



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

## Patterns of Youth Inpatient Psychiatric Admissions Before and After the Onset of the COVID-19 Pandemic



### To the Editor:

To slow the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus causing 2019 novel coronavirus disease (COVID-19), many state authorities enforced extreme social distancing measures, such as closing schools, implementing online instruction, canceling major events, and limiting social contact outside families. Such measures have promoted safety but also have severely disrupted the lives of children of all ages. Many young people have missed seminal milestones; have struggled with the challenges of virtual schooling; and have isolated at home with their families, which has eroded opportunities for peer social support, relaxation, and enjoyment. While the consequences of COVID-19 on mental health are still unfolding, the psychological toll of these prolonged social distancing measures in combination with economic hardships and increased parental stress has led to worldwide reports of increased rates of mental health problems,<sup>1,2</sup> trauma, abuse,<sup>3,4</sup> and predicted increases in suicide<sup>5</sup> in children and adolescents.

To begin to understand how COVID-19 may have affected mental health and help-seeking behaviors of minors, the authors examined patterns of admissions of children and adolescents to an acute academic psychiatric hospital in a major metropolitan area. Two time periods were compared: the COVID-19 period (March 11 to August 31, 2020) and the same time period 1 year previously (March 11 to August 31, 2019). March 11 was selected as the start of the pandemic because it was the day the mayor declared a local state of disaster owing to a public health emergency; residents were strongly encouraged to shelter in place and avoid crowded areas and places where people may be ill. Differences in age, sex, number of psychiatric hospitalizations, suicidality, history of abuse, length of admission, and primary diagnoses at discharge were analyzed retrospectively from hospital records. Given the myriad possible diagnoses, the diagnoses were clustered and analyzed based on the broad diagnostic categories of *DSM-5*.

The psychiatric hospital provides a combination of pharmacotherapy, psychotherapy, and supportive care aimed at stabilization of acute psychiatric conditions. The acute child and adolescent unit has a maximum capacity of 21 patients (10 double-occupancy rooms and 1 single-occupancy room). Patients range in age from 4 to 17 years. There are no exclusionary diagnostic criteria; however, patients must be medically stable before they are

admitted to the hospital. The treatment team comprises 2 child psychiatrists (C.P.Z.), 1 child psychologist (A.M.U.), 1 child psychiatry fellow, 1 psychiatry resident, 1 psychology intern, 2–3 nurses, 3 psychiatric nurse technicians, and 2 social workers. During the pandemic, the unit capacity was not decreased, and no limitations were placed on patient age or admission diagnosis. Staffing was based on the number of patients on the unit, and there was no shortage of staff on the unit.

The total sample consisted of 516 patients ranging in age from 4 to 17 years. The majority of patients were 14 years old, female (57%), Hispanic/Latino (38%), uninsured (90%), and endorsed “high” risk for suicide (45%). Given the skewness of data, differences between the time periods were analyzed using Mann-Whitney *U* and Pearson  $\chi^2$  tests.

Results indicated a 41% reduction in the number of young people presenting to the hospital as self-referrals and a 36.5% reduction in the number of patients transferred from other hospitals, which accounted for an overall 40% reduction in admissions during the COVID-19 period. When comparing the 2 cohorts, significant differences were found for age ( $U = 27861.5$ ,  $p = .041$ ), length of stay ( $U = 24459$ ,  $p = .000$ ), and substance use disorders ( $\chi^2_1 = 11.22$ ,  $p = .001$ ). No differences were found for sex, number of previous hospital admissions, suicidality, history of abuse, or any other diagnoses. A comparison of the 2 cohorts is presented in Table 1.

As the COVID-19 pandemic continues, mental health professionals are discovering the psychological toll of COVID-19 social distancing measures on young people. While significantly fewer minors presented or were admitted to the hospital during the pandemic, children and adolescents who were admitted stayed in the hospital approximately a day and a half longer; this was possibly due to the adjustment of professionals to temporary telehealth procedures or due to the reduced availability of step-down programs and other outpatient services necessary for discharge. While patients in the COVID-19 period were a few months older, they did not differ markedly from their peers in the control period. Depressive and trauma-related disorders were the most prevalent diagnostic categories in both samples. The only diagnostic difference found between samples was the high prevalence of substance use disorders in the COVID-19 cohort, suggesting patients were nearly twice as likely to use substances during the pandemic. One explanation may be minors were more likely to use substances to cope with stress, anxiety, and depression because they could not access other coping skills (eg, spending time with friends, which violated social distancing requirements). This result concurs with published reports of adults.<sup>6</sup> The lack of

**TABLE 1** Comparison of Demographic Variables, Hospital Admission Variables, and Discharge Diagnoses in Patients From COVID-19 Period and Control Period

|  | <b>COVID-19 period<br/>March 11–<br/>August 31, 2020<br/>(n = 193)</b> | <b>Control period<br/>March 11–<br/>August 31, 2019<br/>(n = 323)</b> |
|--|--|---|
| Number of self-referrals presenting to hospital            | 194  | 329   |
| Number of patients admitted to hospital                    | 193  | 323   |
| Number of self-referrals admitted to hospital              | 68   | 126   |
| Number of transfer patients admitted to hospital           | 125  | 197   |
| Age, y, mean (SD)  | 14.60 (2.21)*  | 14.09 (2.57)*   |
| Sex, female  | 111 (58%)  | 184 (57%)   |
| Number of previous psychiatric hospitalizations, mean (SD) | 1.34 (0.67)  | 1.37 (0.67)   |
| <b>Suicidality, mean (SD)</b>                              |  |   |
| Suicidal ideation (0–5)                                    | 2.10 (2.00)  | 2.31 (2.01)   |
| Suicidal behavior (0–4)                                    | 1.32 (1.23)  | 1.34 (1.27)   |
| History of abuse, (%)                                      | 69 (36.5)  | 118 (35.8)  |
| Length of hospital stay, days, mean (SD)                   | 7.73 (5.78)*   | 6.26 (4.74)*  |
| <b>Primary discharge diagnoses</b>                         |  |   |
| Schizophrenia spectrum and other psychotic disorders (%)   | 20 (10.4)  | 41 (12.7)   |
| Bipolar disorders (%)                                      | 9 (4.7)  | 22 (6.8)  |
| Depressive disorders (%)                                   | 89 (46.1)  | 138 (42.7)  |
| Anxiety disorders (%)                                      | 9 (4.7)  | 9 (2.8)   |
| Obsessive-compulsive disorders, (%)                        | 2 (1.0)  | 2 (0.6)   |
| Trauma- and stressor-related disorders, (%)                | 50 (25.9)  | 91 (28.2)   |
| Gender dysphoria, (%)                                      | 3 (1.6)  | 2 (0.6)   |
| Disruptive, impulse-control, and conduct disorders, (%)    | 32 (16.6)  | 55 (17.0)   |
| SUDs, (%)  | 58 (30.1)*   | 56 (17.4)*  |
| Neurodevelopmental disorders, (%)                          | 45 (23.3)  | 80 (24.8)   |

Note: SUD = substance abuse disorders.

\* $p < .05$ .

differences between the 2 cohorts may also be related to the high acuity of the patient population regularly served by the hospital. Regardless of the time period, the majority of patients are strained by low socioeconomic

backgrounds, adverse life events, and/or involvement with police and protective services.

While few differences were found between patients in an acute psychiatric hospital, further research is needed to recognize how COVID-19 has influenced the mental health of young people. As this report analyzes only patterns of hospital admissions at the beginning of the health crisis in the United States, the challenging and constantly changing nature of the pandemic may yield different patterns of admission if the fall and winter months are examined too. Thus, patterns of mental health service use across the entire pandemic and in different practice settings (eg, private psychiatric hospitals, schools, and outpatient clinics) need to be studied. If the increase of substance use disorders is a generalized and persistent finding, clinical practice and public health policies should be developed to address this problem.

Ana M. Ugueto, PhD, ABPP  
Cristian P. Zeni, MD, PhD

Accepted February 9, 2021.

Drs. Ugueto and Zeni are with The University of Texas Health Science Center at Houston (UTHealth) and McGovern Medical School, Houston, Texas.

The authors have reported no funding for this work.

The research was performed with permission from the Committee for the Protection of Human Subjects at UTHealth McGovern Medical School, February 4, 2020.

Dr. Zeni served as the statistical expert for this research.

Author Contributions

Conceptualization: Ugueto, Zeni

Formal analysis: Ugueto, Zeni

Investigation: Ugueto, Zeni

Methodology: Ugueto, Zeni

Writing – original draft: Ugueto, Zeni

Writing – review and editing: Ugueto, Zeni

ORCID

Ana M. Ugueto, PhD, ABPP: <https://orcid.org/0000-0001-7987-9123>

Cristian P. Zeni, MD, PhD: <https://orcid.org/0000-0001-9810-3929>

The authors wish to thank the Management Information Systems team at Harris County Psychiatric Center for their help gathering the data from medical records and the clinical staff on 1E at Harris County Psychiatric Center for the excellent care provided to patients.

Disclosure: Drs. Ugueto and Zeni have reported no biomedical financial interests or potential conflicts of interest.

Correspondence to Ana M. Ugueto, PhD, ABPP, 2800 S. MacGregor Way, HCPC 3A25, Houston, TX 77021; e-mail: [ana.ugueto@uth.tmc.edu](mailto:ana.ugueto@uth.tmc.edu)

0890-8567/\$36.00/©2021 American Academy of Child and Adolescent Psychiatry

<https://doi.org/10.1016/j.jaac.2021.02.006>

## REFERENCES

- Goldstein E, Wen H, Miller BF. Coronavirus disease 2019 (COVID-19) and mental health for children and adolescents. *JAMA Pediatr.* 2020;174:819-820.
- Fegert JM, Vitiello B, Plener PL, Clemens V. Challenges and burden of the coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: A narrative review to highlight clinical and research needs in the acute phase and the long term return to normality. *Child Adolesc Psychiatry Ment Health.* 2020;14:20.

3. Kuehn BM. Surge in child abuse, harm during COVID-19 pandemic reported. *JAMA*. 2020;324:621.
4. Lawson M, Piel MH, Simon M. Child maltreatment during the COVID-19 pandemic: Consequences of parental job loss on psychological and physical abuse towards children. *Child Abuse Negl*. 2020;110(Pt 2):104709.
5. Szyk HS, Berk M, Peralta AO, Miranda R. COVID-19 takes adolescent suicide prevention to less charted territory. *J Adolesc Health*. 2020;67:161-163.
6. Clay JM, Parker MO. Alcohol use and misuse during the COVID-19 pandemic: A potential public health crisis? *Lancet Public Health*. 2020;5:e259.

## COVID-19 and Mental Health Care Delivery: A Digital Divide Exists for Youth With Inadequate Access to the Internet



### To the Editor:

**A**lthough recent policy changes during the coronavirus disease 2019 (COVID-19) pandemic have minimized the spread of the disease by allowing health care providers to deliver care via telehealth transmission,<sup>1</sup> this has resulted in gaps in access to telehealth for people who lack reliable (or any) internet services and/or computers. While a large majority of youth in the United States have internet access, about 14% of youths ages 6–17 live in homes without internet, and 17% of youths ages 3–18 live in homes without computers; these percentages translate to approximately 11 million youths without access to the internet.<sup>2</sup> Even with the 91% of youths who have access to smartphones, video interruption or poor audio/video can occur owing to lack of broadband internet and/or inadequate cellular service.<sup>3</sup> Failing to consider the needs of subgroups of youth without reliable access to the internet marginalizes them—both inconspicuously and intensely—subsequently widening pediatric mental health disparities. Youth at risk for disparities in mental health care service delivery live in homes without computers, lack broadband access, and/or live in low-income and rural areas.

Disparities in access to mental health care are further widened when ethnic and racially diverse groups are considered in terms of delivering interventions. These groups not only are more likely to experience poor mental health<sup>4</sup> but also are more likely to receive poorer quality of care when treated.<sup>5</sup> Longitudinal studies have indicated multiple social risk factors involving children and adolescents with lower socioeconomic status as more likely to report higher rates of unmet mental health needs and negative consequences (eg, social deprivation) that can profoundly affect their development. Further, poor audio and video quality can interfere with the communication and alliance building between health care providers and their patients.

Despite the fact that much of mental health care may continue to be delivered via telehealth owing to COVID-19 restrictions, data are sparse regarding the effectiveness of telehealth and other online interventions for treatment of mental health conditions. For youth who lack access, there appears to be no research available regarding the development of innovative ways to provide mental health care to young minorities without internet access in a time when telehealth is the preferred access venue for many young people.

Research is thus urgently needed that takes into consideration the long-term effects of telehealth services for youth, particularly youth from disadvantaged backgrounds. Black patients have historically reported being less satisfied with telehealth services, they are less likely to use telehealth than their White peers,<sup>6,7</sup> and they are more likely to express concerns related to the physical absence of their clinicians—justifiable apprehensions given the historical experiences the Black community has had with the health care system. Pilot studies should therefore consider patients' barriers to telehealth use and develop culturally sensitive interventions to address them.

Employing and training community health care workers (CHWs) could enhance cultural sensitivity and address social determinants of health that create barriers to care access for children and adolescents without reliable (or any) internet access. CHWs are trusted by the communities they serve and thus play an essential role in improving access. They do not require cultural competency training, as they share a similar lived experience as others in their communities. For this reason, CHWs typically have great success in helping their communities overcome social barriers by acting as bridges to care, and they have been integral during the pandemic in assisting people without telehealth access, arranging medication delivery and developing guides for helping individuals with limited English proficiency navigate telehealth visits.<sup>8</sup> To close the gap for youth without reliable (or any) internet access, organizations should consider employing CHWs to assist youth in getting connected to the mental health services they need.

Finally, to achieve favorable outcomes, a multifaceted approach is warranted that considers community initiatives, targeted research approaches, and targeted policy development. Mental health service users and their families must be empowered and fundamentally involved in their care within the health care system. Health care administrators and researchers must also consider how families may be disproportionately affected by lack of internet access owing to economic consequences of the COVID-19 pandemic, such as unemployment.