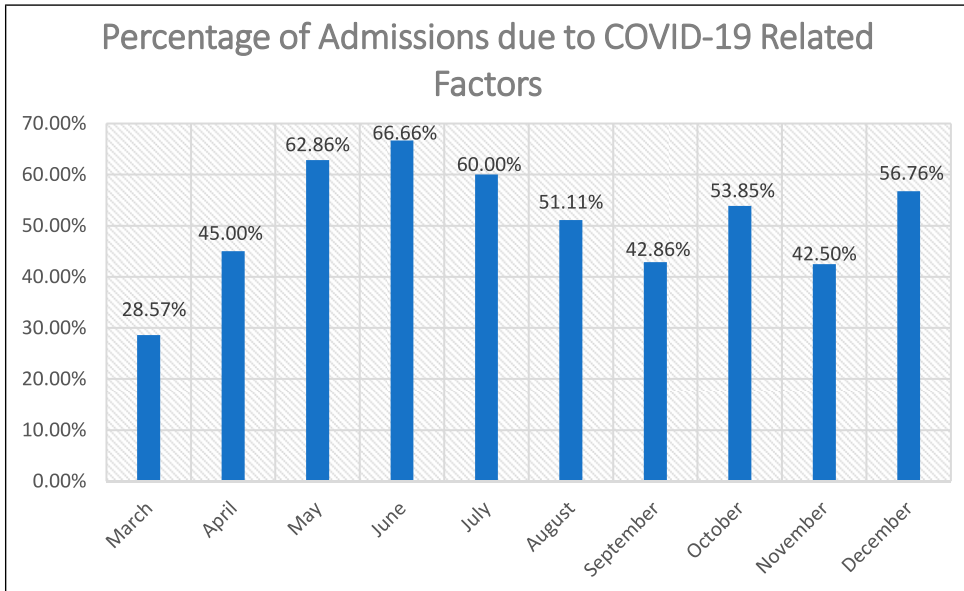


Figure 2. Percentage of admissions due to Covid-19 related factors per month.

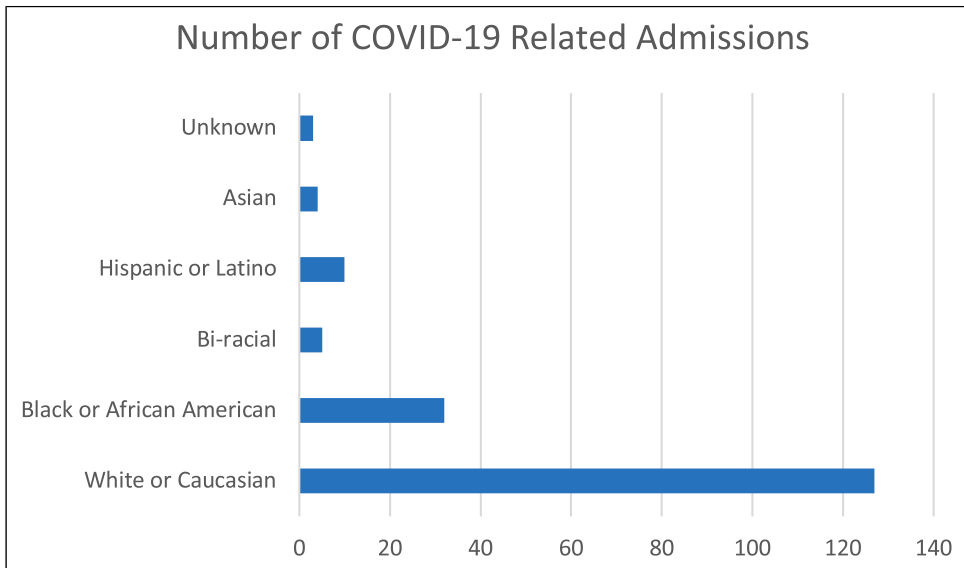


Figure 3. Covid-19 related admissions by racial/ethnic identify.

admissions appeared to be more prevalent during the summer months and were more common in adolescents who identified as female. It is likely this pattern in admissions occurred as there was more information present on COVID-19 by the summer months and the positive rates in New York state steadily declined throughout the summer (CDC, 2021). Additionally, as adolescents were not

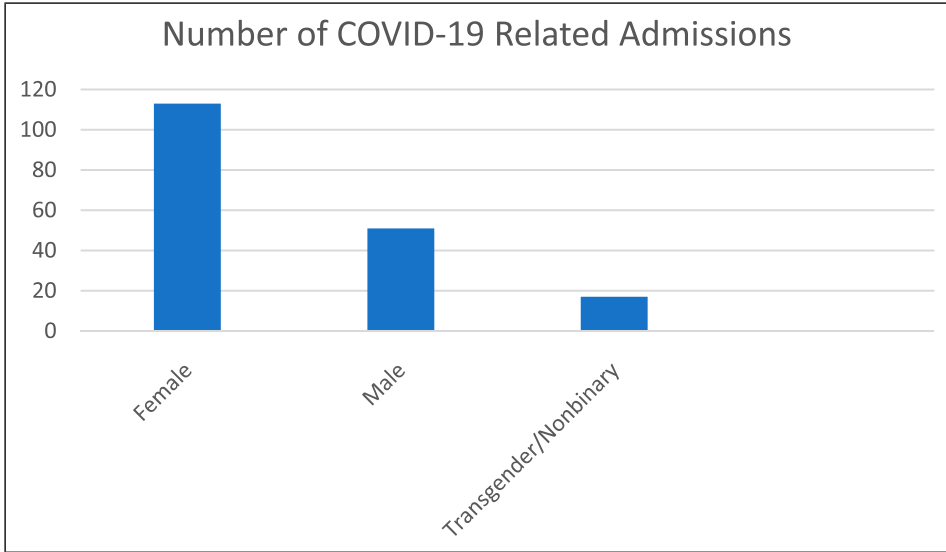


Figure 4. Covid-19 related admissions by gender identity.

in school during these months and many summer activities were canceled, it is possible the lack of structure increased psychological crises. As many areas were also still in “Lock-down” or following community mitigation measures at this time, adolescents may have been forced to remain in their home or in constant, close quarters with family members which may have exacerbated or contributed to mental health difficulties (Lee, 2020; Singh et al., 2020).

About half of all psychiatric crises preceding CAPIU admissions were related to COVID-19. This underscores the significance of the psychological impact of COVID-19-related stressors on adolescent’s mental health. Should another wave of the pandemic occur, or another future epidemic arise, the community should consider these factors and actively take steps to mitigate these stressors. Information should be widely disseminated that includes parental tips for talking about the global pandemic with their adolescents and strategies for coping with the resulting changes and uncertainties. Additionally, information and support should be provided on how to successfully navigate remote learning, daily life, social distancing, and managing adolescent’s mental health needs while community mitigation measures are in order.

It is important during these times that regular therapeutic and psychiatric treatment, as well as crisis intervention services, continue to be available. Psychological services delivered through Telehealth should continue to be a primary source of care when social distancing restrictions are in place. However, it should be considered that not all families have access to the technological means for these services and some homes may not be safe environment for adolescents to engage in these services.

Although there appears to an overall decline in the use of emergency psychiatric services throughout the global pandemic, it is evident that the mental health needs of adolescents had increased. As such, as the positive rate of COVID-19 cases continues to decrease across the country, adolescent inpatient units should be prepared for a potential surge in admissions. Inpatient units should also be equipped to effectively address and manage COVID-19-related stressors and provide information to families on managing these stressors in the home.

Possible limitations of this study should be acknowledged. As there does not exist a universal clinical interview script to assess individuals upon arrival at CPEP, it is not known whether all individuals were asked about the impact of COVID-19 on their presentation or if the provider chose to report this in their notes. Therefore, information about the impact of COVID-19 on the individual's presentation may have relied on the spontaneous disclosure of that adolescent or family. Additionally, the majority of adolescents admitted to the inpatient unit during the data collection period were white/Caucasian. It is important to acknowledge that this may have an impact on individual's and family's health-seeking behaviors and access to services and may limit the generalizability of this data.

Future directions

Although research on the psychiatric impact of COVID-19 is beginning to emerge, the world continues to be in the midst of this global pandemic. The true psychosocial impacts of the pandemic are not yet able to be assessed and long-term effects are still unknown. Future research should continue to assess the psychological ramifications of COVID-19 on adolescents. As this study collected limited demographic details and data points, future research should include additional variables, such as family demographics, school attendance, previous mental health history, access to resources, etc. to determine whether these factors impact COVID-19-related psychiatric admissions. It would also be important to further assess the cause of the decline in utilization of psychiatric emergency services and inpatient levels of care as these decreased despite an increase in mental health needs. Addressing these barriers may allow adolescents to receive adequate care that meets their needs and reduces the potential long-term psychological impacts of the global pandemic.

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References

- Abbas, M. J., Kronenberg, G., McBride, M., Chari, D., Alam, F., Mukaetova-Ladinska, E., Al-Uzri, M., & Brugha, T. (2020). The early impact of the COVID-19 pandemic on acute care mental health services. *Psychiatric Services, 72*(3) 242-246.
- Cheng, S. K. W., Wong, C. W., Tsang, J., & Wong, K. C. (2004). Psychological distress and negative appraisals in survivors of severe acute respiratory syndrome (SARS). *Psychological Medicine, 34*(7), 1187-1195.
- Choi, K. R., Martinez-Hollingsworth, A., Mead, M., & Dappolonia, M. S. (2020). Adolescent psychiatric emergencies precipitated by the COVID-19 pandemic. *Journal of Psychosocial Nursing and Mental Health Services, 9*, 1-5.
- Clemens, V., Deschamps, P., Fegert, J. M., Anagnostopoulos, D., Bailey, S., Doyle, M., Eliez, S., Hansen, A. S., Hebebrand, J., Hillegers, M., Jacobs, B., Karwautz, A., Kiss, E., Kotsis, K., Kumperscak, H. G., Pejovic, M.,

- Christensen, A. M. R., Raynaud, J.-P., Westerinen, H., & Visnapuu-Bernadt, P. (2020). Potential effects of “social” distancing measures and school lockdown on child and adolescent mental health. *European Child Adolescent Psychiatry*, 29, 739-742. <https://doi.org/10.1007/s00787-020-01549-w>
- Clerici, M., Durbano, F., Spinogatti, F., Vita, A., de Girolamo, G., & Micciolo, R. (2020). Psychiatric hospitalization rates in Italy before and during COVID-19: Did they change? An analysis of register data. *Irish Journal of Psychological Medicine*, 37(4), 283-290. <https://doi.org/10.1017/ipm.2020.29>
- Czeisler, M. É., Lane, R. I., Petrosky, E., Wiley, J. F., Christensen, A., Njai, R., Weaver, M. D., Robbins, R., Facer-Childs, E. R., Barger, L. K., Czeisler, C. A., Howard, M. E., & Rajaratnam, S. M. W. (2020). Mental health, substance use, and suicidal ideation during the COVID-19 pandemic—United States, June 24–30, 2020. *Morbidity and Mortality Weekly Report*, 69(32), 1049-1057.
- de Miranda, D. M., da Silva Athanasio, B., de Sena Oliveira, A. C., & Silva, A. C. S. (2020). How is COVID-19 pandemic impacting mental health of children and adolescents? *International Journal of Disaster Risk Reduction*, 51, 101845.
- Ferrando, S. J., Klepacz, L., Lynch, S., Shahar, S., Dornbush, R., Smiley, A., Miller, A., Tavakkoli, M., Regan, J., & Bartell, A. (2020). Psychiatric emergencies during the height of the COVID-19 pandemic in the suburban New York City area. *Journal of Psychiatric Research*, 136, 552-559.
- Gonçalves-Pinho, M., Mota, P., Ribeiro, J., Macedo, S., & Freitas, A. (2020). The impact of COVID-19 pandemic on psychiatric emergency department visits—a descriptive study. *Psychiatric Quarterly*, 92(2), 621-631.
- Hill, R. M., Rufino, K., Kurian, S., Saxena, J., Saxena, K., & Williams, L. (2021). Suicide ideation and attempts in a pediatric emergency department before and during COVID-19. *Pediatrics*, 147(3), e2020029280.
- Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., Ballard, C., Christensen, H., Silver, R. C., Everall, I., Ford, T., John, A., Kabir, T., King, K., Madan, I., Michie, S., Przybylski, A. K., Shafran, R., Sweeney, A., ... Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science. *The Lancet Psychiatry*, 7(6), 547-560.
- Hoyer, C., Ebert, A., Szabo, K., Platten, M., Meyer-Lindenberg, A., & Kranaster, L. (2020). Decreased utilization of mental health emergency service during the COVID-19 pandemic. *European Archives of Psychiatry and Clinical Neuroscience*, 271, 377-379. <https://doi.org/10.1007/s00406-020-01151-w>
- Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet Child & Adolescent Health*, 4(6), 421.
- Leeb, R. T., Bitsko, R. H., Radhakrishnan, L., Martinez, P., Njai, R., & Holland, K. M. (2020). Mental health-related emergency department visits among children aged < 18 years during the COVID-19 pandemic—United States, January 1–October 17, 2020. *Morbidity and Mortality Weekly Report*, 69(45), 1675-1680.
- Lee, A. T., Mo, F. Y., & Lam, L. C. (2020). Higher psychogeriatric admissions in COVID-19 than in severe acute respiratory syndrome. *International Journal of Geriatric Psychiatry*, 35(12), 1449-1457.
- Liu, J. J., Bao, Y., Huang, X., Shi, J., & Lu, L. (2020). Mental health considerations for children quarantined because of COVID-19. *Lancet Child Adolescent Health*, 4(5), 347-349. [https://doi.org/10.1016/S2352-4642\(20\)30096-1](https://doi.org/10.1016/S2352-4642(20)30096-1)
- Noguchi, Y. (2020). *Flood of calls and texts to crisis hotlines reflects Americans' rising anxiety*. NPR. <https://www.npr.org/sections/health-shots/2020/05/04/847841791/flood-of-calls-and-texts-to-crisis-hotlines-reflects-americans-rising-anxiety>.
- Rettie, H., & Daniels, J. (2020). Coping and tolerance of uncertainty: Predictors and mediators of mental health during the COVID-19 pandemic. *American Psychologist*, 76(3), 427-437.
- Shen, K., Yang, Y., Wang, T., Zhao, D., Jiang, Y., Jin, R., Zheng, Y., Xu, B., Xie, Z., Lin, L., Shang, Y., Lu, X., Shu, S., Bai, Y., Deng, J., Lu, M., Ye, L., Wang, X., Wang, Y., Gao, L., ... Global Pediatric Pulmonology Alliance. (2020). Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: Experts' consensus statement. *World Journal of Pediatrics*, 16(3), 223-231.

- Shrestha, D.B., Thapa, B.B., Katuwal, N., Shrestha, B., Pant, C., Basnet, B., Mandal, P., Gurung, A., Agrawal, A., & Rouniyar, R. (2020). Psychological distress in Nepalese residents during COVID-19 pandemic: A community level survey. *BMC Psychiatry* 20, 491 <https://doi.org/10.1186/s12888-020-02904-6>
- Singh, S., Roy, D., Sinha, K., Parveen, S., Sharma, G., & Joshi, G. (2020). Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations. *Psychiatry Research*, 293, 113429. <https://doi.org/10.1016/j.psychres.2020.113429>
- Sprang, G., & Silman, M. (2013). Posttraumatic stress disorder in parents and youth after health-related disasters. *Disaster Medicine and Public Health Preparedness*, 7(1), 105-110.
- Thakur, K., Kumar, N., & Sharma, N. (2020). Effect of the pandemic and lockdown on mental health of children. *Indian Journal of Pediatrics*, 87(7), 552. <https://doi.org/10.1007/s12098-020-03308-w>
- The Centers for Disease Control and Prevention. (2021). *Trends in number of COVID-19 cases and deaths in the US reported to CDC, State/Territory*. https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases
- Thomas, E. (2020). *Coronavirus: Impact on young people with mental health needs*. Young Minds.
- Wang, H., Xia, Q., Xiong, Z., Li, Z., Xiang, W., Yuan, Y., Liu, Y., & Li, Z. (2020). The psychological distress and coping styles in the early stages of the 2019 coronavirus disease (COVID-19) epidemic in the general mainland Chinese population: A web-based survey. *PLoS ONE*, 15(5), e0233410. <https://doi.org/10.1371/journal.pone.0233410>