

Analyzing the Impact of COVID-19 on the Mental Health of Children with and Without Disabilities

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ABSTRACT

This study uses data from the 2019 National Health Interview Survey to examine baseline rates of anxiety and depression among U.S. children with and without disabilities, and then leverages the same data from 2020 and 2021 to analyze the impact the COVID-19 pandemic had on those rates. The 2019 baseline data presents a concerning situation, with all groups reporting very high rates of anxiety and depression, all higher than national rates among U.S. adults. Children with disabilities experience particularly high rates of mental health issues, nearly 2-3 times as high as peers without disabilities. Breaking out the impact of the COVID-19 pandemic on children with disabilities versus without disabilities provides unique insights, since during the pandemic children without disabilities faced many of the physical and social constraints faced everyday by children with disabilities. Mental health issues did become significantly more prevalent during the pandemic for all groups, though, children with no disabilities experienced the biggest percentage increase given their lower starting point. Overall, this study demonstrates the significant effect that physical, social, and emotional factors have on the mental well-being of children in the United States. This is leading to a growing mental health crisis and highlights the importance of ensuring all communities, particularly those with disabilities or other limitations on physical and social activity, have access to adequate mental health treatment and support.

Introduction

Currently, almost 2 out of every 10 American children suffer from physical and/or cognitive disabilities.¹ The purpose of this study is to first examine the impact of having a disability on the mental wellbeing of children, and then the influence of the COVID-19 pandemic on the mental health of this population. I use data from the 2019, 2020 and 2021 National Health Interview Survey to collect rates of anxiety and depression of children with and without disabilities from the years before and after the start of the pandemic. The NHIS is an annual survey of U.S. adults that asks many questions about health behaviors. Respondents answer on behalf of themselves and their children (if applicable). The data allowed me to classify children based on whether they have a cognitive disability, a physical disability, or no disability, and compare rates of anxiety and depression for each group.

My results indicate that prior to the COVID-19 pandemic, children with physical disabilities reported the highest rates of both anxiety and depression, followed by those with cognitive disabilities and then children with no disabilities. For example, in 2019, almost 80% of children with physical disabilities had anxiety versus 66% of children with cognitive disabilities and around 37% of children without disabilities. However, the pandemic presented a particularly interesting situation where many children without disabilities were forced to face the physical and social limitations typically experienced by children with disabilities, and the effect of this change is clear when looking at the data during the COVID-19 pandemic. In 2020 and 2021, I found that the

¹ <https://www.cdc.gov/nchs/nhis/2019nhis.htm>

children with no disabilities reported the highest percent increase in diagnosed anxiety over the three-year period with a 25.4% increase, followed by those with cognitive disabilities with a 12.3% increase, and lastly those with physical disabilities who recorded a 5.3% increase. These trends also carried over to depression rates for the three groups, as children with no disabilities had the highest percent increase in diagnosed depression with a 31.9% increase, children with cognitive disabilities had the second highest with 21% and those with physical disabilities had the least with a 7.2% increase in depression. It is important to note that children with cognitive disabilities actually reported the highest point increase in diagnosed depression, with a 9.2 percentage point total change, but because their 2019 baseline data was substantially higher than those with no disabilities, the percent change in the average incidence was slightly lower.

The results in this paper highlight a growing mental health crisis for American children, particularly for children with disabilities. Policymakers, researchers, and educators must do more to combat the rise in mental health challenges faced by children in the United States.

Background

Disabilities among children in the United States is a serious and relevant issue that often does not get the attention it deserves. As of 2021, around 19% of all American children aged 3-17 were reported to have at least one disability, with the most common being a cognitive, or learning, impairment.²

This data on disability rates among American children contains a lot of variation depending on the type of disability, so it is important to specify the differences between the two forms of disabilities that I am using for my analysis in this paper. In summary, I use the term cognitive disability to refer to an intellectual or emotional disorder, such as autism, while a physical disability is a condition that limits the movement of body parts, like cerebral palsy. Data from the 2019 National Health Interview Survey indicates that 9.5% of U.S. children have a physical disability, 14.3% have a cognitive disability and approximately 5% have physical and cognitive disabilities and are in both groups.

Mental Health of Children with Disabilities (2019 Baseline Results)

One focus of this paper is understanding baseline differences in mental health outcomes for children with and without disabilities. In thinking about the pre-Covid mental health rates across the three groups in the study, I hypothesized that children with disabilities would experience worse mental health outcomes than children without disabilities, with the worst mental health challenges likely faced by those with physical disabilities. I reasoned that since happiness is often associated with face-to-face interaction, physical activity, and time spent outdoors, children with physical disabilities would report the worst rates because their impairments limit their ability to move, and therefore impact time spent outside the house and ability to participate in activities with other children.

The 2019 baseline data confirmed this prediction in terms of both anxiety and depression rates among the three groups. Those with physical disabilities reported the worst anxiety and depression rates, with 78.9% and 58.7% respectively, followed by children with cognitive disabilities, of which 66% reported diagnosed anxiety and 43.7% reported diagnosed depression. As expected, children without disabilities recorded the lowest rates of both anxiety and depression by a large margin, with 36.8% reporting diagnosed anxiety and 21.1% reporting diagnosed depression. Although these rates are lower than for children with disabilities, they still demonstrate that a large percentage of all U.S. children have mental health challenges.

² <https://www.cdc.gov/nchs/nhis/2021nhis.htm>

COVID-19 Pandemic and Mental Health

In addition to examining baseline differences in mental health outcomes, I was also interested in examining how the COVID-19 pandemic influenced these outcomes. In 2019, the novel COVID-19 virus was detected, and later in March of 2020 it was declared an official pandemic.³ The deadly virus spread through communities worldwide, and has now claimed approximately 7 million lives. While the physical risk of the pandemic has always been greatly stressed, its more subtle psychological impact is often ignored. COVID-19 resulted in worldwide quarantines and forced residents to remain confined to their homes for months at a time which would definitely be expected to impact psychological well-being. In addition to limiting time outside the home, the pandemic also resulted in fully virtual school for many children, which has been linked to decreases in focus and learning capacity, and therefore mental well-being.⁴

Due to the huge change in lifestyle for the general population, I expected that all children would see increases in rates of anxiety and depression from the pre-pandemic baseline. I reasoned that kids with cognitive and no disabilities, however, would see the largest increases in mental health issues during the pandemic since they experienced the greatest change from their baseline circumstances. I hypothesized that those with physical disabilities would see smaller increases because they already faced much more difficult pre-existing challenges in terms of spending time outside the home and because they had the worst baseline rates pre-pandemic for both anxiety and depression.

Data

In this study, I analyzed data collected from the National Health Interview Survey (NHIS). The survey is administered annually to around 87,500 Americans of all ages by the Centers for Disease Control and Prevention (CDC), and asks a wide range of health questions to the participants. The NHIS has been run since 1957, and I used the 2019, 2020, and 2021 versions of the dataset to test my hypotheses.

In order to use the survey data to examine the mental health impacts of the COVID-19 pandemic across kids within the three groups, I isolated the data responses for children, and then classified all of the responses to indicate if the child had a cognitive disability, physical disability or no disability at all. My grouping of different disabilities followed the definitions introduced earlier with a cognitive disability affecting cognitive, intellectual, or emotional functions and a physical disability impacting the ability to move. In order to classify children with physical disabilities, I used the Washington Group Short Set Composite Disabilities indicator from the survey.⁵ In order to classify children with cognitive disabilities, I examined responses across five questions: whether the child ever had ADHD, whether they ever had an intellectual disability, whether they ever had autism, whether they ever had a cognitive delay, or whether they ever had a learning disability.

Table 1. Rates of anxiety and depression among U.S. Children, 2019-2021 (Data used for figure 1 and 2).

	Anxiety			Depression		
	Physical disability	Cognitive disability	No disability	Physical disability	Cognitive disability	No disability
2019	79.8	66.0	36.8	58.7	43.7	21.1

³ <https://www.yalemedicine.org/conditions/covid-19#:~:text=What%20are%20the%20origins%20of,live%20animal%20market%20in%20Wuhan.>

⁴ <https://www.apa.org/news/apa/2020/online-learning-mental-health>

⁵ <https://www.washingtongroup-disability.com/question-sets/wg-short-set-on-functioning-wg-ss/>

2020	82.1	72.2	44.9	58.2	48.4	27.5
2021	84.0	74.1	46.1	62.9	52.9	27.9
2019-2021, Overall Change	4.2	8.1	9.3	4.2	9.2	6.7

Table 1 summarizes the data that I collected on rates of anxiety and depression from 2019-2021 across my three groups. Rates of anxiety and depression are disturbingly high for all groups, with the highest rates being among children with physical disabilities.

Table 2. Summary statistics table.

	Mean	Std Dev	Min	Max
Has physical disability	0.09	0.29	0.00	1.00
Has cognitive disability	0.14	0.35	0.00	1.00
Has no disability	0.81	0.39	0.00	1.00
Age	8.98	5.36	0.00	17.00
Male	0.51	0.50	0.00	1.00
Female	0.49	0.50	0.00	1.00
Other (gender)	0.00	0.02	0.00	1.00

Table 2 displays summary statistics for the 2019-version of the dataset. The average age of a child in the dataset was almost 9 years old and the data was almost split in half by gender, with about 51% being male children and about 49% being female. Across the sample, approximately 9% of children had a physical disability, 14% had a cognitive disability, and 81% had no disability.⁶ Out of the entire sample, 5.3% had both a physical and cognitive disability.

Results

In Figure 1, I graph rates of anxiety and depression across the three groups spanning 2019-2021. This analysis clearly shows the detrimental effect of the COVID-19 pandemic on the mental health of all children. All three groups in the study experienced significant increases in both medically diagnosed anxiety and depression over the three years analyzed.

Among those with physical disabilities more than 8 in 10 children suffered from anxiety post-pandemic, which was by far the highest overall rate. The data for kids with cognitive disabilities proved to be slightly lower, with 74.1% reporting anxiety. The rate of anxiety among children with no disabilities had the biggest increase, though the overall level was still the lowest across the three groups at 46.1%.

⁶ The percentage of each category in the sample size adds to over 100% because children with cognitive and physical disabilities were double counted for this study. Children with both cognitive and physical disabilities did experience slightly higher rates of anxiety and depression than those with only physical disabilities, though this did not significantly change the outcome of my analysis, so I decided not to break these children out as a separate group.

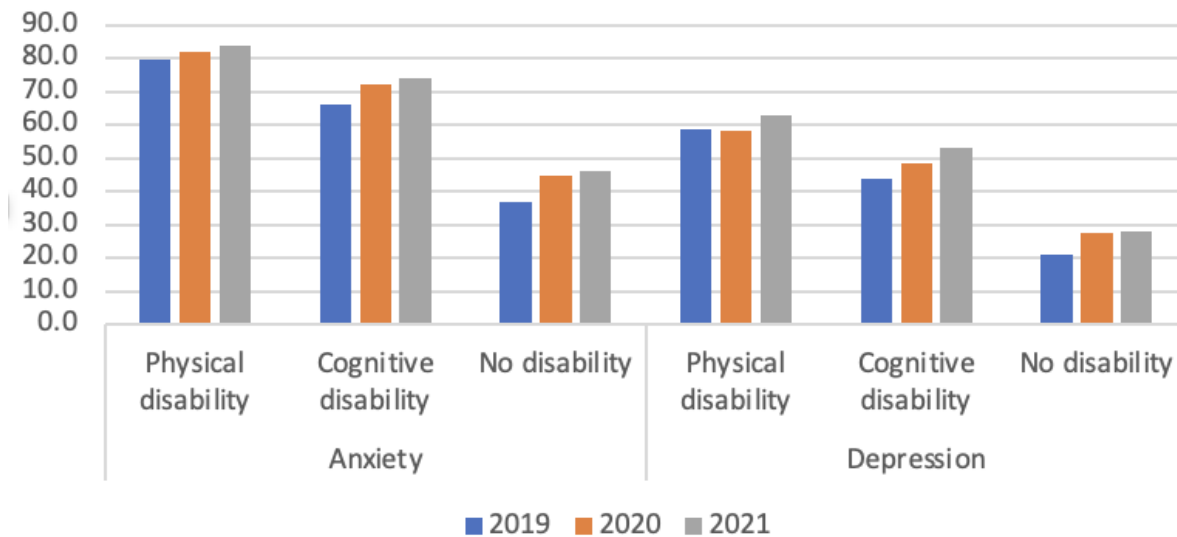


Figure 1. Rates of anxiety and depression across the three groups spanning 2019-2021 (Y axis is percentage of the corresponding population).

In Figure 2, I plot the percent change in rates of depression and anxiety across the three groups from 2019 to 2021. Figure 2 illustrates that some groups were disproportionately affected compared to others, as those with no disabilities experienced a dramatic 25.4% increase in rates of anxiety, which was more than double the next largest percentage increase. A result like this was somewhat expected, mainly because the COVID pandemic had the most dramatic impact on the lifestyle of children without disabilities versus their prior circumstances and they had the lowest baseline rates of anxiety to start with. Children with cognitive disabilities then followed, with an overall 12.3% increase in diagnosed anxiety during the pandemic and those with physical disabilities reported the lowest change, with a 5.3% increase.

This same trend also carried over for rates of depression, as those with no pre-existing disabilities reported the highest percent increase of almost 32%. That being said, children with cognitive disabilities were arguably still the most affected by the pandemic, as that group reported the greatest overall increase in penetration of depression diagnoses with a 9.2 point increase. For children with physical disabilities, the data show very concerning levels of depression, but a somewhat smaller impact from the pandemic as expected. Because the baseline rate of depression was so high and the pre-existing circumstances were fairly challenging, they recorded the lowest percentage change at 7.2%. The total prevalence of anxiety and depression during the pandemic for the group with physical disabilities was still extremely alarming at 84.0% for anxiety (nearly double the rate of the no disability group) and 62.9% for depression (over double the rate in the no disability group).

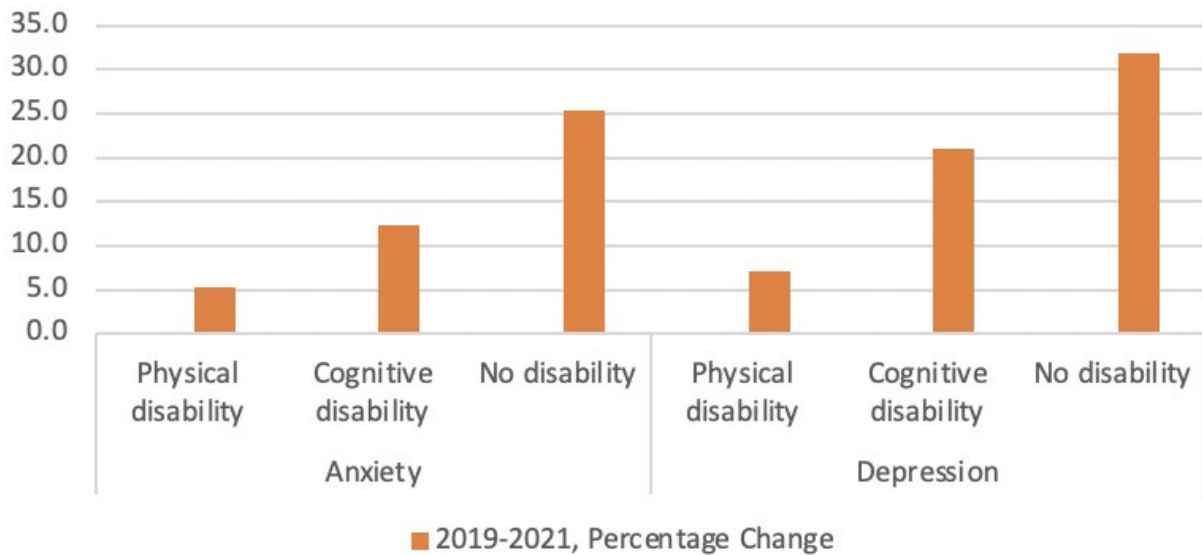


Figure 2. Percent change in rates of depression and anxiety across the three groups from 2019 to 2021 (Y axis is in percent)

Discussion

Looking back at the results from this study, it is clear the COVID-19 pandemic had a substantial negative impact on the mental wellbeing of children, especially children with no disabilities and cognitive disabilities. However, the data as a whole also highlights the concerning trend of extremely high rates of anxiety and depression among all children. For context, 7.1% of the adult population in the United States has been diagnosed with anxiety⁷, and children with no disabilities (who reported the smallest rates of anxiety across the three groups), still reported a number more than triple that national average. The data for depression for kids also proved higher than the national average for adults, with the children with no disabilities reporting the lowest rates at 27.9%, which still was nearly 10 percentage points higher than the 18.4% reported incidence of depression in the general population.

Perhaps most concerning though is the data on the mental wellbeing of children with physical disabilities. In 2021, 84% of kids with physical disabilities reported being diagnosed with anxiety, a number that is a whopping 12 times the rate of the general population. Additionally, 62.9% of children with physical disabilities reported depression after the COVID-19 pandemic, a figure more than three times that of the general population.

While the data portrays a dire situation, there are ways to help children suffering from mental health challenges. I think that federal, state, and local governments should increase resources for programs that are dedicated to the mental wellbeing of all children, but particularly those with physical disabilities. In addition, because children spend so much of their lives at school, I believe the education system will also need to play an important role in identifying mental health issues in children and providing support for helping to deal with them. It is crucial that schools are equipped with guidance counselors who are aware of the issues students are

⁷ <https://www.cnn.com/2023/06/15/health/depression-varies-by-state-cdc-report/index.html#:~:text=A%20new%20report%20published%20Thursday,to%2027.5%25%20in%20West%20Virginia.>

facing and are ready to assist students who need it. These counselors need to be trained in the unique and serious mental health issues faced by all children, but particularly those with disabilities.

Conclusion

Addressing the mental wellbeing of children, particularly those with disabilities, is an issue that needs to receive greater attention. In looking at the 2019 data from the NHIS survey, it is clear that U.S. children with both physical and cognitive disabilities suffer from disproportionately high rates of anxiety and depression when compared to those with no disability at all. This trend remained the same after the COVID-19 pandemic as well, with children with physical disabilities reporting anxiety and depression at a rate of around double their counterparts that do not have disabilities. That being said, it is also important to acknowledge that children with no disabilities experienced the highest increase in anxiety (and highest percentage increase in depression) during the pandemic, so mental health pressures are definitely not limited to children with disabilities.

Future research is needed to better understand the mental health issues facing children and to find new ways to improve mental well-being. For example, while my study examined the differences in mental health outcomes across children with and without disabilities, it would also be interesting to see how the COVID-19 pandemic influenced mental health outcomes across other demographic or socioeconomic variables such as gender, race, and income. Additional research could also test different interventions for improving mental health, particularly by creating new opportunities for physical activity and social interaction among young people. Doing so would help further illustrate the mental health challenges faced by different communities, and hopefully help educators, governments, and health professionals better address this serious issue.

Acknowledgments

I would like to thank my advisor for the valuable insight provided to me on this topic.

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