COVID-19 Impact on Pediatric Health: A survey of families in Wayne County, MI

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Abstract

Background. In response to the novel coronavirus disease (COVID-19), the state mandated “Stay At Home” order included closure of schools and public places and physical distancing measures. As a result, social interactions among children were significantly impaired and pediatric outpatient offices and vaccination rates declined. We sought to determine the impact of the COVID-19 pandemic on mental health as well as access to health care in our pediatric population in Wayne County, Michigan. Design/Methods. We conducted a survey through the Wayne County Public School Districts to elicit information regarding subjects’ access to pediatric health care as well as experiences pertinent to their child(ren)’s mental health. Results. Approximately 8500 surveys were sent to families and 278 responses were received. Responses revealed that 46% of children spent more time alone during the pandemic, 36.9% had changes in sleep, 25.6% had little pleasure in doing things, and 32.5% were unhappy or sad. 66.2% were able to make new visits during the pandemic, however, 20.1% missed their child’s doctors’ visits for reasons including clinic cancellations and fear of entering a healthcare setting. Conclusions. The results of this survey demonstrate significant mental health concerns among our pediatric population as approximately 1/3 of families reported changes in behavior or mental health. As school closures persist in response to the ongoing pandemic and social interactions remain limited, it is imperative that pediatricians screen for depression, behavioral problems and other mental health concerns and offer families help to identify appropriate community mental health resources.

Keywords

COVID-19, pediatric mental health, pandemic, social determinants of health, school

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Introduction

March 2020 marked the beginning of the novel coronavirus disease (COVID-19) global pandemic, which has resulted in over 158 million cases, and 3 million deaths worldwide. In the United States alone, more than 32 million cases and over 580 thousand deaths have been reported to date.¹ Many states issued “Stay at Home” orders, which included closure of public schools. These closures have had a profound impact on the health and wellbeing of both the adult and pediatric populations.² As a result, children have been far removed from social interaction; the drastic changes in their daily routine, separation from friends and relatives has had consequences on their emotional and mental health. In a systematic review of psychological burdens of quarantine, studies reported children experiencing increased frequency of difficulty concentrating, feelings of loneliness, irritability, restlessness, nervousness, and worry.³ Children who experience these feelings, particularly loneliness, are at increased risk for mental health conditions, as loneliness is linked to long term mental health problems including depression and anxiety up to 9 years later.⁴ In addition, many children received mental health services through school, and as a result of school closures, emergency departments across the country, as reported by the CDC, saw an increased proportion of children with mental health needs.⁵ According to the

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Household Pulse Survey by the US Census Bureau, young adults reported depressive disorders and/or anxiety in larger numbers than older adults. Mental health needs were exaggerated by families undergoing economic stresses, job losses, or illness and deaths due to COVID-19. These socioeconomic disturbances also allowed for increases in food insecurity. According to a survey with over 3000 respondents, families with job losses during the COVID-19 pandemic were at higher odds of facing food insecurity. In addition, the study reported a one-third increase in food insecurity and two-thirds of households eating less since the COVID-19 pandemic.

Needless to say, the pandemic has created a variety of stressors on mental health and should sound an alarm, especially since youth have been disproportionately affected by the ongoing, albeit necessary, lockdowns and school closures. It is thus crucial for providers and pediatricians to be aware of these effects and become proficient at performing appropriate screening and intervention. In order to shed light on the mental health toll and healthcare sequela of the pandemic in the state of Michigan, we collected data from Wayne County, which has had the largest number of cases in the state. Families in Wayne County, MI, were surveyed with questions focused on demographics, access to healthcare, mental health, and food insecurity.

### Methods

A 42 question cross-sectional survey was distributed to a convenience sample of parents/guardians of school-aged children in 2 Wayne County, Michigan school districts. The surveys elicited information regarding subjects’ access to pediatric health care and food resources, as well as experiences pertinent to their child(ren)’s mental health during the state-wide lockdown as a result of the COVID-19 pandemic. All school districts in Wayne County, Michigan were contacted, 2 districts agreed to participate—Crestwood School District and Lincoln Park School District. An online Google survey was created which included 42 multiple-choice and short-answer questions. The survey was offered both in English and in Arabic and was entirely voluntary and anonymous, no personal identification questions were collected. The survey was distributed by the school districts via email or text message to all parents and took approximately 15 minutes to complete. Distribution and collection of the survey took place between July 1 and August 31, 2020. The study was approved by the Michigan State University IRB.

### Results

Approximately 8500 surveys were sent to families and 278 responses were received. Participant demographics and clinical characteristics are represented in Table 1. One hundred sixty-seven (61%) of respondents identified as White/Caucasian, 53 (19%) as Hispanic, and 21 (8%) as African American. One hundred fifteen (42%) respondents were parents with children enrolled in the Crestwood School District, 145 (52%) were from the Lincoln Park School District. One hundred eighteen (42%) families lived in a household with 3 or more children, 101 (36%) families had 2 children, and 58 (21%) had only 1 child. The majority of families had children in elementary school (161; 58%), 96 (35%) had children in middle school and 111 (40%) had children

| Table 1. Demographics and Clinical Characteristics of Participants. |
|---------------------------------------------------------------|
| Characteristics | Value (n = 280) |
| Age of participant (in years) | |
| 18-29 | 19 (7) |
| 30-39 | 145 (52) |
| 40-49 | 89 (32) |
| 50-59 | 25 (9) |
| 60+ | 1 (0.4) |
| Race | |
| Caucasian/White | 167 (61) |
| Hispanic | 53 (19) |
| African American | 21 (8) |
| Asian | 5 (2) |
| Household size | |
| Two | 11 (4) |
| Three or more | 265 (96) |
| Number of children in the home | |
| One | 58 (21) |
| Two | 101 (36) |
| Three or more | 118 (42) |
| Grade level of children | |
| Daycare | 29 (11) |
| Pre-K | 40 (14) |
| Elementary | 200 (72) |
| Middle school | 96 (35) |
| High school | 111 (40) |
| Child in the house with special needs | 60 (22) |
| Household member that is immunocompromised | 88 (32) |
| Access to internet | 273 (98) |

Percentages may not equal 100 due to rounding.

*Percentages total greater than 100 since families have children in multiple grade levels.
in high school. Twenty-two percent of families identified having a child with special needs and 32% had a household member that was immunocompromised.

According to the US census the median income for families in the Crestwood School District (zip code 48127) is $49,750; median income for families in the Lincoln Park (zip code 48146) is $43,470. Ninety-eight percent of families reported having access to internet and 97% had access to a smart phone with voice and video capability.

Responses to mental health questions, represented on Table 2, revealed 46% of children spent more time alone during the pandemic, 37% had changes in sleep, 26% had little pleasure in doing things, and 33% were unhappy or sad. In regards to health care access, 98% of respondents reported that their child had a primary care doctor prior to the pandemic, 40% of respondents’ physicians offered telehealth visits and 66% were able to make new visits during the pandemic; however, 20% missed their child’s doctors’ visits for reasons including clinic cancellations and fear of entering a healthcare setting. With respect to food access, 31% of families reported worry over running out of money for food during this time, and 16% reported actually running out of food with no money to buy more. However, 74% reported knowledge of resources to obtain food and 84% reported that their child’s school provided a meal service.

Table 2. Healthcare Access and Pediatric Mental Health.

| Survey questions                                                                 | No. (%)     |
|----------------------------------------------------------------------------------|-------------|
| Does your child have a primary care doctor?                                      | 227 (98)    |
| Is your doctor’s office offering telehealth visits?                              | 112 (40)    |
| Have you been able to make a new doctor’s appointment for your child during the COVID-19 pandemic? | 186 (66)    |
| Has your child missed any scheduled doctor’s appointments during the COVID-19 pandemic? | 56 (20)     |
| Have you been able to make a new mental health appointment for your child during the COVID-19 pandemic? | 15 (6)      |
| Has your child missed any scheduled mental health appointments during the COVID-19 pandemic? | 18 (7)      |
| I have not been able to pick up my child’s prescription medications due to the COVID-19 pandemic? | 13 (5)      |
| Since COVID-19, my child has                                                     |             |
| Cried more often or has had more tantrums                                         | 64 (23)     |
| Spent more time alone                                                            | 126 (46)    |
| Had trouble falling asleep, staying asleep, or sleeping too much                  | 102 (37)    |
| Had little interest or pleasure in doing things                                   | 71 (25)     |
| Has seemed more unhappy                                                          | 89 (32)     |

Percentages may not equal 100 due to rounding.

Discussion

The results of our survey add to a growing body of literature that demonstrate worsening in mental health measures in children during the COVID-19 pandemic. Nearly half of parents surveyed reported increased isolation during the pandemic and over one-third reported changes in sleep and increased feelings of sadness. While it is reassuring that the majority of these families maintained access to healthcare, a significant number of families (one-fifth of those surveyed) reported missed appointments. This aligns with the previously reported decrease in pediatric vaccination rates during this time. The combined impact of social isolation and lack of routine visits with the pediatrician could make mental and behavioral health disorders increasingly difficult to diagnose and treat.

While social isolation alone has a negative effect on the mental health of children, the impact may be even more substantial for children with a pre-existing mental health or behavioral health condition. For these children, disruption in routine, diminished access to peer support, and the loss of resources available through the schools is even more detrimental. During the 2020 to 2021 academic year, return-to-school practices have varied greatly across the United States. As children become eligible for the COVID-19 vaccine, a return to normalcy in
the school setting may be on the horizon. Policy makers should take into account the negative impact of social isolation in children when considering safe return to full time in-person learning. It will also be critical that school administrators are prepared for the increased number of children who are suffering with mental health symptoms as they welcome them back to school.

The results of our study should be considered in the context of several limitations. First, while each public school district in Wayne County was invited to participate, only 2 elected to do so. Among schools that chose not to participate, the most common reason was the feeling among school administrators that with the transition to virtual schooling, families were inundated with emails and information and they did not wish to add to that burden with email requests to complete the survey. As a result of this, the respondents to the survey were predominantly white and of a relatively homogenous socioeconomic status which limits the generalizability of the results of the study. In addition, the survey had a low response rate. We did not have direct access to the email distribution list for the survey and the schools sent the survey to families only once via email or text message. Additionally, we do not have the ability to characterize the demographics of the non-responders and are unable to assess for nonresponse bias in the study. Finally, the mental health questions in the survey were addressed only to the parents and we did not include a questionnaire for the children to complete which may underrepresent the findings regarding the impact of the pandemic on mental health in children. While these limitations are important to consider, the findings are similar to other recently published survey studies.11

In conclusion, the findings of our survey provide further evidence that disruption in social interaction among children has a negative impact on pediatric mental health. It is imperative that pediatricians screen all children for signs of mental health disturbance and that as school administrators and policymakers plan for the upcoming academic year, that preparations are made to address a growing number of mental health concerns in children.

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All authors contributed to concept, data analysis, manuscript writing, and final proof editing.

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