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Mental Health and Mental Health Treatment in New Jersey During the COVID-19 Pandemic

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Executive Summary

This report presents research that has identified the ways that mental health and mental health treatment has changed during the COVID-19 pandemic for New Jersey residents and how such changes compare to those observed nationally and worldwide. This study investigated this topic via three main methods: (1) analysis of the results of an original poll we designed and administered in March-April 2023 asking a sample of New Jersey residents to report their mental health and mental health treatment experiences during the COVID-19 pandemic, (2) analysis of publicly available datasets that contain New Jersey-specific information relevant to the study of mental health and mental health treatment that allow for comparisons between pre-pandemic and pandemic time periods and (3) a review of relevant published research.

The major findings of our research are presented in **Section 2** (“*Comparing the Mental Health of New Jersey Residents Before vs. During the Pandemic”)* and **Section 3** (“*Comparing Mental Health Care/Treatment of New Jersey Residents Before vs. During the Pandemic”)* of this report.

Key findings specific to New Jersey reported in Section 2 include:

- 37% of New Jersey residents who responded to our poll reported that the pandemic affected their mental health. 30% indicated that the pandemic caused their mental health to worsen whereas 7% indicated that their mental health improved during the pandemic. Self-reports that the pandemic affected their mental health were more common in younger individuals (compared to older individuals), females (compared to males), Democrats (compared to Republicans), and Mixed-Race individuals (compared to other race groups)
- Anxiety and depression were the most cited mental health disorders that worsened during the pandemic.
- Overall, the number of suicide deaths decreased in 2020 by 11%. However, there were a few specific groups who were observed to have a greater number of suicide deaths in 2020 compared to 2019. These

included Asian residents (9% increase), and residents aged 25-34 years (2% increase) and 65-84 years (11% increase).

- For those aged between 18-24 years (but not for those aged 25 years or older), self-reported rates of suicidal ideation and suicide attempts increased in 2021 relative to 2018/2019.
- 19% of New Jersey residents responding to our poll reported an increase in the amount of alcohol and/or recreational drugs they consumed during the pandemic relative to the amount they consumed prior to the pandemic. Of these individuals, 40% indicated that their elevated use of these substances persisted into 2023. Those aged between 30-39 years were the most common age group to report elevated use of alcohol and/or recreational drugs during the pandemic.
- The annual number of drug-related deaths increased in 2020 (by 5%) and 2021 (by 3%). However, this appears to be a continuation of a trend of annual increases in the number of drug deaths that began long before 2019. National data suggests that this increase in deaths was predominately (but not exclusively) related to the use of fentanyl.
- Reports of child abuse and neglect to child protective service agencies decreased in 2020 by 27% and in 2021 by 16%, but this appeared to be a continuation of a trend of annual decreases in the number of reported cases of child maltreatment that began prior to the pandemic. It is currently unclear whether such decreases reflect lower incidence rates of child maltreatment and/or lower rates of detecting and reporting such incidences.
- The number of hospital emergency room (ER) visits related to suspected child sexual abuse decreased in 2020 by 42%. In contrast, the number of such visits related to suspected child physical abuse increased in 2020 by 20% and the number of such visits related to child abandonment or neglect increased by 21% in 2020.
- Self-reported rates of depression in pregnant women increased in 2020 by 22%. This 2020 increase was primarily observed in women with less than a high school education (108% increase) and women whose highest level of education was a high school diploma (40% increase).

- Self-reported rates of postpartum depression in women who recently gave birth increased in 2020 by 18%. This 2020 increase was primarily observed for women with less than a high school education (133% increase).

Key findings specific to New Jersey reported in Section 3 include:

- The number of diagnoses for Trauma/Stress-Related Disorders increased in 2020 by 2%. However, this 2020 increase was strongest for those aged between 18-20 years (65% increase) and those identifying as an "Other" race (69% increase). 2020 increases in this diagnosis were observed for all race groups, varying from an increase of 14% (Whites) to 69% (Other Race)
- The number of diagnoses for anxiety disorders increased in 2020. This increase was strongest for those aged between 15-17 years (21% increase) and between 18-20 years (50% increase). 2020 increases in this diagnosis were observed for all race groups, varying from an increase of 8.5% (Whites) to 32% (Other Race).
- The number of diagnoses for Depressive Disorders increased in 2020. This increase was strongest for 15–17-year-olds (24% increase) and 18-20-year-olds (56% increase). 2020 increases in this diagnosis were observed for all race groups, varying from an increase of 1.4% (Whites) to 11% (Other Race).
- 21% of New Jersey residents reported that they felt the need to obtain mental health treatment during the pandemic regardless of whether they obtained it or not. Self-reported needs for treatment were more commonly reported by younger than older individuals. Of the individuals reporting a need for mental health treatment, 42% indicated that fear of the pandemic impacted their decision to seek treatment. Of these individuals, a little more than half indicated that the pandemic caused them to seek out treatment that they otherwise would not have sought out and a little less than half indicated that the pandemic prevented them from seeking treatment that they otherwise would have sought out.

- Depending on the source, anywhere from 9%-16% of residents indicated that they obtained mental health treatment during the pandemic. Counseling/therapy was the most cited form of mental health treatment obtained.
- Anywhere between 16%-21% of residents indicated that they were taking prescription drugs to treat a mental health problem.
- Younger individuals more commonly reported obtaining mental health treatment than older individuals. White individuals more commonly reported obtaining mental health treatment than racial minority groups.
- The use of telehealth forms of mental health treatment dramatically increased during the pandemic and its use remained elevated into 2022. Mental health treatment became an increasingly predominant form of treatment administered via telehealth, with 71% of all telehealth services being used to treat mental health in 2022 (compared to 37% in 2019). Anxiety, depression, and adjustment disorders were the most common mental health problems treated via telehealth services.
- In 2020, the number of New Jersey mental health facilities offering telehealth services increased by 250%, with 61% of such facilities offering telehealth treatment options in 2020 (compared to 9%-18% in pre-pandemic years).
- 72% of New Jersey residents who indicated that they obtained mental health treatment indicated that they obtained such treatment via telehealth services. Of these individuals, 70% indicated that the quality of telehealth treatment was equal to (42%) or better than (28%) in-person forms of treatment. 18% indicated that the quality of telehealth treatment was worse than in-person forms of treatment.
- Hospital emergency room visits resulting in a diagnosis of many mental health disorders decreased in 2020. The one exception to this is that the number of such visits related to attempted suicide increased in 2020 by 8%. This increase was primarily observed in individuals ranging in age from 25-74 years old (with the one exception being those aged between 45-54 years), with increases ranging from 27% (25-34-year-olds) to 36.4% (65-74-year-olds). Additionally, the number of females visiting ERs for

attempted suicide increased in 2020 by a greater degree than males (11% vs. 3% increase). Finally, increases in ER visits related to attempted suicide were observed for Black (20% increase) and Other race (20% increase) groups, but not for other race groups.

- In 2020, admissions to the state's four psychiatric hospitals decreased by 32%. Although the degree to which admissions decreased in 2020 was larger than the average annual change observed in pre-pandemic years, the 2020 reduction of admissions in these types of hospitals continued a broader historical trend of reductions in admissions into long-term inpatient and residential treatment facilities.
- The number of admissions into substance abuse treatment programs decreased in 2020 by 17%. The most common drugs individuals sought treatment for were heroin, alcohol, and marijuana. Males more commonly sought substance abuse treatment than females.
- Between September 2020 and April 2022, anywhere from 7%-11% of adult residents reported needing, but not obtaining, mental health treatment. If the survey results are representative of the New Jersey adult population, this equates to anywhere from 492,000 - 775,000 New Jersey adults having needed, but not obtaining, mental health treatment during this period.
- In 2020 and 2021, it is estimated that 60% of individuals needing substance abuse treatment did not obtain it. This compares to consistent rates of approximately 41% observed between 2016-2019.
- Shortages in the mental health care professional workforce have been reported. One survey of mental health care facilities indicated an approximate 31% vacancy rate for mental health care jobs in the state.
- K-12 state schools have been observed to have shortages in the number of school counselors, psychologists, and social workers. The number of students per each of these three types of school mental health treatment professionals are larger than ratios recommended by various national organizations. Further, 21% of New Jersey schools were observed to not have a school psychologist staffed on site.
- Such shortages have led to mental health practitioners in the state being overburdened. One survey of mental health care providers in the state indicated that 25% of facilities are not accepting new patients. Further, 60% indicated that they are accepting new patients, but such new patients are being placed on

wait lists resulting in treatment wait times varying between 3-10 weeks. Longer average wait times were observed for Northern New Jersey facilities than Southern New Jersey facilities.

In this report, we will present these findings in more detail and will compare the trends observed in New Jersey to those observed more broadly in the United States and worldwide. We will also place any changes observed in 2020 (relative to 2019) in the context of annual changes observed in years leading up to 2019 in order to differentiate changes that were unique to 2020 versus changes in 2020 that were a continuation of trends that began prior to the pandemic.

Section 1: Introduction

In December 2019, the COVID-19 virus was first detected in China and quickly spread across the world, resulting in a global pandemic[1]. The first confirmed case of the virus in the United States was detected in Washington state on January 20, 2020[2]. Shortly thereafter, on March 13, 2020, the United States federal government declared that the COVID-19 pandemic was a national emergency[3]. By the end of December 2021, there had been 53 million confirmed COVID-19 infections and 817,232 confirmed virus-caused deaths in the United States[4]. Between March and April 2020, most U.S. state governments enacted measures intended to slow the spread of the COVID-19 virus and to limit the number of deaths caused by it[5]. Common measures enacted by state governments included shutting down businesses deemed "non-essential" resulting in mass business closures and employment loss (either permanently or temporarily), issuing "stay-at-home" orders to the general population, shifting K-12 school and college/university education from in-person to remote instruction, prohibiting travel and mass social gatherings, requiring individuals to wear masks in public and, later into the pandemic, mandating COVID-19 vaccinations.

During the first year of the pandemic, New Jersey was impacted by the virus and disrupted due to the governmental measures enacted to contain it more than most, if not all, of the states in the nation. In 2020, 467,622 individuals were confirmed to have been infected by the virus, with an additional 788,485 confirmed

[1] **Source**: World Health Organization (2021). Listings of WHO's response to COVID-19. Accessed online at: https://www.who.int/news/item/29-06-2020-covidtimeline

[2] **Source**: Centers for Disease Control and Prevention, David J. Spencer CDC Museum and Smithsonian Institution (2023). CDC Museum COVID-19 Timeline. Accessed online at: https://www.cdc.gov/museum/timeline/covid19.html

[3] **Source**: National Archives and Records Administration Federal Register (2020). Proclamation 9994: Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID-19) Outbreak. Accessed online at: https://www.federalregister.gov/documents/2020/03/18/2020-05794/declaring-a-national-emergency-concerning-the-novel-coronavirus-disease-covid-19-outbreak

[4] **Source**: Mathieu, E., Ritchie, H., Rodes-Guirao, L., Appel, C., Gavrilov, D., Giattino, C., Hasell, J., Macdonald, B., Dattani, S., Beltekian, D., Ortiz-Ospina, E. & Roser, M. (2023). Coronavirus (COVID-19) Cases. Our World in Data. Accessed online at: https://ourworldindata.org/covid-cases

[5] **Source**: Ballotpedia (accessed 2023). States that issued lockdown and stay-at-home orders in response to the coronavirus (COVID-19) pandemic, 2020. Accessed online at: https://ballotpedia.org/States_that_issued_lockdown_and_stay-at-home_orders_in_response_to_the_coronavirus_(COVID-19)_pandemic,_2020

infections recorded in 2021[6]. In 2020, 16,497 individuals died in New Jersey due to the virus, which was the sixth highest total in the nation. However, when virus-caused deaths are evaluated in rates per 100,000 members of the population, New Jersey's virus death rate was 141.6, which was the largest among all states. New Jersey fared much better in 2021 with respect to these fatality measures: 8,423 people died due to the virus (17th most among states), resulting in a death rate of 71.9 per 100,000 in the population (35th largest among states)[7].

Further, New Jersey faced one of the strongest societal disruptions due to state enforced "lockdown measures". New Jersey had one of the earliest to-be-initiated and longest lasting state enforced "lockdown" orders among states in the nation in 2020. California was the first state to order state-wide lockdowns on March 19, 2020. New Jersey followed suit two days later when, on March 21, New Jersey Governor Phil Murphy issued Executive Order 107[8]. New Jersey was tied with Illinois as being the 3rd earliest state to issue such lockdown orders (**Table 1**). The New Jersey lockdown order lasted 80 days (ending on June 9, 2020), which was tied with New Hampshire as being the sixth longest statewide lockdown (**Table 2**)[9]. New Jersey Executive Order 107 instructed state residents to remain at their place of residence with exceptions permitted for some activities (e.g. obtaining goods/services from "essential" retail businesses, obtaining takeout orders from restaurants, seeking medical attention, visiting family or other personally close individuals, going to work, engaging in outdoor recreational activities, leaving home for educational, religious or political reasons, leaving home out of fear for safety, leaving home due to law enforcement orders). Further, parties, celebrations, and other social events were prohibited. K-12 and higher-education schools were not permitted to offer in-person teaching. Finally, "non-essential" businesses were not permitted to operate in-person, resulting in the mass temporary or permanent closure of businesses. Approximately 37% of New Jersey small businesses that were

[6] **Source**: New Jersey Department of Health (2023). New Jersey COVID-19 Dashboard. Accessed online at: https://www.nj.gov/health/cd/topics/covid2019_dashboard.shtml
[7] **Source**: Centers of Disease Control and Prevention (2023). COVID-19 Mortality by State. Accessed online at: https://www.cdc.gov/nchs/pressroom/sosmap/covid19_mortality_final/COVID19.htm
[8] **Source**: New Jersey Executive Order 107 (2020). Accessed online at: https://nj.gov/infobank/eo/056murphy/pdf/EO-107.pdf
[9] **Analysis of data obtained via**: Ballotpedia (accessed 2023). States that issued lockdown and stay-at-home orders in response to the coronavirus (COVID-19) pandemic, 2020. Accessed online at: https://ballotpedia.org/States_that_issued_lockdown_and_stay-at-home_orders_in_response_to_the_coronavirus_(COVID-19)_pandemic,_2020

operating in January 2020 had temporarily or permanently closed by April 12, 2020. By August 2020, 4.5% fewer small businesses were open (relative to Jan 2020), and this percentage remained relatively stable up until mid-2021[10].

Table 1

State	Number of Days Lockdown Initially Ordered After 3/19/20
California	0
New York	1
New Jersey	2
Illinois	2
Oregon	4
Connecticut	4
Ohio	4
Louisiana	4
New Mexico	5
Michigan	5
Delaware	5
Washington	5
Massachusetts	5
Vermont	5
West Virginia	5
Indiana	5
Hawaii	6
Wisconsin	6
Idaho	6
Kentucky	7
Colorado	7
New Hampshire	8
Minnesota	8
Rhode Island	9
Montana	9

State	Number of Days Lockdown Initially Ordered After 3/19/20
Alaska	9
Virginia	11
North Carolina	11
Maryland	11
Kansas	11
Arizona	12
Tennessee	12
Pennsylvania	13
Nevada	13
Oklahoma	13
Maine	14
Florida	14
Texas	14
Georgia	15
Mississippi	15
Alabama	16
Missouri	18
South Carolina	19

[10] **Source**: Opportunity Insights Economic Tracker (2022). Percent Change in Number of Small Businesses Open. Accessed online at: https://tracktherecovery.org/

Table 2

State	Number of Days of Statewide Lockdown Order
New Mexico	251
California	162
New York	99
Kentucky	95
Oregon	88
New Jersey	80
New Hampshire	80
Illinois	69
Michigan	69
Delaware	68
Washington	68
Hawaii	67
Pennsylvania	64
Virginia	60
Maine	59
Connecticut	58
Ohio	57
Massachusetts	55
Louisiana	53
North Carolina	53
Vermont	52
Minnesota	51
Wisconsin	49
Maryland	46
Arizona	45

State	Number of Days of Statewide Lockdown Order
Nevada	44
West Virginia	41
Rhode Island	41
Indiana	38
Idaho	36
Oklahoma	35
Kansas	34
Florida	32
Colorado	31
Tennessee	30
Montana	29
Texas	28
Alaska	27
Georgia	27
Missouri	27
South Carolina	27
Alabama	26
Mississippi	24
Arkansas	0
Iowa	0
Nebraska	0
North Dakota	0
South Dakota	0
Utah	0
Wyoming	0

Such disruptions to businesses in the state resulted in mass unemployment in early-mid 2020. In the first few months after Executive Order 107 was issued, there was a massive spike in the number of initial unemployment claims made by New Jersey residents, with over 718,000 residents filing initial unemployment claims between mid-March and mid-April 2020 (**Figure 1**). The New Jersey unemployment rate remained elevated (relative to the pre-pandemic period of January-February 2020) until approximately June 2022 (**Figure 2** and **Figure 3**)[11,12].

[11] **Source of Figures 1-2**: Kapahi, V. (2021). Labor Day Snapshot: New Jersey's Uneven Recovery. New Jersey Policy Perspective. Accessed online at: https://www.njpp.org/publications/report/labor-day-snapshot-new-jerseys-uneven-recovery/

[12] **Source of Figure 3**: New Jersey Department of Labor and Workforce Development (2022). Unemployment Rates and Labor Force Estimates. Accessed online at: https://www.nj.gov/labor/labormarketinformation/employment-wages/unemployment-rates-labor-force-estimates/

Figure 1

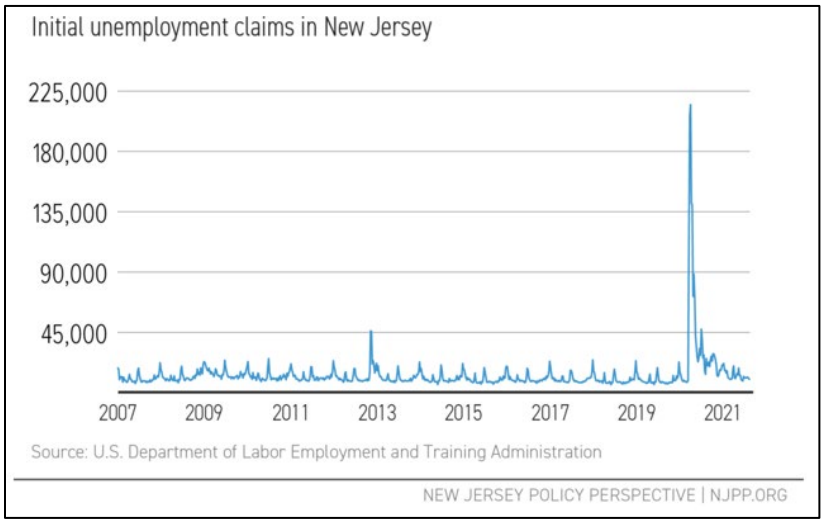


Figure 2

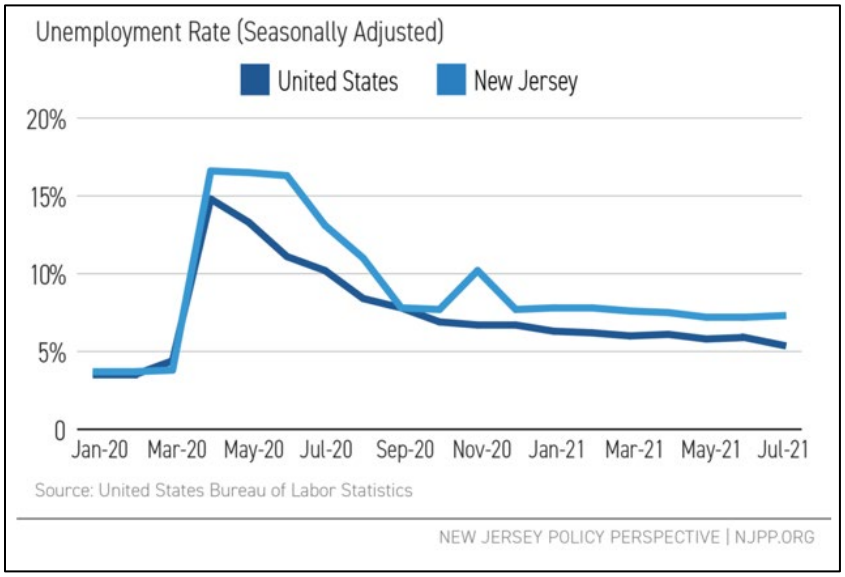
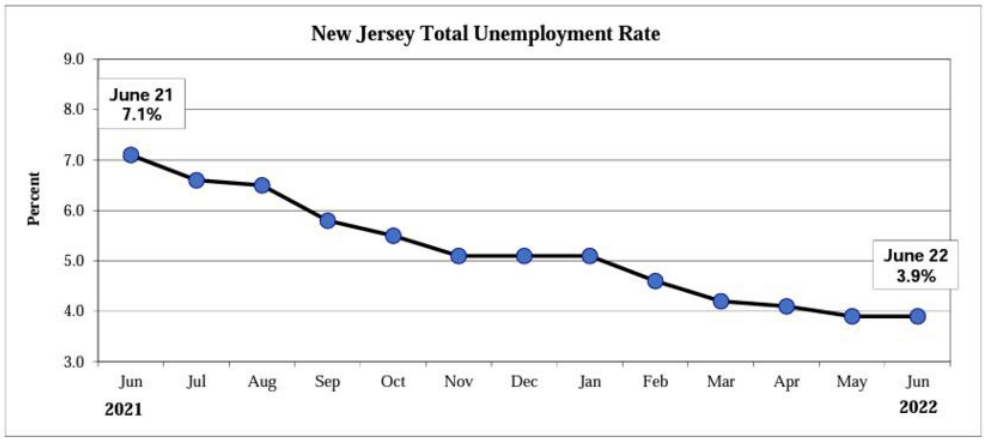


Figure 3



July 21, 2022

Source: New Jersey Dept. of Labor and Workforce Development, Division of Economic and Demographic Research.

The information summarized above makes it clear that the physical health, economic well-being, and social functioning of New Jersey residents was profoundly and negatively impacted by the COVID-19 pandemic, especially in 2020. What is less clear is how the pandemic impacted the mental health and mental health treatment of residents in the state.

Via presenting the results of analyses we performed on multiple public datasets and the results of an original poll that we designed and administered in 2023 to New Jersey residents, the aim of this report is to contribute to clarifying this issue by providing an overview of the ways mental health and mental health treatment changed during 2020 and 2021 relative to pre-pandemic years.

In **Section 2** of this report ("*Comparing the Mental Health of New Jersey Residents Before vs. During the Pandemic*"), we summarize how the mental health of New Jersey residents changed during the pandemic. This section focuses on changes in the prevalence of depression and anxiety, suicidal behaviors, substance abuse, child abuse and neglect, and depression in pregnant women and mothers of newborns. We assessed such changes in New Jersey residents and compared them to changes observed in (U.S.) national and international samples that have been reported in published research reports.

In **Section 3** of this report ("*Comparing Mental Health Care/Treatment of New Jersey Residents Before vs. During the Pandemic*"), we summarize changes in how New Jersey residents sought and received mental health care during the pandemic relative to pre-pandemic years. This section focuses on the diagnosis rates of various mental health disorders by state mental health agencies, rates of self-reported need and seeking of mental health treatment, rates of mental health treatment in hospital emergency rooms and state psychiatric hospitals, rates of substance abuse treatment and an assessment of the degree to which there is unmet demand of mental health and substance abuse treatment in the state. Like Section 2, we compared changes in these areas to such changes observed in national and international samples that have been identified in published research reports.

Section 4 ("*Policy Recommendations and Limitations*") offers suggestions on areas of investment and development needed to reduce the problems we reported in Sections 2 and 3. Further, we discuss the limitations of the methods we utilized in conducting this research to facilitate readers' critical evaluation of our research.

As alluded to earlier, the bulk of the findings presented in Sections 2 and 3 were discovered via the analysis of an original poll we developed and administered to New Jersey residents in March-April 2023 in addition to analyzing many publicly available datasets that contain New Jersey-specific information measured both prior to and during the pandemic that are relevant to the main topics of this report. With respect to the latter, we aimed to determine which variables relevant to mental health and mental health treatment changed between 2019 and 2020 (and when available, 2021). However, an important aspect to this type of analysis was to place any observed 2019-2020 changes in the context of trends in the annual changes of such variables that occurred in prior years leading up to 2019. In this way, we could assess whether any observed 2019-2020 changes were unique to that period (which would be suggestive that such changes were related in some way to the pandemic) or whether any observed changes between 2019 and 2020 were simply a continuation of trends in how such variables changed annually in the multiple years leading up to 2019 (which would be suggestive that such 2019-2020 changes were not related to the pandemic).

Another approach we adopted for these types of analyses was to place any 2019-2020 changes observed in New Jersey in the context of national and/or global trends observed during the same period (whenever such information was publicly available). In this way, we could determine if any 2019-2020 changes observed in New Jersey were unique in some way to New Jersey or whether they reflected broader trends occurring in the United States and/or other nations. We accomplished this by either analyzing national data found in publicly available datasets that were comparable to the New Jersey-specific datasets we worked with or by summarizing information about national and/or global trends that have been reported by prior published research.

Overall, our approach was to study changes in mental health and mental health treatment occurring during the pandemic as broadly as possible rather than focusing on a single topic in-depth. Our overarching goal

in adopting this approach was to establish and report as many facts relevant to these issues as possible in the hope that they inspire novel questions that can be investigated in future research and/or to guide deliberations and decisions pertaining to public policy related to mental health in both the state and the nation.

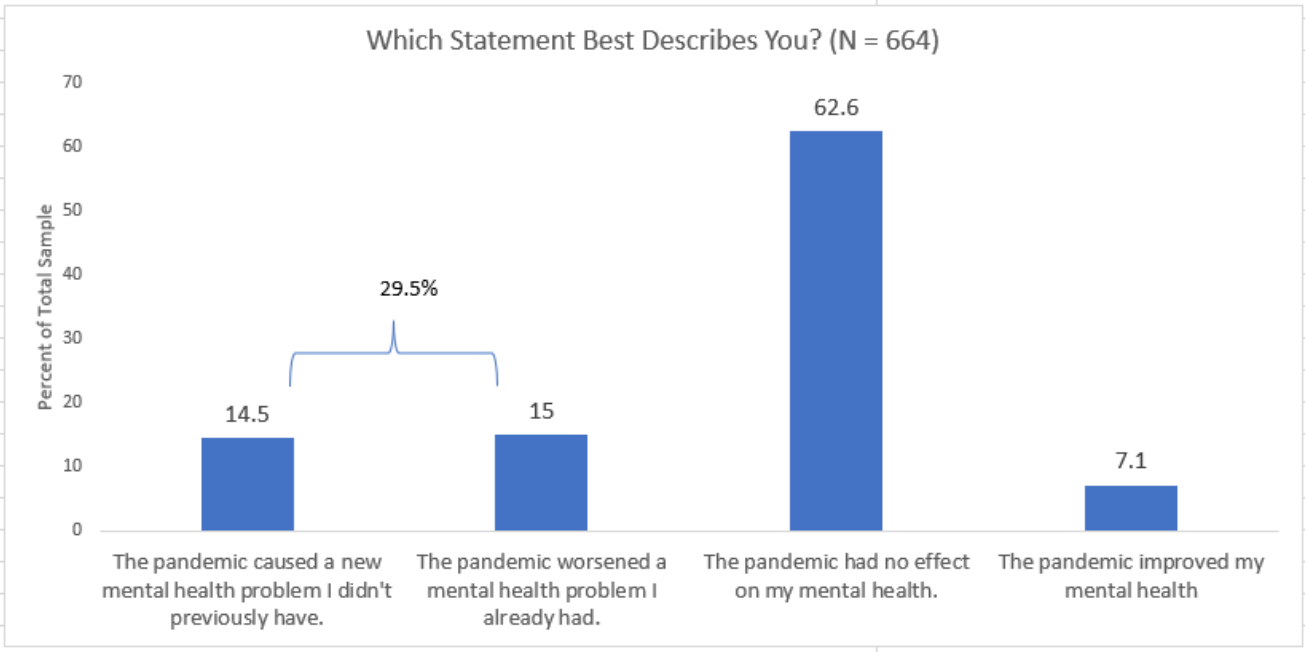
Section 2: Comparing the Mental Health of New Jersey Residents Before vs. During the Pandemic

In this section, we will discuss the mental health of New Jersey residents. Based on observations made via analyzing data from a recent poll of New Jersey residents in addition to various publicly available datasets, we will focus on assessing how the prevalence of various mental health problems changed before versus during the pandemic in New Jersey, how such changes varied between different demographic groups, and how changes that occurred within the state compared to national and/or global trends. In the sections below, our discussion will specifically focus on experiences of depression and anxiety, suicidal behaviors, substance abuse, child abuse, and the mental health of mothers during and after pregnancy.

General Mental Health with an Emphasis on Depression and Anxiety.

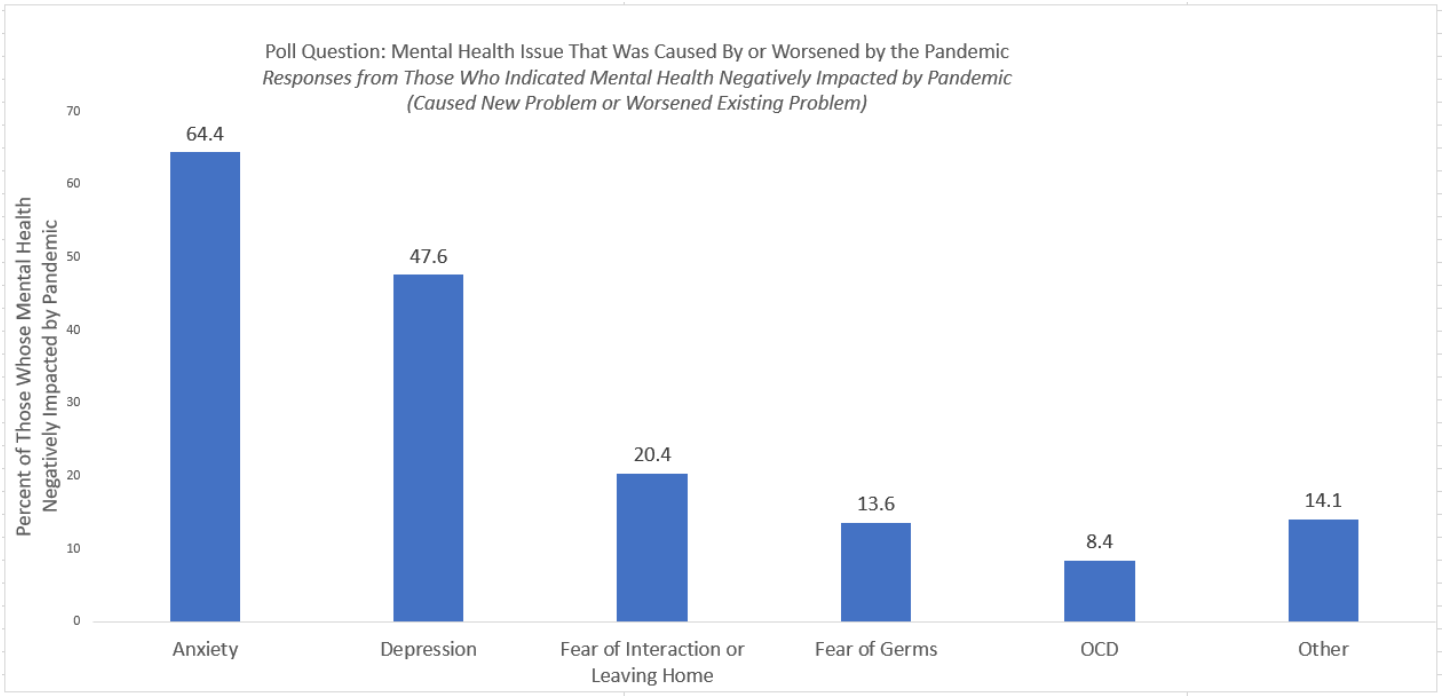
In collaboration with the Stockton Polling Institute of the William J. Hughes Center for Public Policy at Stockton University, we designed a poll that was responded to by 658 New Jersey residents in March-April 2023. This poll was designed to assess self-reported experiences of mental health changes that were perceived to have been caused by the pandemic (see **Appendix A** for a description of the methodology of the poll. For the remainder of the report, we will refer to this as the "Hughes Center Poll"). As can be seen in **Figure 4**, approximately 37% of respondents reported that the pandemic affected their mental health. While 7.1% of respondents indicated that the pandemic improved their mental health, 29.5% indicated that their mental health worsened due to the pandemic (14.5% indicating that the pandemic caused a new mental health problem not previously experienced versus 15.0% indicating the pandemic worsened a pre-existing mental health problem).

Figure 4



We asked the 29.5% of respondents who indicated that their mental health worsened during the pandemic to report the specific mental health problem(s) that they believed to have been affected by the pandemic. In this subsample, the two most common responses were anxiety and depression (indicated by 64.4% and 47.6% of this subsample respectively; see **Figure 5**).

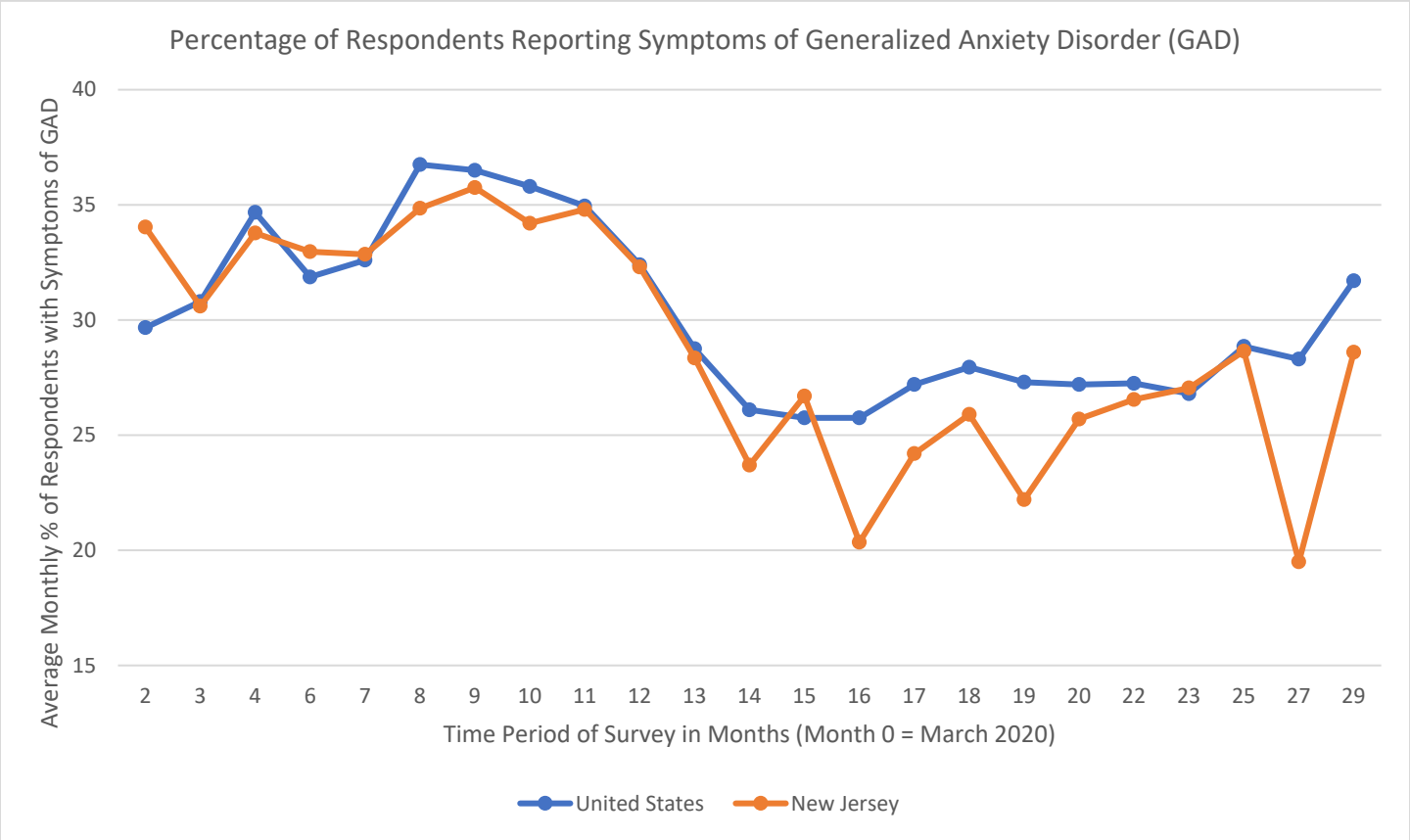
Figure 5



Analysis of data collected by the Centers for Disease Control and Prevention (CDC) Household Pulse Survey provides insight about the time course of the prevalence of depression and anxiety in New Jersey residents in addition to how the prevalence of depression and anxiety compared between New Jersey and United States citizens[13]. **Figure 6** shows the average monthly percentage of respondents who indicated that they experienced symptoms of Generalized Anxiety Disorder (GAD). Here, one can see that the percentage of respondents reporting symptoms of GAD were highest during the first 12 months of the pandemic in both New Jersey and the United States. The percentage of respondents reporting symptoms of GAD during the first 12 months of the pandemic ranged from 30% to 37% (where March 2020 is considered Month 0; Month 2 = May 2020 and Month 12 = March 2021). Beginning in April 2021 (Month 13), these percentages began to decrease and stabilized to a range of 20% to 29% between Months 13 and 29 (August 2022) in New Jersey residents (in the larger United States sample, this percentage ranged from 26% to 32% during the same time period). Overall, the pattern of changes in the prevalence of symptoms of GAD in New Jersey residents over time generally followed the national trend, with some time periods (e.g., between Months 8-10 and 16-20) being observed to show lower percentages of New Jersey residents reporting these symptoms compared to the national average.

[13] **Analysis of data obtained via**: Centers of Disease Control and Prevention - Household Pulse Survey. Accessed online at: https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

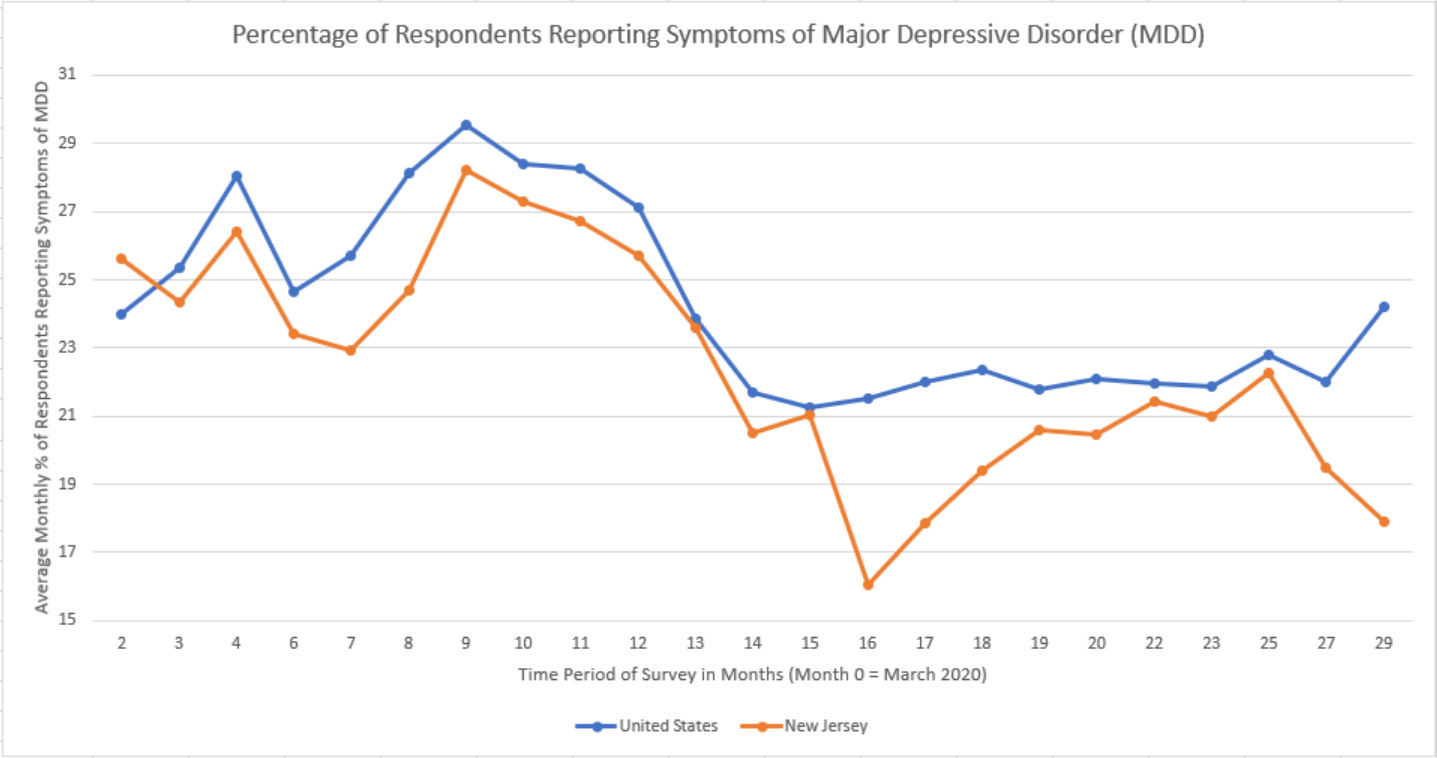
Figure 6



The CDC Household Pulse Survey collected similar data concerning the percentage of respondents reporting symptoms of Major Depressive Disorder (MDD). As can be seen in **Figure 7**, comparable to what was observed above in relation to the experience of GAD, the first 12 months of the pandemic were associated with the highest percentage of New Jersey and United States residents reporting symptoms of MDD (ranging from 23% to 28% in New Jersey and from 24% to 30% in the United States). These percentages began to decrease and stabilized to a range falling between 16% and 24% in New Jersey and 21% to 24% in the United States between April 2021 (Month 13) and August 2022 (Month 29). Although the pattern of change over this period in New Jersey was similar to national trends, New Jersey was observed to have a smaller percentage of residents reporting symptoms of MDD relative to the national average for most of the first 29 months of the pandemic. Further, the observation that the percentage of New Jersey residents experiencing symptoms of GAD was greater than the percentage of New Jersey residents experiencing symptoms of MDD is consistent with the

Hughes Center Poll results we reported earlier that showed more New Jersey residents reported experiencing worse anxiety during the pandemic than reporting experiencing worse depression during to the pandemic.

Figure 7



In addition to being consistent with national trends, the increases in the New Jersey population experiencing anxiety and depression during the pandemic are consistent with worldwide trends. As can be seen in **Figure 8** and **Figure 9**, countries spanning multiple global regions showed higher prevalence rates of depression and anxiety in 2020 compared to pre-pandemic periods[14]. According to the World Health Organization (WHO)[15], cases of Major Depressive Disorder increased between 25%-30% and cases of anxiety disorders increased between 23%-28% worldwide in 2020 (based on an analysis of 204 countries). Regional-level analyses indicated that increases in the rates of depression and anxiety were predicted by measures of

[14] **Source**: Organization for Economic Co-operation and Development (2021). Tackling the mental health impact of the COVID-19 crisis: An integrated, whole-of-society response. Accessed online from: https://read.oecd-ilibrary.org/view/?ref=1094_1094455-bukuf1f0cm&title=Tackling-the-mental-health-impact-of-the-COVID-19-crisis-An-integrated-whole-of-society-response

[15] **Source**: World Health Organization (2022). Mental health and COVID-19: Early evidence of the pandemic's impact: Scientific brief, 2 March 2022. Accessed online from: https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022.1

human mobility and COVID-19 infection rates. Specifically, increases in depression and anxiety were more often observed in regions that had lower human mobility (reflecting a more stringent community lockdowns, stay-at-home orders and/or greater community cooperation in following stay-at-home guidelines) and greater COVID-19 infection rates.

Figure 8

National estimates of prevalence of anxiety or symptoms of anxiety in early 2020[1] and in a year prior to 2020

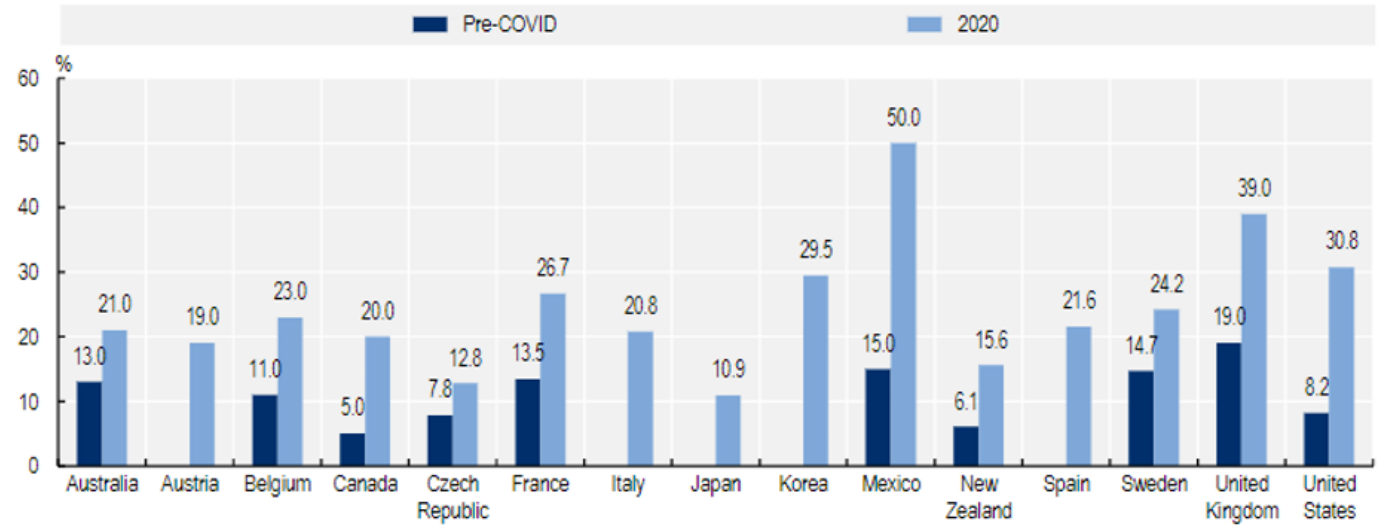
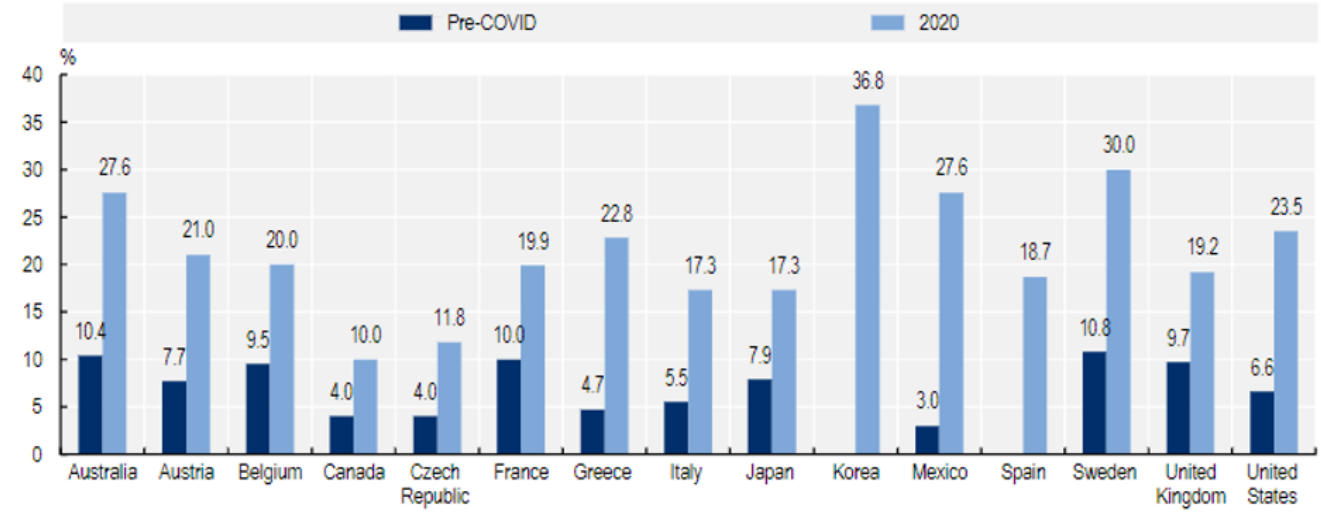


Figure 9

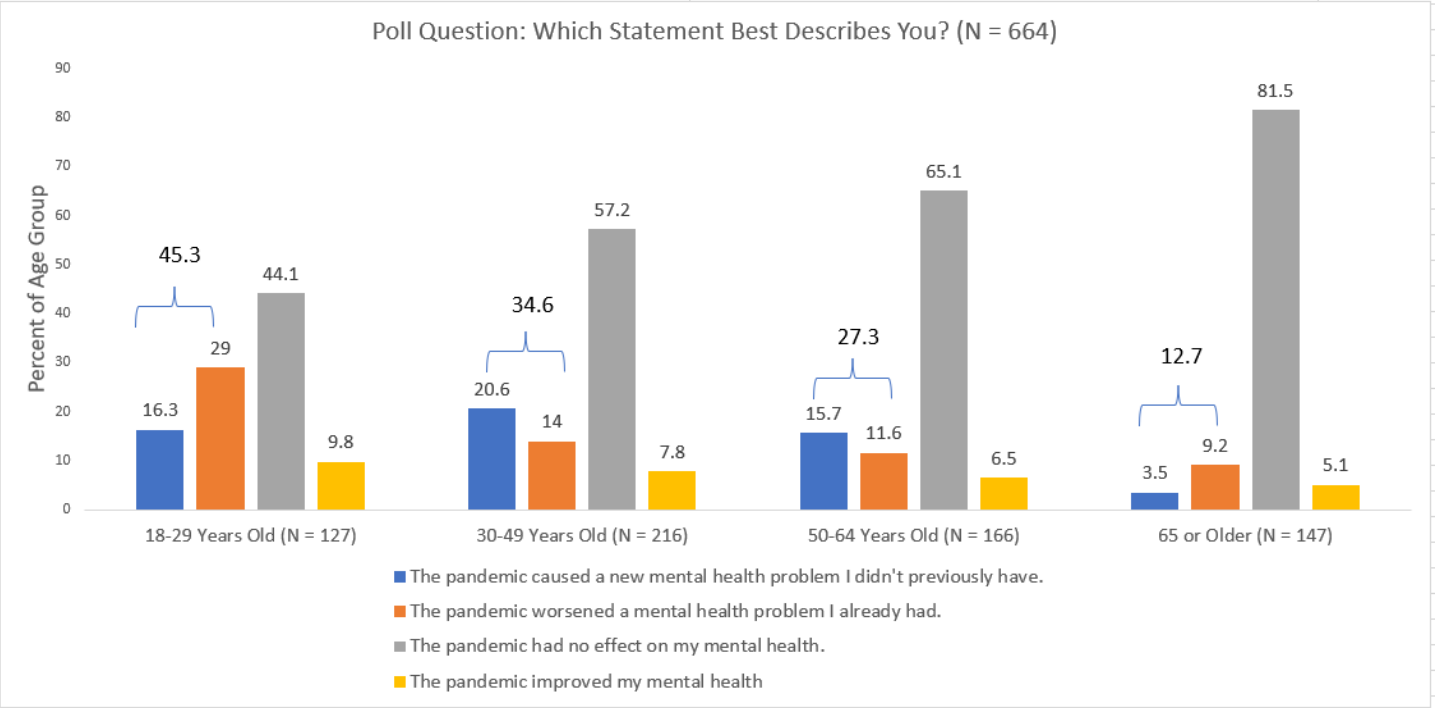
National estimates of prevalence of depression or symptoms of depression in early 2020[1] and in a year prior to 2020



Within New Jersey, there was variability among demographic groups with respect to the changes in mental health experienced during the pandemic. In the sections below, we will review age-, sex-, and United States political party affiliation- and race-based differences in pandemic-related mental health changes.

Age-Based Differences. According to the results of the Hughes Center Poll, the percentage of respondents who indicated that their mental health worsened due to the pandemic (either by causing a new mental health problem or by worsening a pre-existing mental health problem) progressively increased the younger the age of the respondents, with 18-29-year-olds showing the greatest percentage (45.3%) and those aged 65 or older showing the smallest percentage (12.7%) (see **Figure 10**). Interestingly, the percentage of individuals indicating that the pandemic improved their mental health also progressively increased the younger the age of the respondents, with 9.8% of those aged between 18-29 years versus 5.1% of those aged 65 years or older indicating that the pandemic improved their mental health. Thus, there seems to be an overall trend that the pandemic generally affected the mental health of younger adults (in one way or another) more commonly than older adults.

Figure 10



Analyses of data obtained from the National Survey of Drug Use and Mental Health (NSDUH)[16] provide further evidence that the negative changes in mental health associated with the pandemic have more commonly been observed in younger than older populations. **Figure 11**, **Figure 12** and **Figure 13** show, respectively, the percentages of respondents indicating that they have experienced "any mental illness"[17], "serious mental illness"[18] and "a major depressive episode"[19] in the past year relative to the time of the survey for both New Jersey and United States samples between the years 2014 and 2021 (2020 state-specific data was not available). In every year between 2014 and 2021, a greater percentage of 18-25-year-olds reported experiencing any mental illness, serious mental illness and a major depressive episode in the prior year than individuals aged 26 years or older in both New Jersey and the United States. However, 2021 (relative to prior years going back to 2014) was observed to have the largest difference between these two age groups in both New Jersey and the United States with respect to the percentage of respondents reporting any mental illness, serious mental illness and a major depressive episode in the prior year. Further, the 2021 (relative to 2018-2019) change in the percentage of New Jersey respondents who indicated any mental illness, serious mental illness and a major depressive episode in the prior year was larger for 18-25-year-olds (31% increase for any mental illness, 52% increase for serious mental illness and 41% for major depressive episode) than it was for those aged 26 years or older (13% increase for any mental illness, 15% *decrease* for serious mental illness and 2%

[16] **Source of the data analyzed**: Substance Abuse and Mental Health Services Administration (SAMHSA). National Survey on Drug Use and Mental Health (NSDUH) – State Reports. Accessed online at: https://www.samhsa.gov/data/nsduh/state-reports

[17] **Note**: "Any Mental Illness" (AMI) aligns with Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) criteria and is defined as having a diagnosable mental, behavioral, or emotional disorder, other than a developmental or substance use disorder. These estimates are based on indicators of AMI rather than direct measures of diagnostic status. For details, see Section B of the "2021 NSDUH: Guide to State Tables and Summary of Small Area Estimation Methodology" at https://www.samhsa.gov/data/report/2021-nsduh-guidestate-tables-and-summary-sae-methodology

[18] **Note**: "Serious Mental Illness" (SMI) aligns with Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) criteria and is defined as having a diagnosable mental, behavioral, or emotional disorder, other than a developmental or substance use disorder. Estimates of SMI are a subset of estimates of any mental illness (AMI) because SMI is limited to people with AMI that resulted in serious functional impairment. These estimates are based on indicators of SMI rather than direct measures of diagnostic status. For details, see Section B of the "2021 NSDUH: Guide to State Tables and Summary of Small Area Estimation Methodology" at https://www.samhsa.gov/data/report/2021-nsduh-guide-state-tablesand-summary-sae-methodology

[19] **Note**: Major Depressive Episode (MDE) is based on the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) definition, which specifies a period of at least 2 weeks when an individual experienced a depressed mood or loss of interest or pleasure in daily activities and had a majority of specified depression symptoms. For details, see Section B of the "2021 NSDUH: Guide to State Tables and Summary of Small Area Estimation Methodology" at https://www.samhsa.gov/data/report/2021-nsduh-guide-state-tables-and-summarysae-methodology.

decrease for major depressive episode). For all three measures, it is currently unclear to what degree the changes observed were specifically related to the pandemic versus a continuation of an annual trend initiated prior to the pandemic. The 2018/2019 to 2021 change in these three measures in the national sample seemed to be a continuation of the annual rates of change observed prior to the pandemic, indicating that the 2021 change may not have been largely contributed to by pandemic-specific factors. In contrast, the 2018/2019 to 2021 changes observed in the New Jersey sample seemed to follow the directional trend that was observed in years prior to the pandemic, but the rate of change seemed to be greater from 2018/2019 to 2021 than it had been across prior years going back to 2014. This raises the possibility that pandemic-specific factors may have partially contributed to this increase in young adults' experience of mental illness in New Jersey.

The above observations that younger adults have experienced worse mental health than older adults during the pandemic is consistent with findings observed in other national- and global-level studies. A KFF/CNN national survey[20] conducted between January-June 2021 indicated that 47% of parents believed that the pandemic had a negative impact on their child's mental health (with 17% describing the negative impact as major) in contrast to only 3% of parents indicating that the pandemic had a positive impact on their child's mental health. Further, the World Health Organization reported that, based on an analysis of 204 countries, increases in depression and anxiety occurring in 2020 were greater worldwide for 20-24-year-olds than they were for older adults[21]. Another study that performed a meta-analysis of 29 studies of international samples of individuals aged 18 years or younger estimated a 25% increase in clinically evaluated depressive symptoms and a 21% increase in clinically evaluated anxiety symptoms worldwide during the first year of the pandemic[22]. A longitudinal study of California adolescents found that, during the pandemic, experiences of depression and anxiety symptoms increased, but feelings of loneliness decreased. However, this study reported that lower self-

[20] **Source**: Lopes, L., Kirzinger, A., Sparks, G., Stokes, M. & Brodie, M. (2022). KFF/CNN Mental Health in America Survey. Online article accessed from: https://www.kff.org/report-section/kff-cnn-mental-health-in-america-survey-findings/

[21] **Source**: World Health Organization (2022). Mental health and COVID-19: Early evidence of the pandemic's impact: Scientific brief, 2 March 2022. Accessed online from: https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022.1

[22] **Source**: Racine, N., McArthur, B.A. & Cooke, J.E. (2021). Global Prevalence of Depressive and Anxiety Symptoms in Children and Adolescents During COVID-19: A Meta-Analysis. *JAMA Pediatrics, 175 (11),* 1142-1150.

reported levels of depressive and anxiety symptoms were associated with greater number of contacts with friends and a greater level of self-reported satisfaction with electronic communication with friends[23]. Thus, it appears that social support was a potentially important factor in mitigating the negative impact of the pandemic on adolescent's mental health.

Figure 11

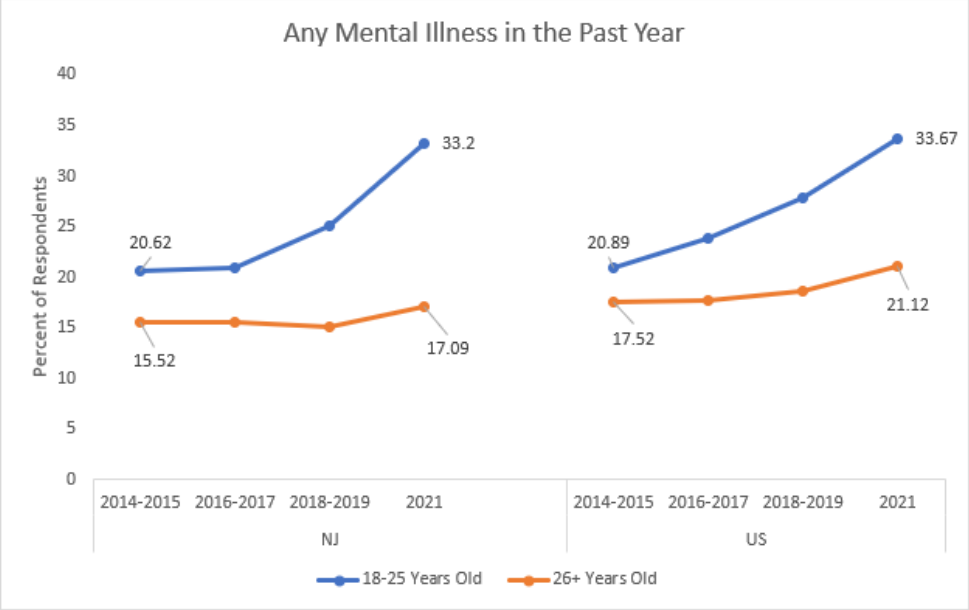
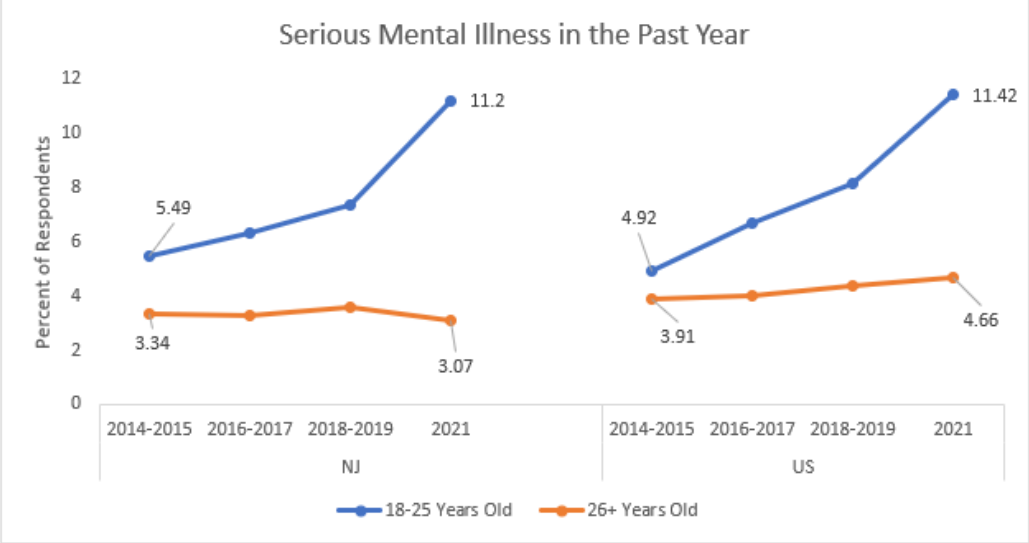
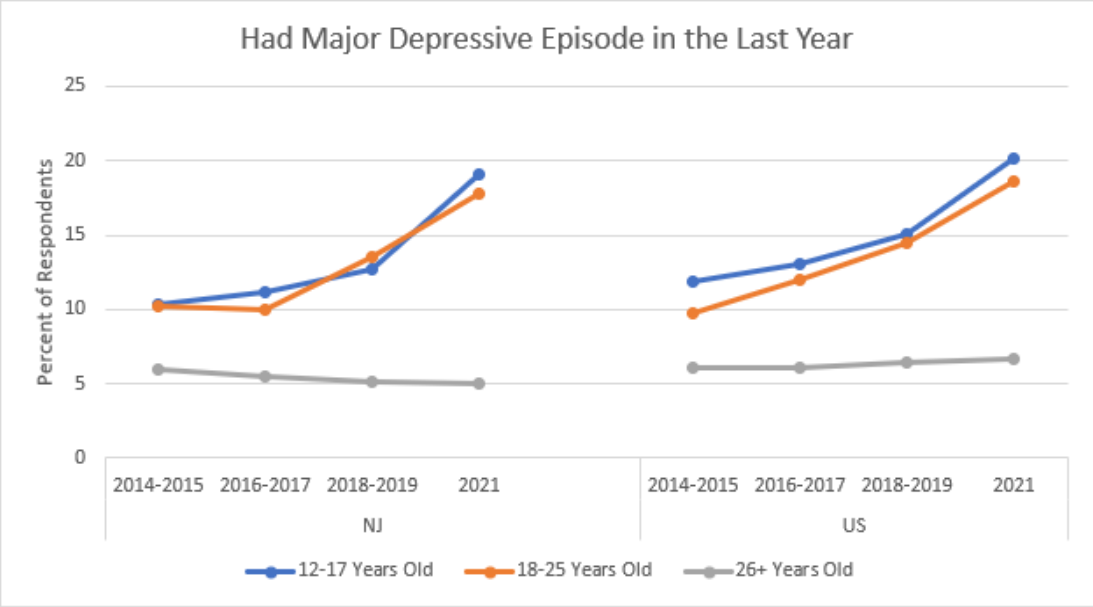


Figure 12



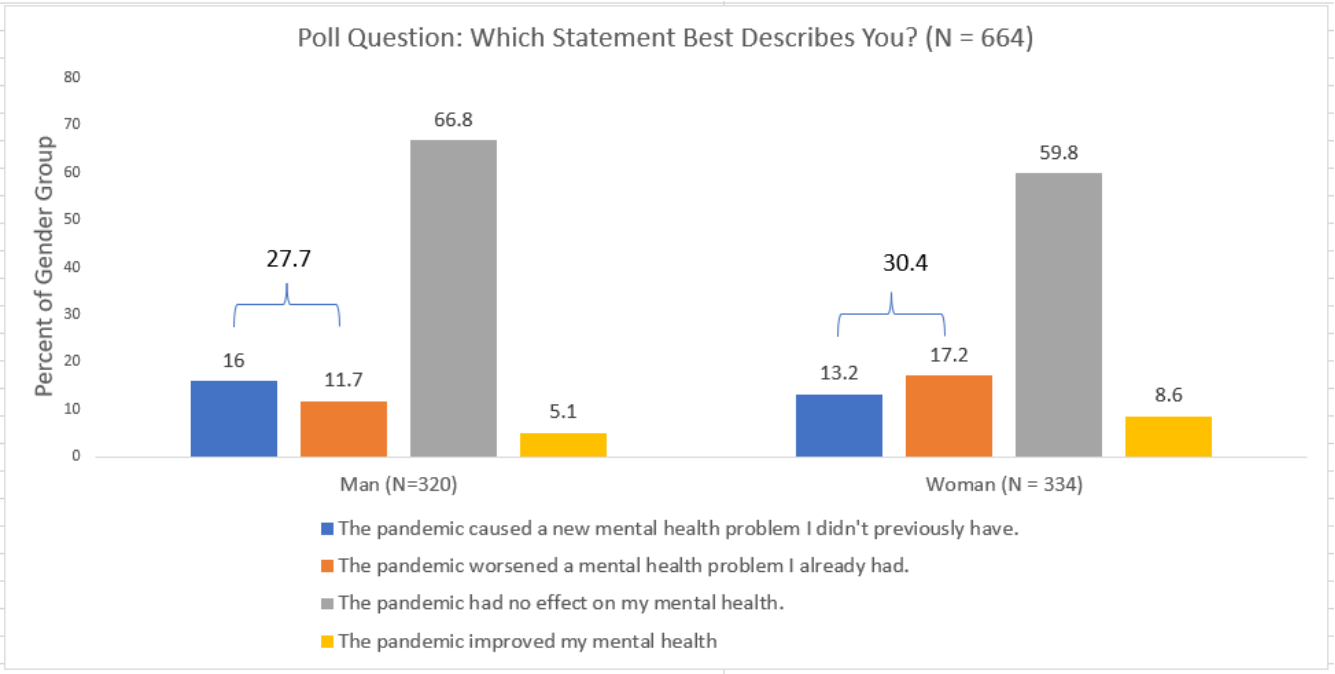
[23] **Source**: Juvonen, J., Lessard, L.M., Kline, N.G. & Graham, S. (2022). Young Adult Adaptability to the Social Challenges of the COVID-19 Pandemic: The Protective Role of Friendships. *Journal of Youth & Adolescence*, *51*(3), 585–597

Figure 13



Sex-Based Differences. According to the results of the Hughes Center Poll, a greater percentage of females than males reported that the pandemic affected their mental health in one way or another (see **Figure 14**). 30.4% of females reported that the pandemic had a negative impact on their mental health compared to 27.7% of males whereas 8.6% of females reported that the pandemic had a positive impact on their mental health compared to 5.1% of males.

Figure 14



The observation of worse mental health in women than in men during the pandemic is consistent with trends observed nationally and worldwide. Data from the national sample of the CDC Household Pulse Survey shows that a greater percentage of women than men experienced symptoms of Generalized Anxiety Disorder (**Figure 15**) and symptoms of Major Depressive Disorder (**Figure 16**) every month during the first 22 months of the pandemic[24]. Globally, the World Health Organization reports that increases in depression and anxiety that occurred in 2020 were greater for women than for men[25].

Why have women more commonly experienced poor mental health during the pandemic than men, particularly with respect to anxiety and depression? While it is the case that women have historically experienced anxiety and depression at greater rates than men prior to the pandemic[26], there are some pandemic-specific factors that may have contributed to this sex difference in the experience of anxiety and depression. Research by the New Jersey State Policy Lab at Rutgers University[27] discovered that, in New Jersey, women were impacted during the pandemic more than men with respect to multiple economic/societal disruptions. Specifically, this research discovered that, during the pandemic, women (relative to men):

- were unemployed at higher rates and participated in the labor force at lower rates
- were more likely to not participate in the labor force due to child-care responsibilities (10% of women vs. 2.3% of men)
- were more likely to have multiple jobs (5.2% of women vs. 4.1% of men)
- constituted most of the frontline essential work force that were most exposed to working with individuals potentially infected with the COVID-19 virus (68% of this workforce were women)

[24] **Analysis of data obtained via**: Centers of Disease Control and Prevention - Household Pulse Survey. Accessed online at: https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

[25] **Source**: World Health Organization (2022). Mental health and COVID-19: Early evidence of the pandemic's impact: Scientific brief, 2 March 2022. Accessed online from: https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022.1

[26] **Source**: Eaton, N.R., Krueger, R.F., Skodol, A.E., Grant, B.F., Keyes, K.M., Balsis, S., Markon, K.E. & Hasin, D.S. (2012). An Invariant Dimensional Liability Model of Gender Differences in Mental Disorder Prevalence: Evidence From a National Sample. *Journal of Abnormal Psychology, 121 (1),* 282-288.

[27] **Source**: Small, S. & Lancaster, D. (2022). The Status of Women in New Jersey: An Intersectional Lens on Women, Work, and the COVID-19 Pandemic. Accessed online from:https://rutgers.app.box.com/s/jt9rm1xk3framh1rp5j2o652r8a8ma3g

This pattern suggests that women, despite overall lower rates of participation in the workforce, were more likely to have lower-paying jobs than men (resulting in the increased likelihood to have multiple jobs), to have more dangerous jobs than men (e.g. by working with potentially ill individuals during the pandemic), and to have more child-care responsibilities in the context of social lockdowns. These environmental stressors may have partially contributed to higher rates of depression and anxiety in women over men, at least in New Jersey.

Another potential reason why women were more likely to experience worse mental health symptoms during the pandemic may be due to sex differences in what has been termed "pathogen disgust sensitivity". This term refers to how easily disgusted an individual becomes when exposed to a cue indicating the potential presence of a pathogen. Women have historically been observed to have heightened pathogen disgust sensitivities compared to men[28]. Disgust sensitivity was elevated during the COVID-19 pandemic which may have exacerbated this gender divide[29]. Additional research demonstrated that pre-pandemic disgust sensitivity levels predicted maladaptive anxiety responses to the pandemic[30] which may partially explain why women were more likely than men to have experienced worse mental health in New Jersey, the United States and worldwide.

[28] **Source**: Hlay, J.K., Albert, G., Batres, C., Richardson, G., Placek, C., Arnocky, S., Lieberman, D. & Hodges-Simeon, C.R. (2021). The evolution of disgust for pathogen detection and avoidance. *Scientific Reports, 11*, 13468.
[29] **Source**: Stevenson, R. J., Saluja, S., & Case, T. I. (2021). The impact of the Covid-19 pandemic on disgust sensitivity. *Frontiers in Psychology*, *11,* 600761.
[30] **Source**: Cox, R. C., Jessup, S. C., Luber, M. J., & Olatunji, B. O. (2020). Pre-pandemic disgust proneness predicts increased coronavirus anxiety and safety behaviors: Evidence for a diathesis-stress model. *Journal of Anxiety Disorders*, *76,* 102315.

Figure 15

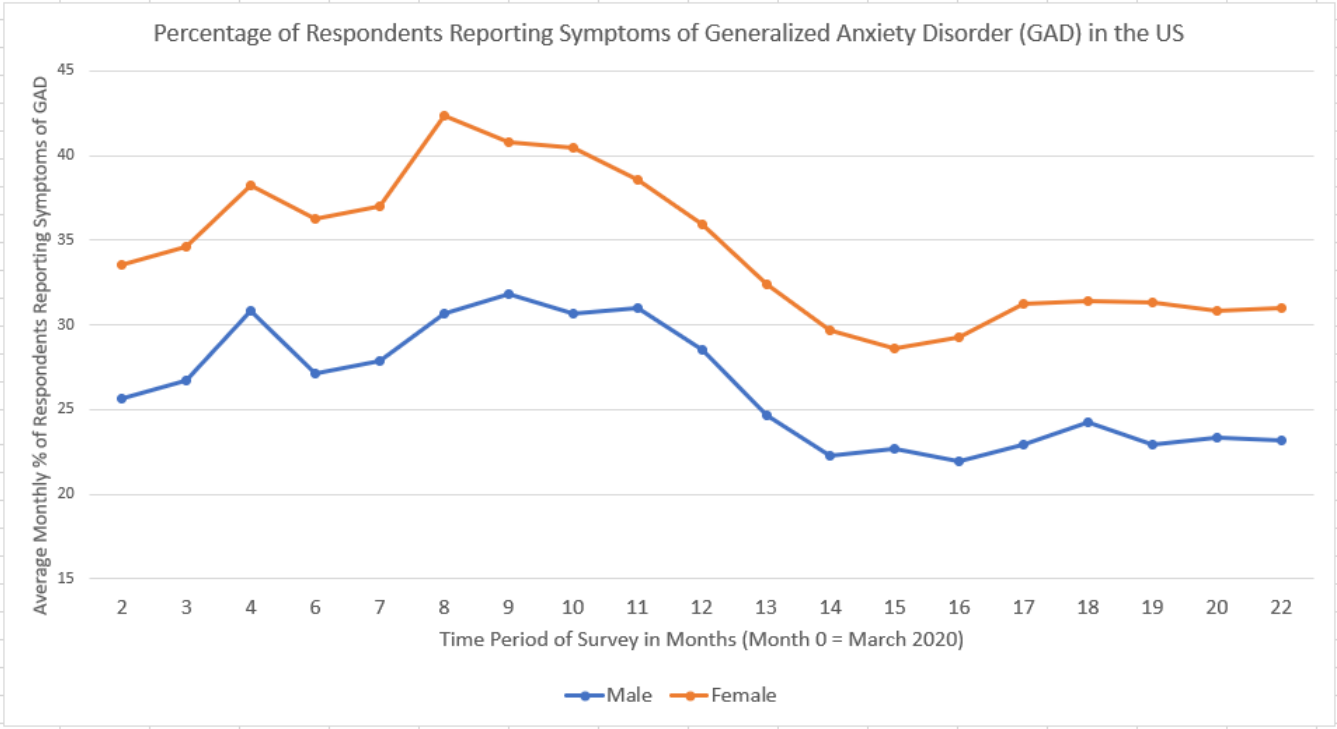
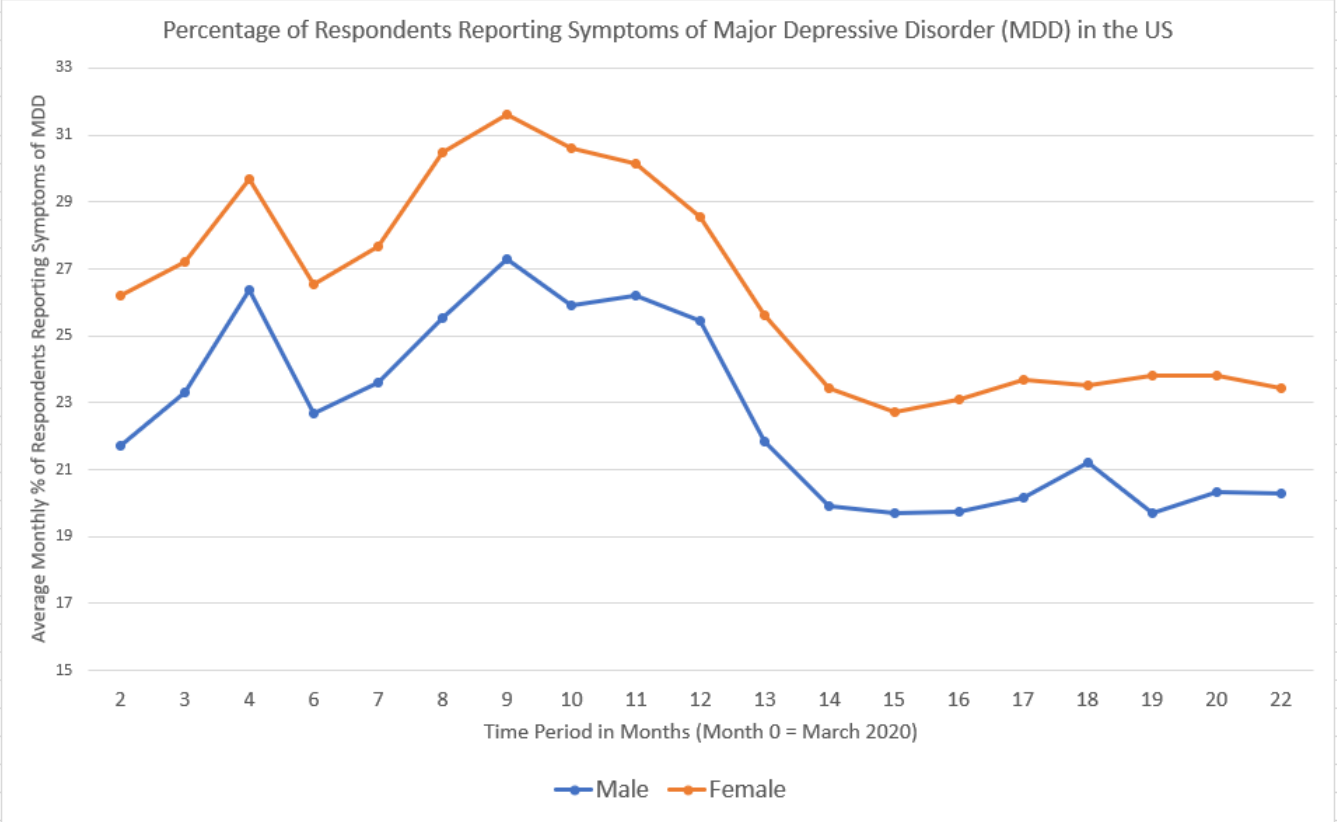
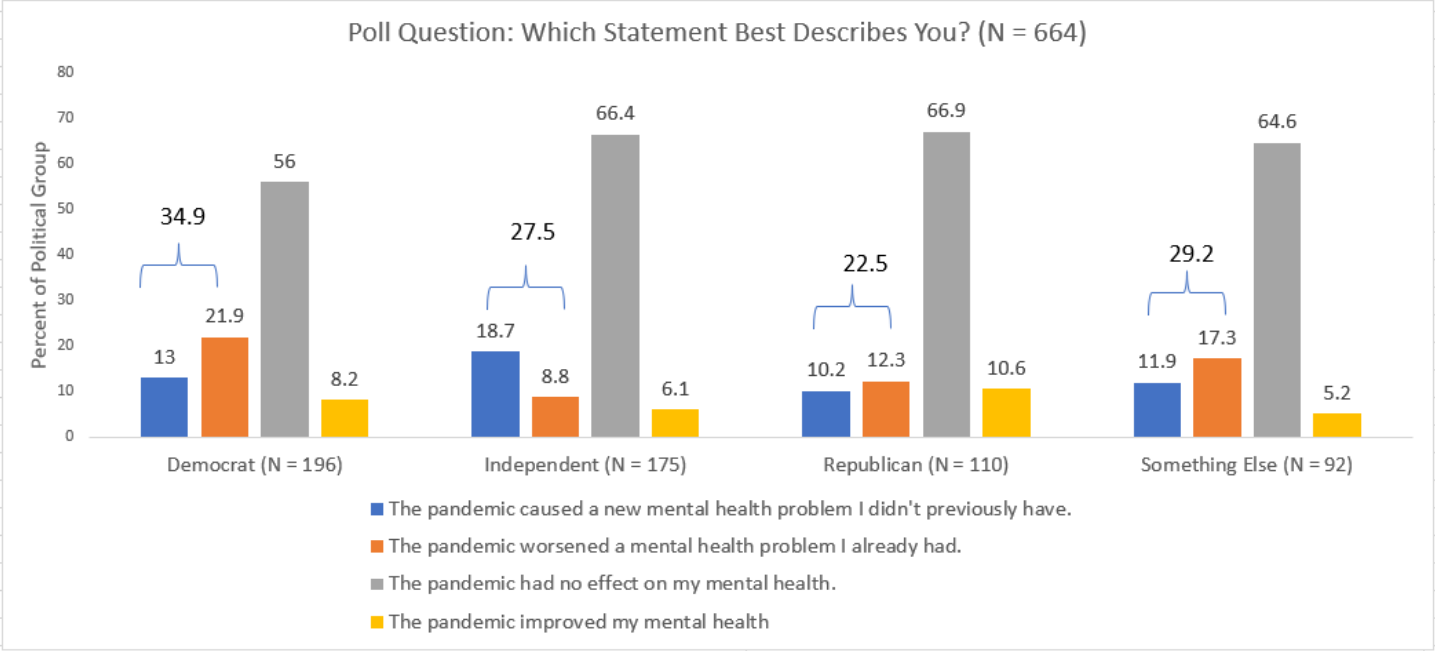


Figure 16



Political Party Affiliation-Based Differences. Research performed early in the pandemic indicated that individuals identifying as Democrat were more likely to believe that the COVID-19 pandemic was a major threat to the health of the U.S. public than Republicans[31]. Thus, it stands to question as to whether this political-based difference in the perceived threat of the pandemic is related to political-based differences in the experience of mental health problems. As one can see in **Figure 17**, results of the Hughes Center Poll indicated that a larger percentage of New Jersey Democrats indicated that the pandemic worsened their mental health (34.9%) than New Jersey Republicans (22.5%).

Figure 17



This result is consistent with national observations. National research[32] has shown that, in 2020, Democrats reported higher levels of distress (reflecting "emotional problems", "fatigue", "general unhappiness", "loneliness", "negative feelings", "stress", poor "mental health" and poor "quality of life") than

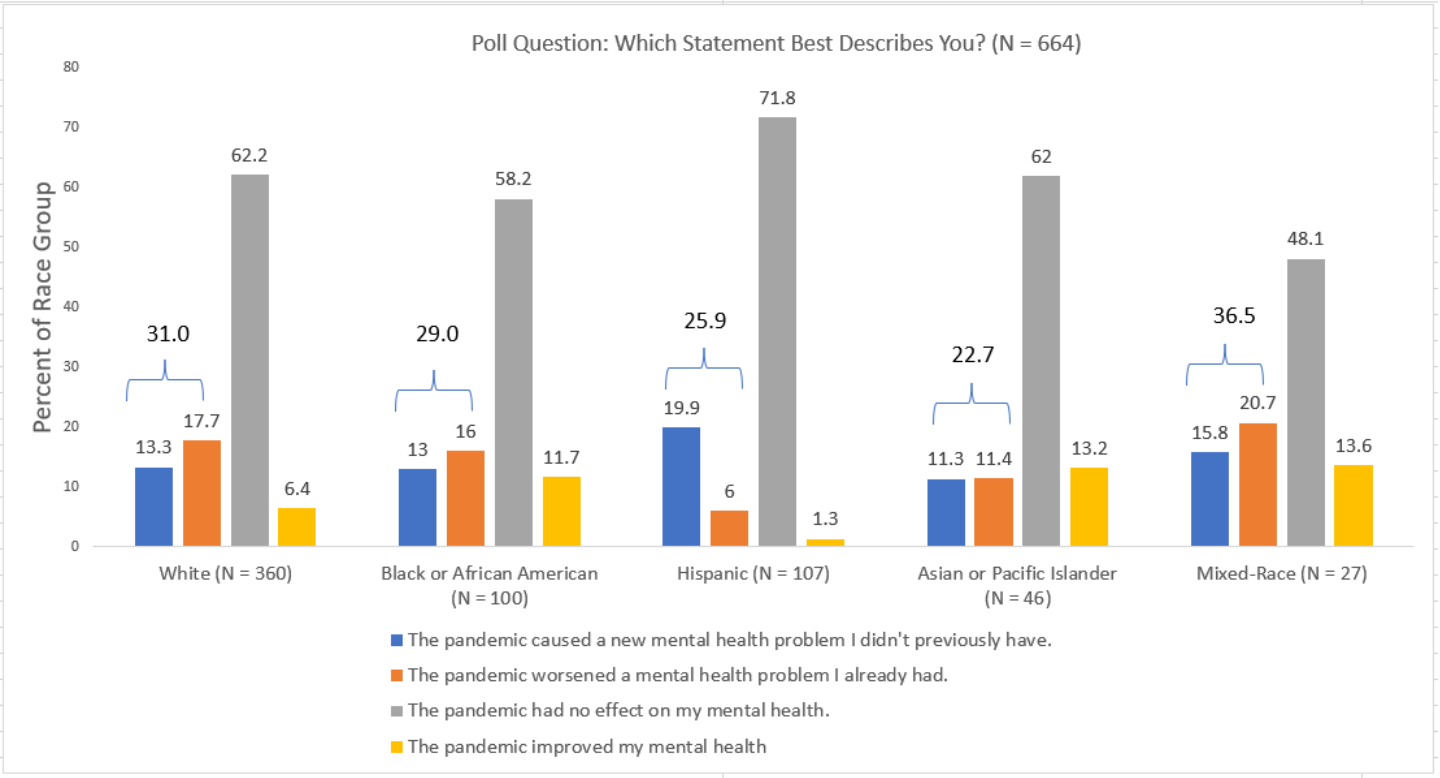
[31] **Source**: Tyson, A. (2020). Republicans remain far less likely than Democrats to view COVID-19 as a major threat to public health. Pew Research Center. Accessed online at: https://www.pewresearch.org/short-reads/2020/07/22/republicans-remain-far-less-likely-than-democrats-to-view-covid-19-as-a-major-threat-to-public-health/

[32] **Source**: Bock, S. & Schnabel, L. (2022). Distressed Democrats and relaxed Republicans? Partisanship and mental health during the COVID-19 pandemic. *PLos One, 17(4)*, e0266562.

Republicans. However, this research demonstrated that this partisan difference has been a pattern that has been observed in the United States since at least 1972 and that the degree of Democrat-Republican (D-R) difference observed in 2020 did not significantly differ from the degree of D-R difference observed in 2018. Thus, there is not strong evidence to support the claim that elevated levels of mental distress in Democrats relative to Republicans observed during the pandemic is a phenomenon that was specifically caused by the pandemic.

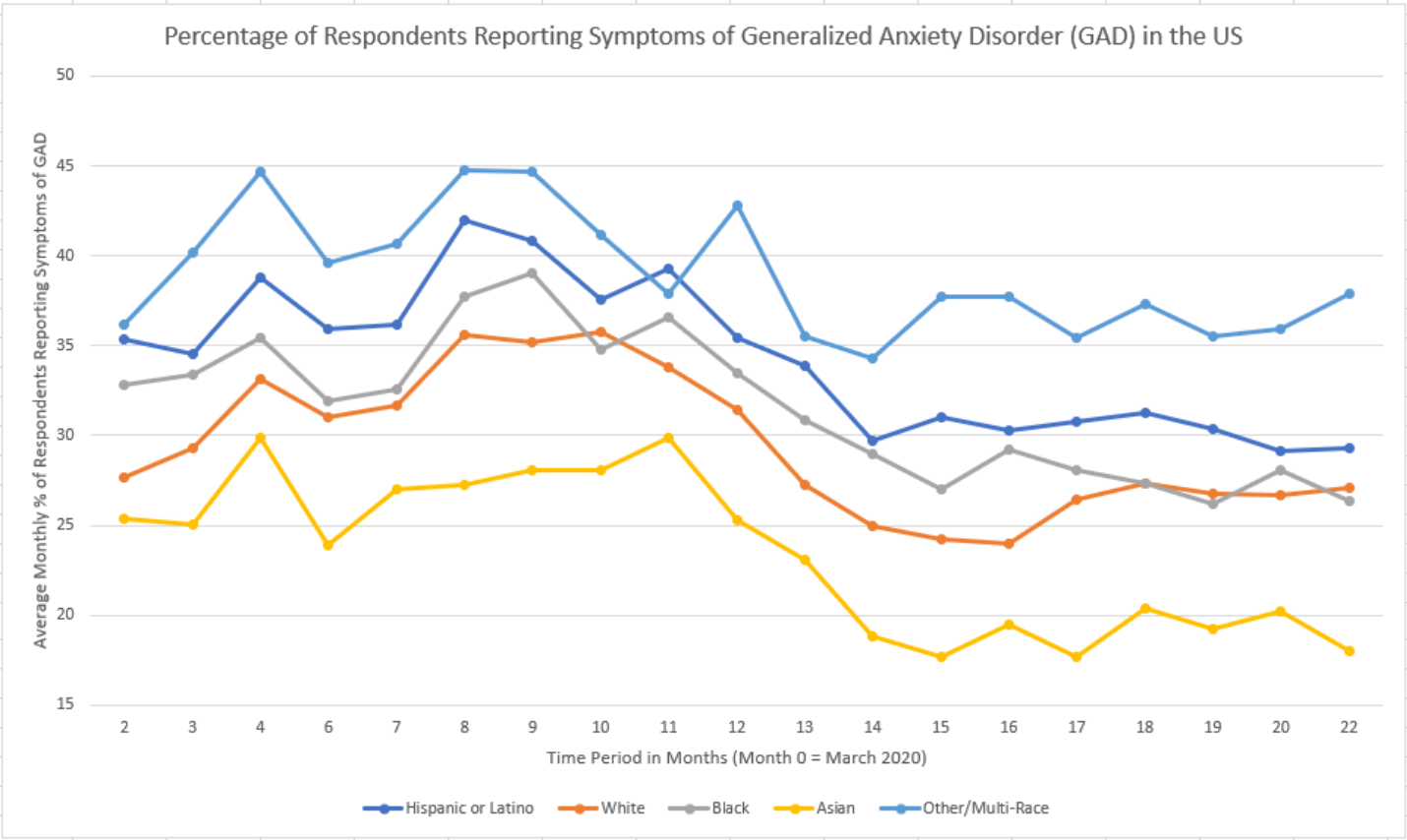
Race-Based Differences. According to the Hughes Center Poll, the percentage of New Jersey residents who indicated that their mental health worsened due to the pandemic varied between different race groups (**Figure 18**). Mixed-race respondents represented the race group that was most likely to experience worsened mental health due to the pandemic (36.5%) and Asian respondents represented the race group that was least likely to experience worsened mental health due to the pandemic (22.7%).

Figure 18



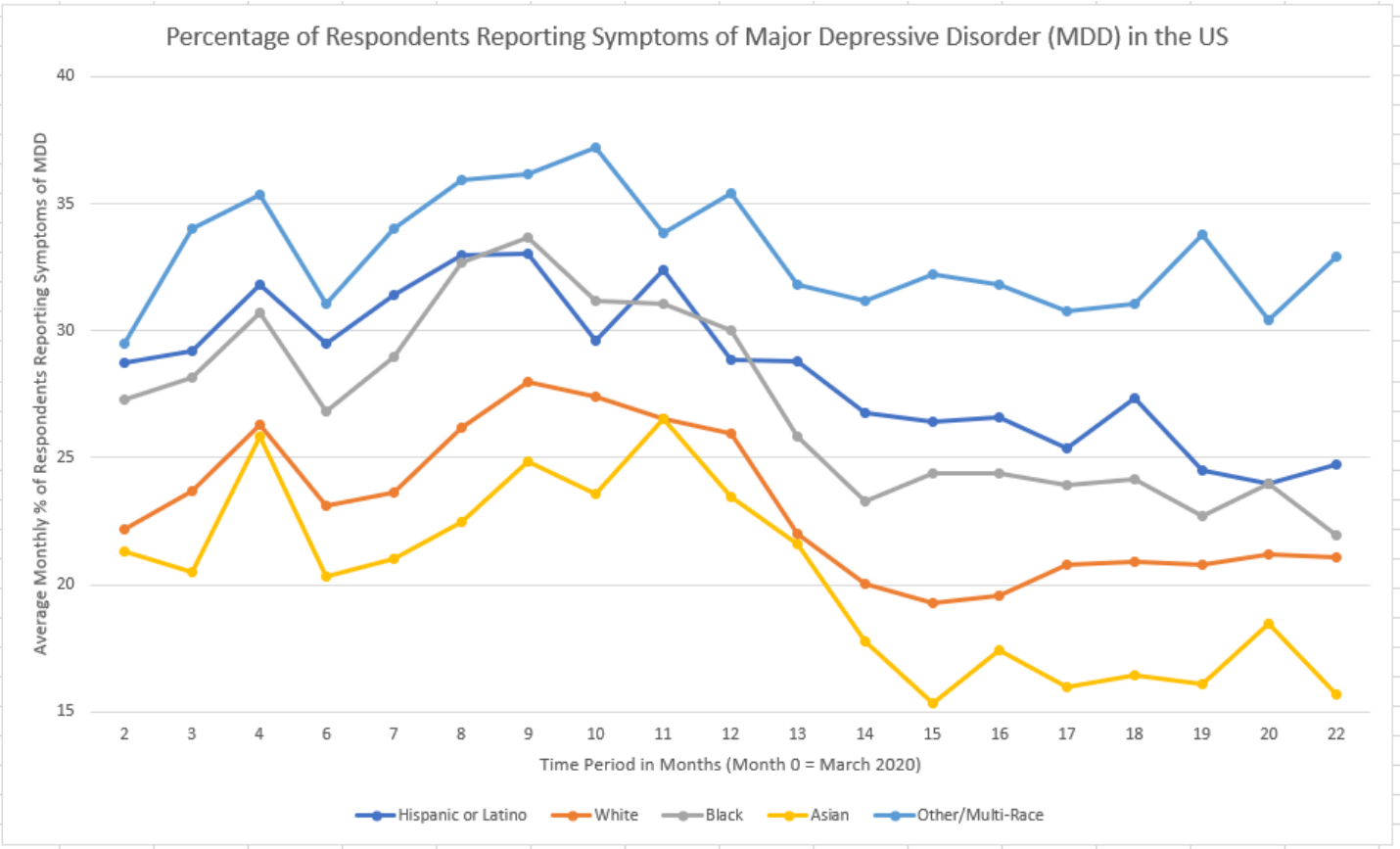
In some respects, this New Jersey-specific observation is consistent with data from the national sample of the CDC Household Pulse Survey[33]. In the United States, the percentage of respondents reporting symptoms of Generalized Anxiety Disorder (GAD) (**Figure 19**) and Major Depressive Disorder (MDD) (**Figure 20**) was consistently the greatest amongst the group identifying as Other/Mixed Race and consistently the lowest amongst the group identifying as Asian during the first 22 months of the pandemic.

Figure 19



[33] **Analysis of data obtained via**: Centers of Disease Control and Prevention - Household Pulse Survey. Accessed online at: https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

Figure 20



However, the New Jersey-specific observations from the Hughes Center Poll diverges from the national sample of the CDC Household Pulse Survey in that, nationally, Hispanic respondents consistently (with some exceptions) report symptoms of GAD and MDD at greater rates than Black respondents, who in turn consistently (with some exceptions) report symptoms of these two disorders at greater rates than White respondents. In contrast, in New Jersey, White respondents reported worsening mental health due to the pandemic at greater rates than Black respondents, who in turn reported worsening mental health due to the pandemic at greater rates than Hispanic respondents. Other research based on polls conducted between February and June 2021 has demonstrated that in both the United States and the UK, racial minorities in each country

were more likely to screen positive for depression and anxiety than White participants[34]. The reasoning behind this discrepancy is unclear. However, it is important to acknowledge two things. First, the measures being compared between these data sources are not the same. The Hughes Center Poll assessed the percentage of individuals who believed that their mental health worsened due to the pandemic whereas the CDC Household Pulse Survey and the United States/UK study assessed the prevalence of mental health at the time of the survey in the midst of the pandemic without considering how this may have changed relative to before the pandemic. Thus, it is entirely possible that some individuals may have experienced symptoms of these mental health disorders during the pandemic to a degree that did not differ from how they experienced it prior to the pandemic (resulting in a case where the individual does not believe the pandemic changed their mental health). Second, the New Jersey-sample of the Hughes Center poll was not able to obtain large samples of racial minority groups (see the x-axis of **Figure 18** for sample sizes per race group). Thus, it is unclear how representative the racial minority subsamples in the Hughes Center Poll were of the general New Jersey populations of these groups. Considering this, the Hughes Center Poll results may not be providing an accurate assessment of the mental health of New Jersey racial minorities during the pandemic.

Suicidal Behaviors

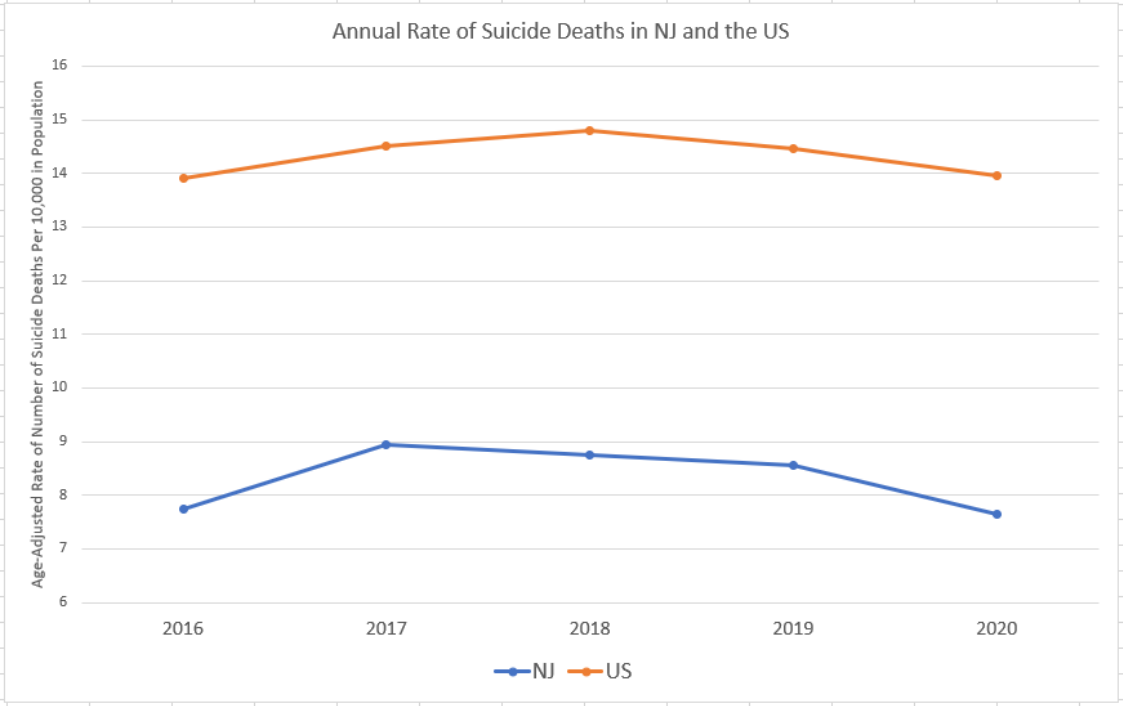
Relative to 2019, the rate of suicide deaths decreased in 2020 in both New Jersey (by 10.9%) and, to a lesser extent, the United States (by 3.6%)[35] (see **Figure 21**). This drop in the suicide rate may not be specifically related to the pandemic, as there was a trend in both New Jersey (starting in 2018) and the United States (starting in 2019) for annual rate of suicide deaths to decrease. This observation is generally, although not entirely, consistent with trends observed worldwide. In an analysis of 21 countries performed by the World

[34] **Source**: Nguyen L.H., Anyane-Yeboa A., Klaser K., Merino J., Drew DA., Ma W, et al. (2022) The mental health burden of racial and ethnic minorities during the COVID-19 pandemic. *PLoS ONE 17(8)*, e0271661.

[35] **Analysis of data obtained via**: Centers for Disease Control and Prevention Web-based Injury Statistics Query and Reporting System: Fatal Injury Reports, National, Regional and State, 1981-2020. Accessed online at: https://wisqars.cdc.gov/fatal-reports

Health Organization[36], none of the countries experienced an increase in suicide deaths during the first four months of the pandemic. Twelve of the countries (including the United States) saw a drop in suicide deaths during this time period. Extending the time period out to October 2020, three additional countries/territories saw a drop in suicide deaths, whereas four countries/territories were observed to have an increase in suicide deaths (Vienna, Austria, Japan and Puerto Rico).

Figure 21



The rate of suicide deaths in New Jersey has historically varied between various race-, sex- and age-based groups (see **Figure 22**, **Figure 23** and **Figure 24**)[37]. With respect to race, it has consistently been the case since at least 2016 that White residents commit suicide more often than Asian residents, who in turn generally commit suicide more often than Black residents (except for 2018, where the rate of Asian and Black suicides were similar) (**Figure 22**). While the number of suicides in 2020 decreased relative to 2019 for White residents

[36] **Source**: World Health Organization (2022). Mental health and COVID-19: Early evidence of the pandemic's impact: Scientific brief, 2 March 2022. Accessed online from: https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022.1

[37] **Analysis of data obtained via**: New Jersey State Health Assessment Data (NJSHAD) – New Jersey Mortality Data. Accessed online at: https://www-doh.state.nj.us/doh-shad/query/selection/mort/MortSelection.html

(by 12.4%) and for Black residents (by 29.2%), the number of suicides increased in 2020 for Asian residents by 8.7% despite an annual trend of yearly decreases in Asian suicides that began in 2018. One may speculate that such a race-specific increase is related to reports of elevated levels of racism towards Americans with Asian descent that have occurred during the pandemic[38], racism that is presumably due, to some extent, to the Chinese origin of the COVID-19 virus.

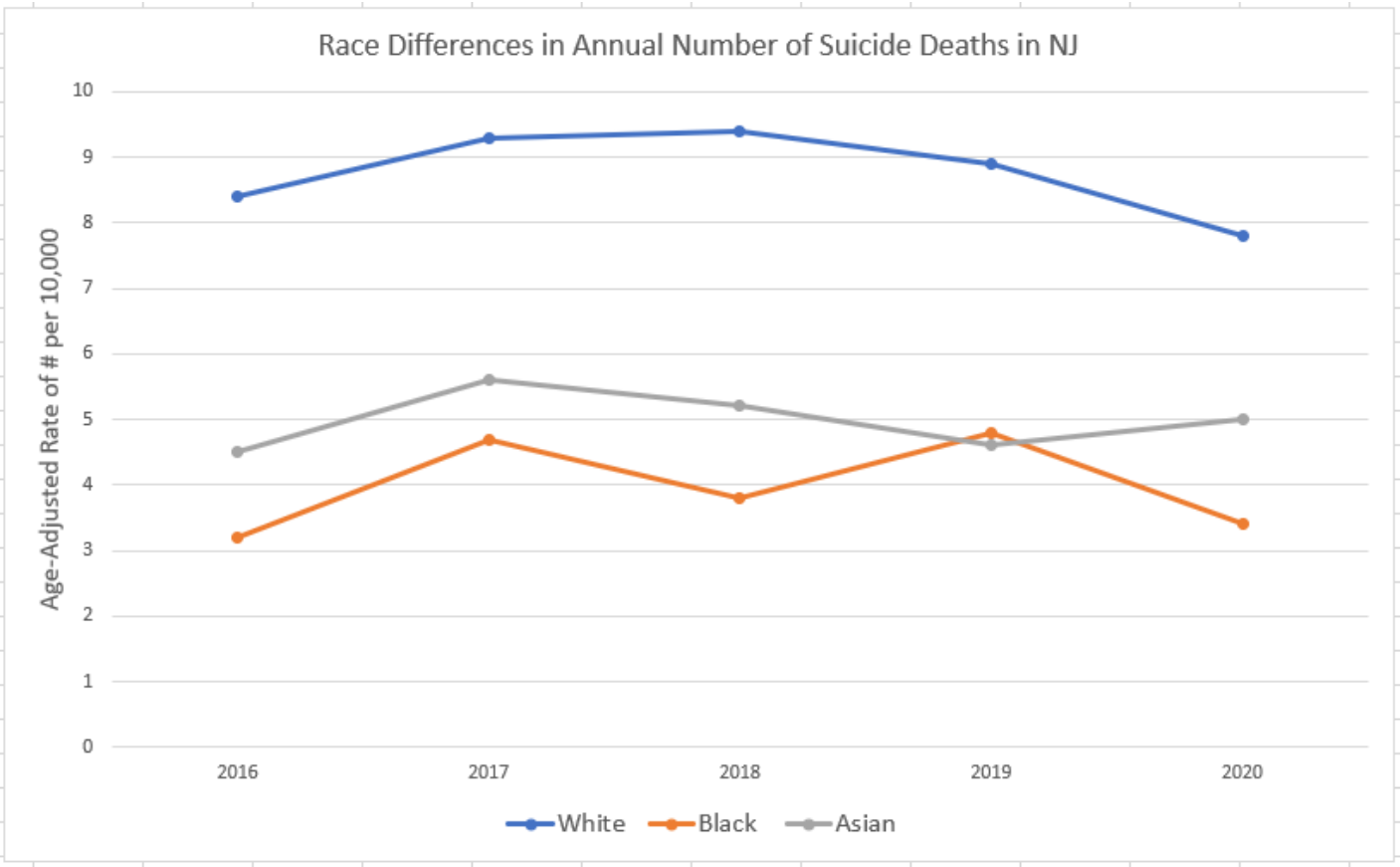
With respect to sex, it has consistently been the case since at least 2016 that males commit suicide more often than females in New Jersey (**Figure 23**), an observation that has historically been observed worldwide[39]. Although it has generally been the case that the New Jersey suicide rates for males and females decreased in the two years prior to the pandemic, the female suicide rate decreased from 2019 to 2020 to a greater degree (17.9% decrease) than it did for males (8.8% decrease).

With respect to age-related differences assessed between 2016 and 2020, the picture is not clearly as consistent as it is for race- and sex-based differences. However, it is generally the case that individuals aged between 45 and 64 years commit suicide more often than individuals in other age groups, and that, for most years (except for 2018), individuals aged 15-24 years commit suicide the least often (**Figure 24**). Further, despite decreases in the 2020 suicide rate (relative to 2019) for those aged 15-24 years (by 1.4%), 35-44 years (by 28.8%), 45-54 years (by 17.1%) and 55-64 years (by 24.6%), it was observed that the suicide rate increased in 2020 for those aged 25-34 years (by 2.0%) and to a greater degree for those aged 65-74 years (by 11.2%) and 75-84 years (by 11.0%). Such increases in suicide deaths in older populations may be partially due to increases in the degree of social isolation, feelings of loneliness, and feelings of a lack of companionship that was

[38] **Source**: Wong-Padoongpatt, G., Barrita, A., King, A. & Strong, M. (2022). The slow violence of racism on Asian Americans during the COVID-19 pandemic. *Frontiers in Public Health, 10*, 1-15.
[39] **Source**: World Health Organization (2019). Suicide in the world. Global Health Estimates. Accessed online at: https://apps.who.int/iris/bitstream/handle/10665/326948/WHO-MSD-MER-19.3-eng.pdf

commonly experienced by older populations during the pandemic[40, 41], especially for those living in nursing homes[42].

Figure 22



[40] **Source**: MacLeod, S., Tkatch, R., Kraemer, S., Fellows, A., McGinn, M., Schaeffer, J. & Yeh, C.S. (2021). COVID-19 Era Social Isolation among Older Adults. *Geriatrics, 6*, 52.

[41] **Source**: Piette, J. (2020). Loneliness Among Older Adults Before and During the COVID-19 Pandemic. Institute for Healthcare Policy and Innovation at the University of Michigan. Accessed online at: https://www.healthyagingpoll.org/reports-more/report/loneliness-among-older-adults-and-during-covid-19-pandemic

[42] **Source**: Abbasi, J. (2020). Social Isolation – the Other COVID-19 Threat in Nursing Homes. *JAMA, 324(7),* 619-620.

Figure 23

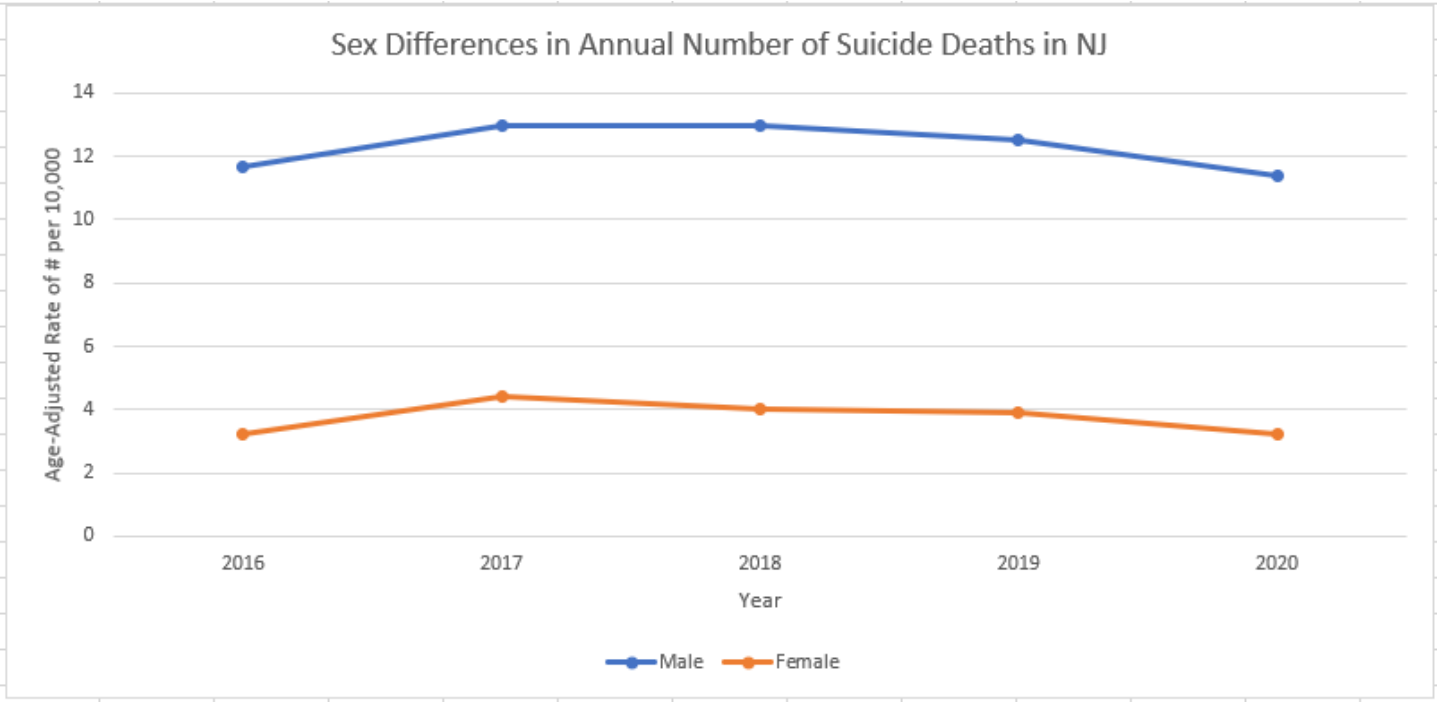
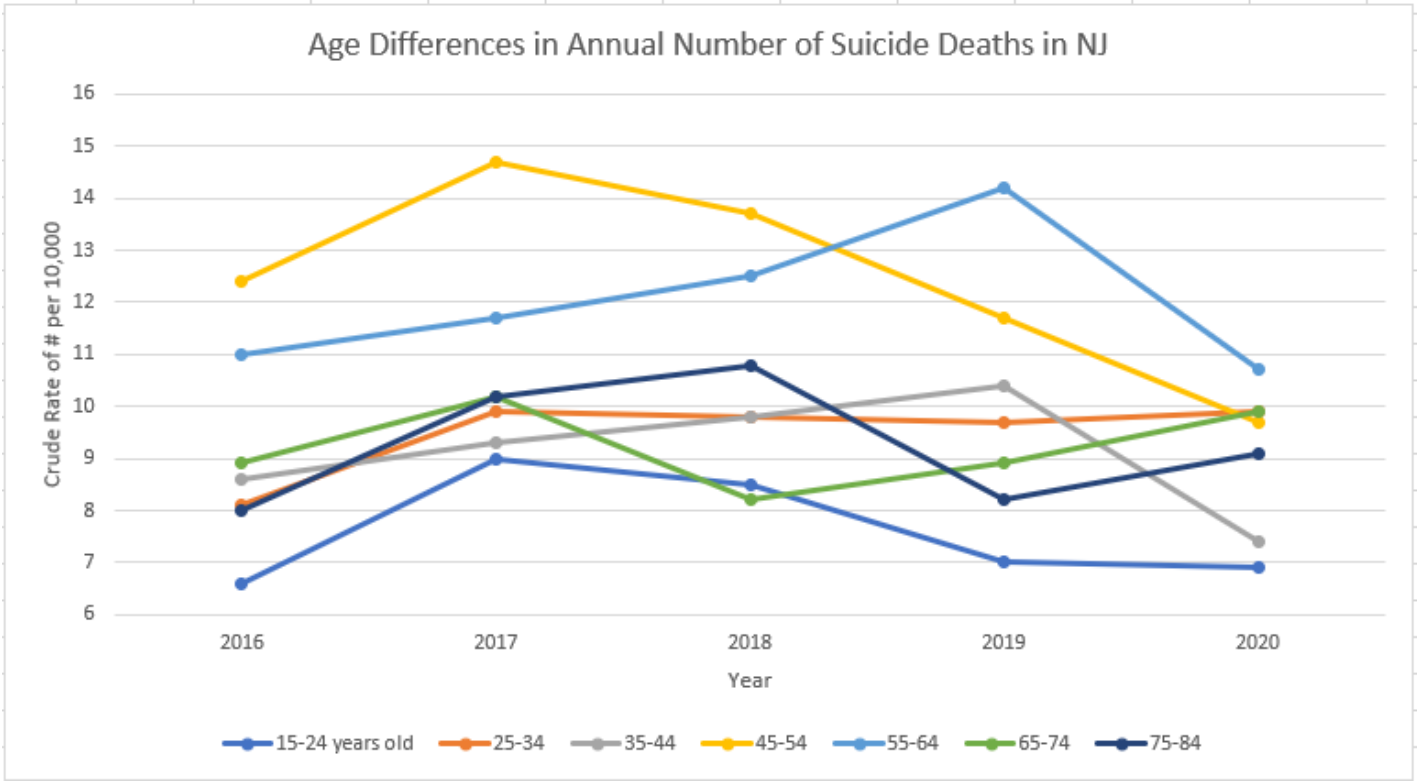


Figure 24



Data analyzed from the National Survey of Drug Use and Mental Health[43] indicated that, in both New Jersey and the United States, the prevalence of having serious thoughts of suicide in the year prior to being surveyed (**Figure 25**) and having attempted suicide in the year prior to being surveyed (**Figure 26**) increased in 2021 relative to 2018/2019 for those aged 18-25 years old (but did not change for those aged 26 years or older). With respect to the prevalence of younger adults having serious thoughts of suicide in the prior year, it is unclear whether the 2021 increase was specifically related to the pandemic. For both the New Jersey and United States samples of 18-24-year-olds, an annual trend of increasing percentages of respondents having serious thoughts of suicide has been observed since at least 2014. For the United States sample, the annual change from 2018/2019 to 2021 seemed to be the same rate of change as observed in yearly changes prior to the pandemic. In contrast, the degree of change in 2021 relative to 2018/2019 was somewhat greater than the rates of annual change observed in years prior to the pandemic. Thus, at least for New Jersey, it may be the case that the pandemic resulted in an even greater increase in suicidal thoughts in young adults than what may have been expected in 2021 if the pandemic did not occur. However, the absence of 2020 data (2020 state-specific data for NSDUH is not publicly available) here makes this a difficult source of evidence to use to establish this, as we cannot assess the change between 2019-2020 and 2020-2021.

[43] **Analysis of data obtained via**: Substance Abuse and Mental Health Services Administration (SAMHSA). National Survey on Drug Use and Mental Health (NSDUH) – State Reports. Accessed online at: https://www.samhsa.gov/data/nsduh/state-reports

Figure 25

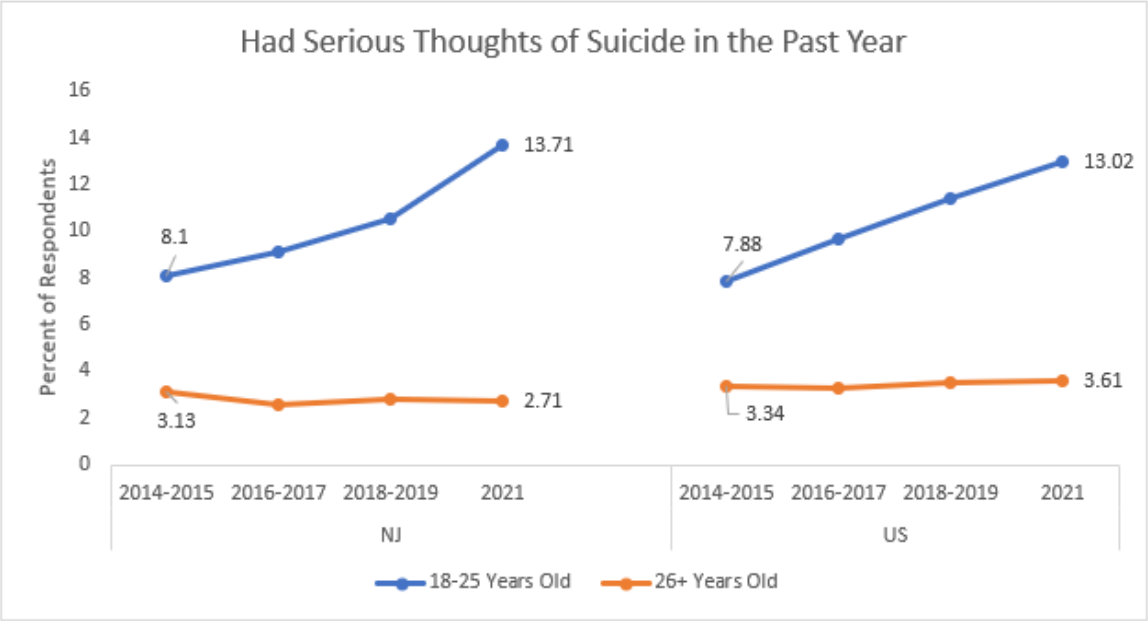
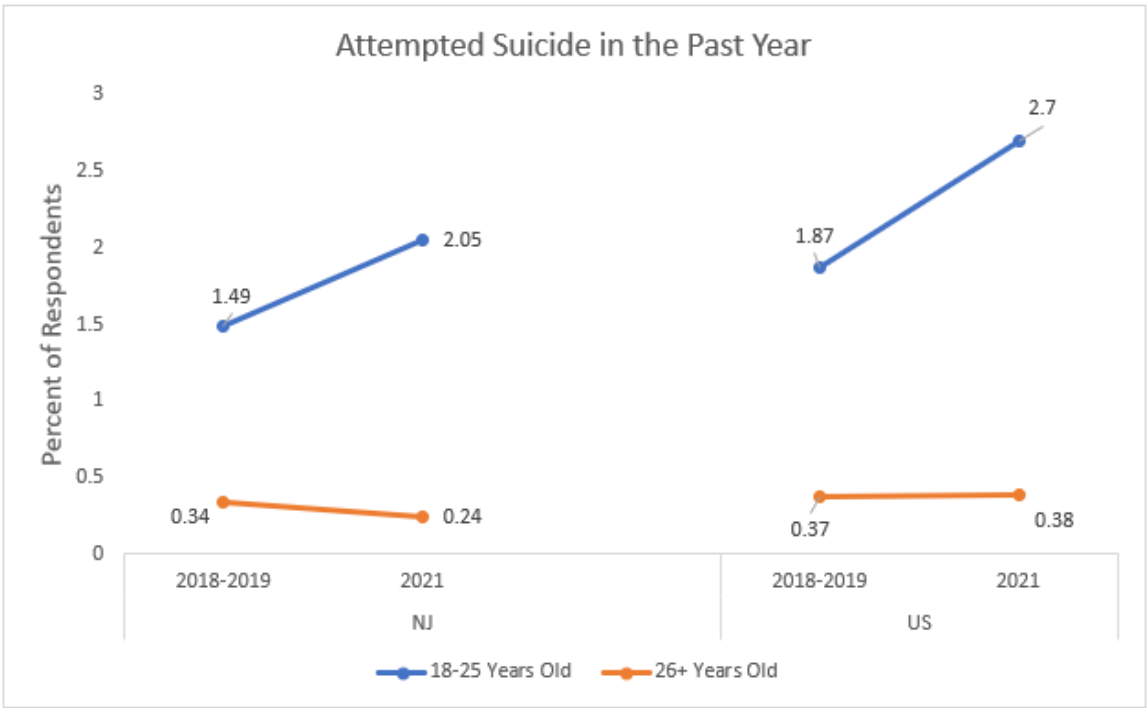


Figure 26



Substance Use and Abuse

According to the Hughes Center Poll of New Jersey residents, 19.3% of respondents indicated that the amount of alcohol and/or recreational drugs they consumed increased during the pandemic (see **Figure 27**). Of these individuals, 40.4% indicated that their increased use of these substances remains at elevated levels relative to the amount they used prior to the pandemic (representing approximately 8% of the total sample). We observed age-based differences in relation to how alcohol and/or recreational drug use changed during the pandemic (see **Figure 28**). The New Jersey age group that was most likely to report increased consumption of these substances during the pandemic were those aged 30-49 years (26.6%) and the New Jersey age group that was least likely to have increased consumption of these substances during the pandemic were those aged 65 years or older (5.2%).

Self-reported increases in alcohol and/or recreational drug use in New Jersey residents are generally consistent with national observations. One national survey administered to 5,000 United States residents in April-May 2021[44] observed that 31% of alcohol users indicated that they have consumed increased amounts of alcohol since the beginning of the pandemic, 26% of alcohol users indicate that they would prefer to drink less alcohol than they currently do, and 6% of alcohol users report drinking 15 or more drinks a week (this 2021 figure is three times greater than it was between the years 2017-2019). With respect to national recreational drug use, 29% of drug users indicated that they have consumed increased amounts of drugs since the beginning of the pandemic and 44% of drug users indicate they would prefer to use less drugs than they currently do.

[44] **Source**: Lifeworks (2021). The Mental Health Index by Lifeworks – Special Edition: Spotlight on addictions in collaboration with the Hazelden Betty Ford Foundation: United States – May 2021. Accessed online at: https://lifeworks.com/media/1059/download

Figure 27

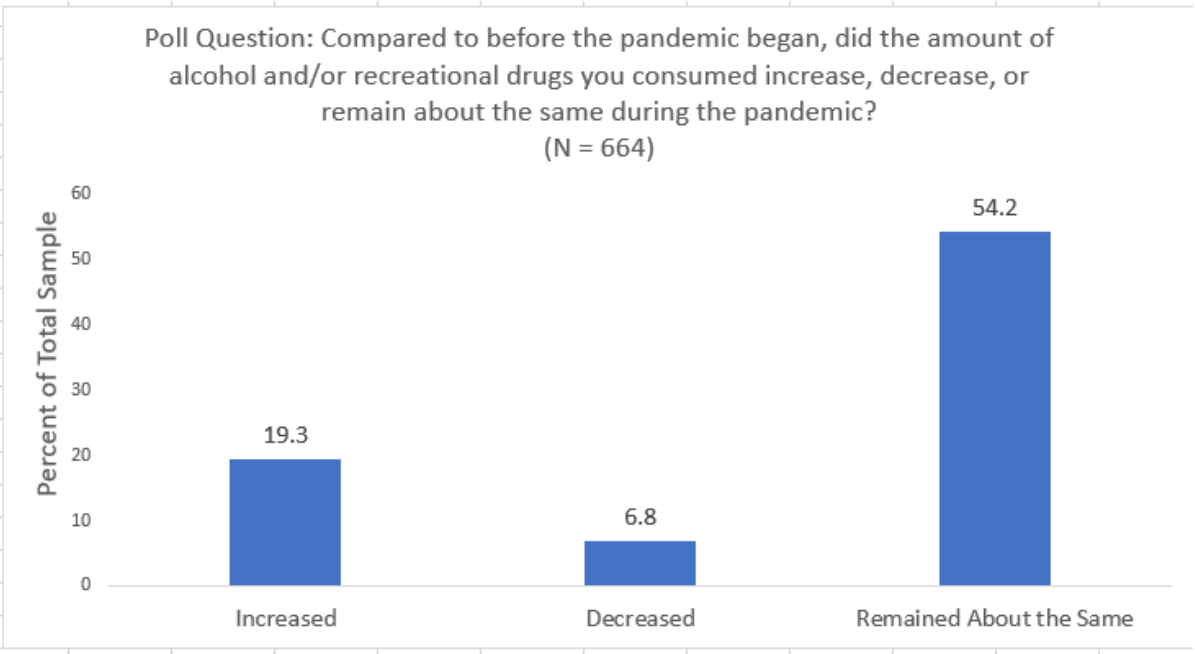
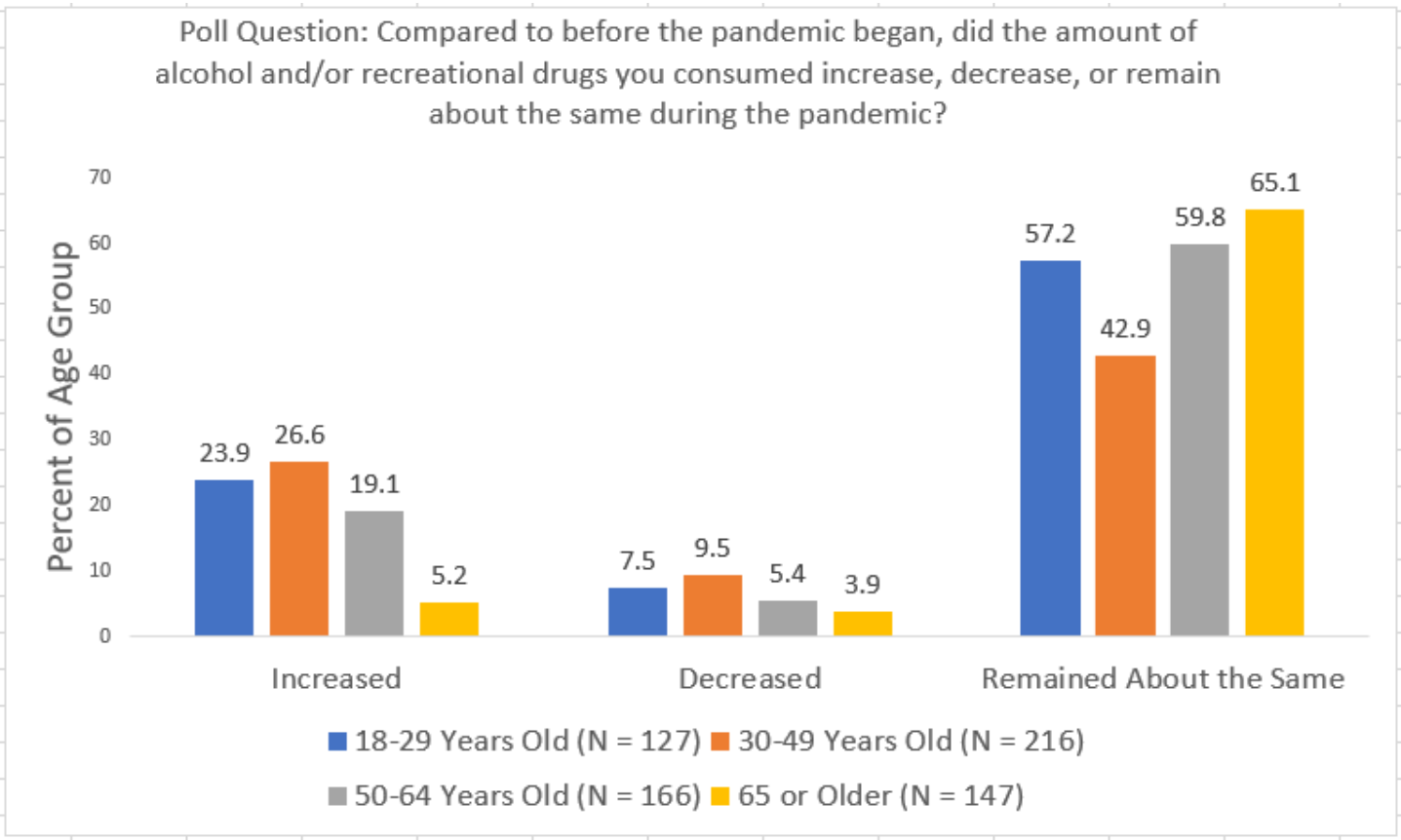
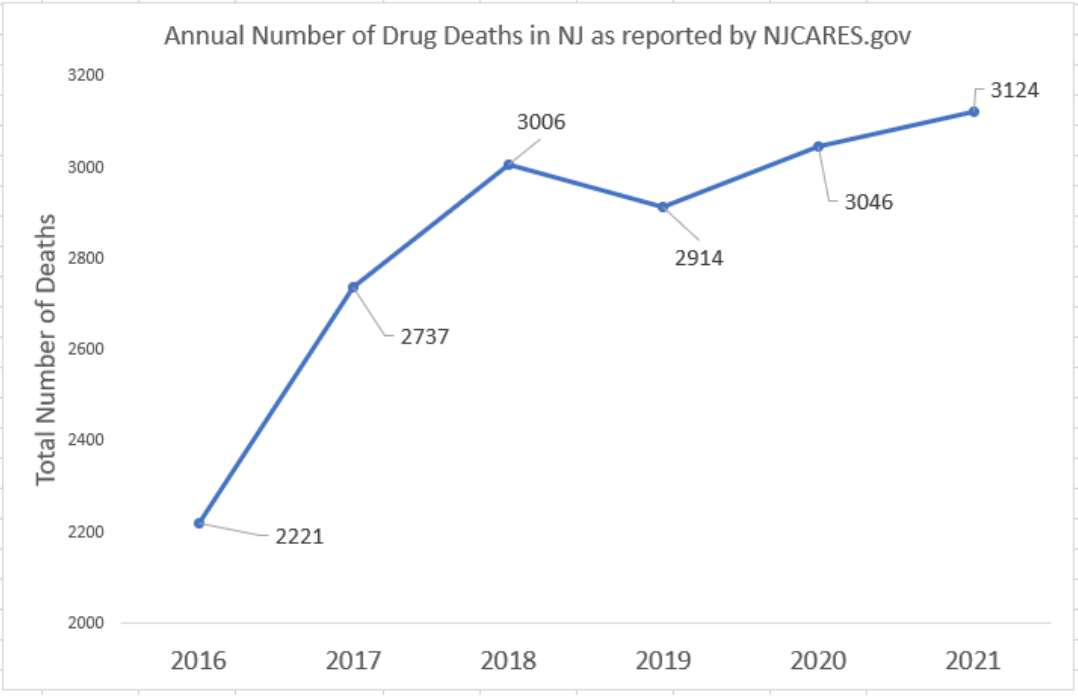


Figure 28



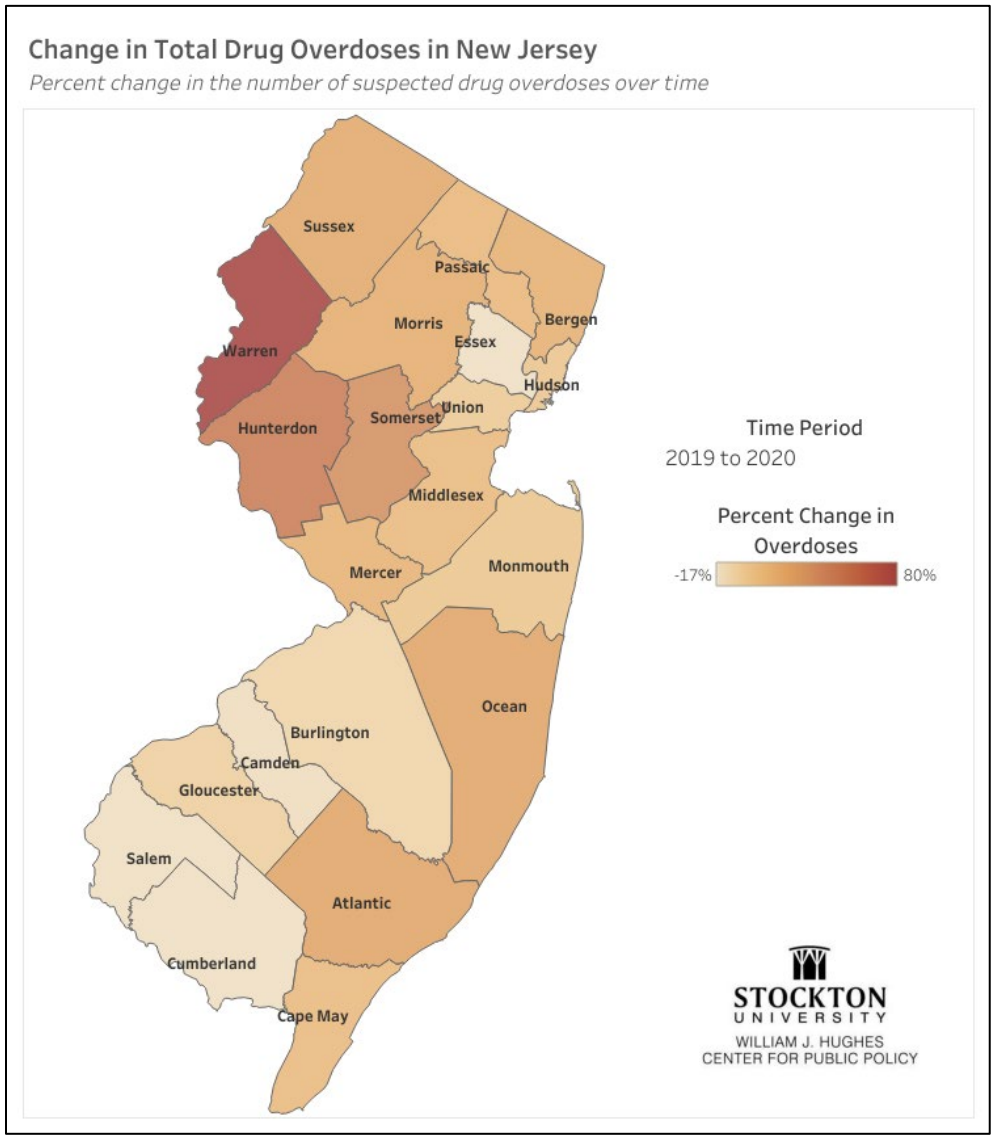
Additionally, an analysis of drug-related deaths in New Jersey[45] indicate that, relative to 2019, the number of drug-related deaths increased by 4.5% in 2020, and then increased another 2.6% in 2021 relative to 2020 (or increased in 2021 by 7.2% relative to 2019) (see **Figure 29**). However, the degree to which the number of drug-related deaths changed in 2020 (relative to 2019) varied by New Jersey county (see **Figure 30**). Twelve of the 21 New Jersey counties were observed to have an increase in drug-related deaths in 2020 (relative to 2019) ranging from increases of 6.8% to 80%. The top five counties showing such increases were Warren (80% increase), Hunterdon (46.2% increase), Somerset (34.0% increase), Ocean (20.1% increase) and Atlantic counties (20.0% increase). Only one New Jersey county was observed to have no change in drug-related deaths in 2020 (Hudson county). Eight of the 21 New Jersey counties were observed to have a decrease in drug-related deaths in 2020 (relative to 2019) ranging from decreases of 0.5% to 16.8%. The top five counties showing such decreases were Essex (16.8% decrease), Cumberland (16.5% decrease), Salem (16.3% decrease), Camden (15.3% decrease) and Burlington counties (9.1% decrease).

Figure 29



[45] **Analysis of data obtained via**: New JerseyCARES.gov. Suspected Drug Related Deaths. Accessed online at: https://www.njoag.gov/programs/nj-cares/nj-cares-suspected-overdose-deaths/

Figure 30

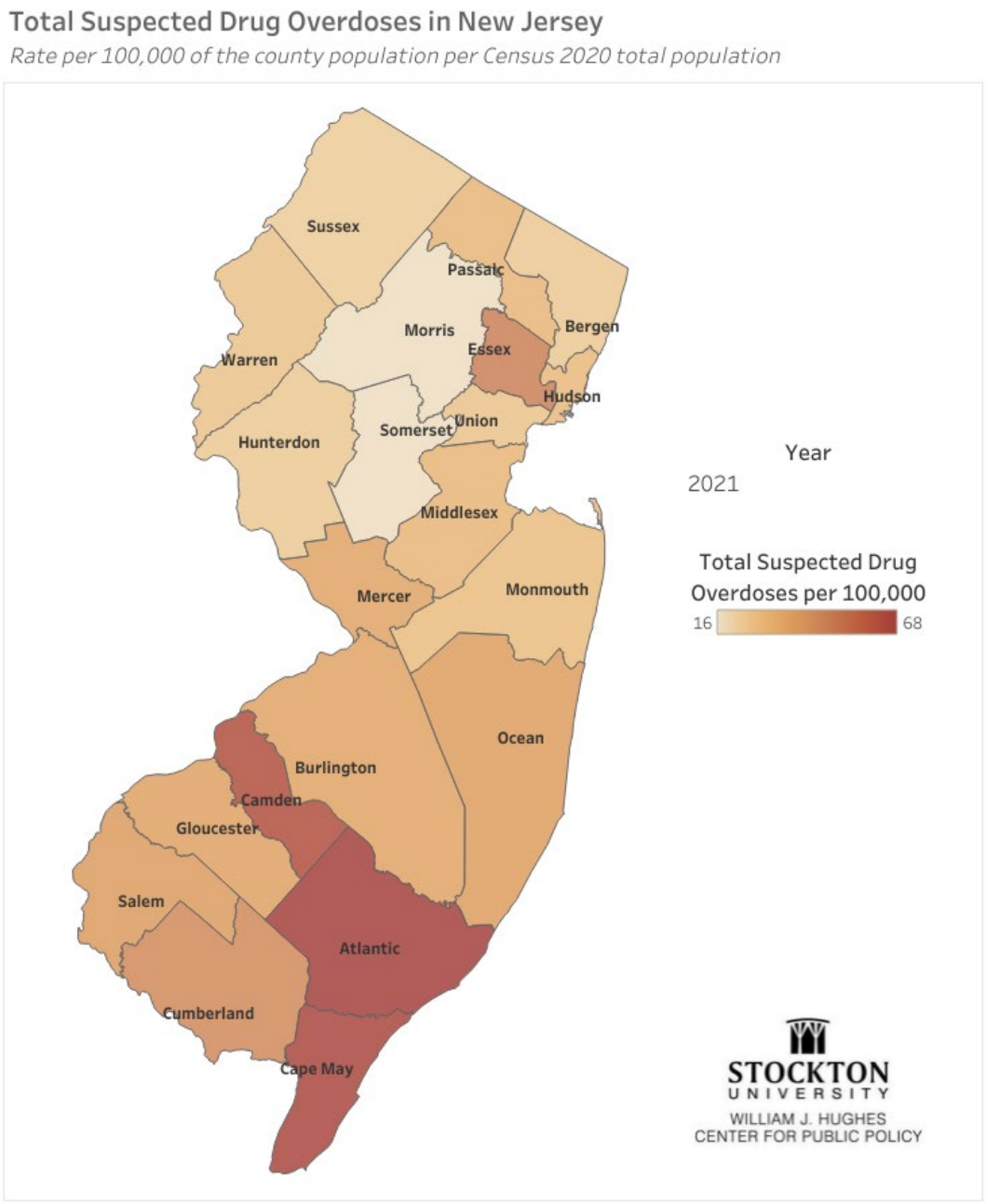


In order to get a sense of which New Jersey counties have been most impacted overall with respect to drug-related deaths, we can compare the 2021 rate of drug-related deaths between counties (see **Figure 31**)[46]. The rate of drug-related deaths varied on a county-level between 16 and 68 deaths for every 100,000 in the county-specific population. The top five counties with the highest drug-related death rates were Atlantic (68.4 rate), Cape May (66.1 rate), Camden (64.0 rate), Essex (47.1 rate) and Cumberland (44.1 rate). The overall pattern indicates that Southern New Jersey counties are generally more impacted by drug-related deaths than

[46] **Analysis of data obtained via**: New JerseyCARES.gov. Suspected Drug Related Deaths. Accessed online at: https://www.njoag.gov/programs/nj-cares/nj-cares-suspected-overdose-deaths/

Northern New Jersey counties, as eight of the top 10 counties in terms of drug-related deaths are found in the southern half of the state (with Essex and Mercer counties being the other two top-10 counties located in either Central or Northern New Jersey).

Figure 31

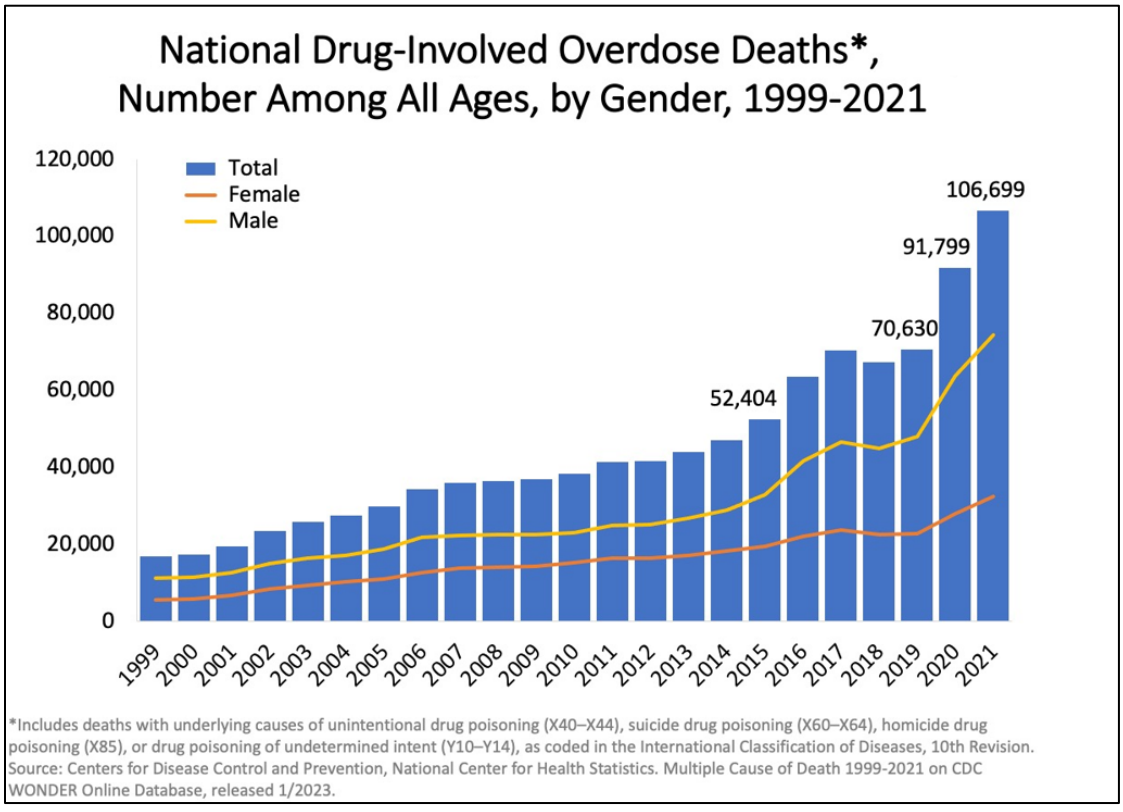


Increases in the total number of drug-related deaths in New Jersey are generally consistent with national trends. **Figure 32** shows that drug-related deaths increased in 2020 (relative to 2019) and in 2021 (relative to

2020)[47]. However, the degree to which drug deaths increased in New Jersey in 2020 and 2021 was substantially less than what was observed nationally. National drug-related deaths increased in 2020 (relative to 2019) by 30.0% (in contrast to the 4.5% increase observed in New Jersey) and increased further in 2021 (relative to 2020) by 16.2% (in contrast to the 2.6% increase observed in New Jersey).

Another similarity between New Jersey and national trends is that drug-related deaths in New Jersey and the United States vary by sex, with males dying due to drug-related causes more commonly than females. In New Jersey, the population of individuals experiencing a drug-related death has consistently been composed of 71%-73% male each year between 2015-2021[48]. This mirrors national trends that are represented in **Figure 32**, where the number of male drug-related deaths has been greater than that for females every year since at least 1999.

Figure 32



[47] **Source of Figures AC**: National Institute on Drug Abuse (2023). Drug Overdose Death Rates. Accessed online from: https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates

[48]**Source**: New Jersey State Police Office of Drug Monitoring & Analysis – New Jersey Drug-Related Death Demographics: January 1 2015-October 15 2021. Accessed online at: https://www.nj.gov/oag/njcares/databyrace/Drug-Related%20Death%20Data.pdf

It is presently unclear whether the increases in drug deaths observed in New Jersey and nationally are associated with pandemic-related factors. For both New Jersey and the United States, the number of drug-related deaths have generally increased each year over the past five years in New Jersey and over the past 21 years in the United States. However, despite the number of New Jersey drug deaths increasing in 2017 and 2018, there was a 3.1% decrease in the number of drug-related deaths in 2019 before the number of drug-deaths began increasing again in 2020 and 2021 (see **Figure 29**). It is unclear whether the 2019 decrease in drug-related deaths in New Jersey was a statistical anomaly or the beginning of a downtrend that was reversed by the pandemic. Further, in the United States, despite annual increases in drug-related deaths being observed every year since 2000 (with the exception of 2018), the rate of increase in 2020 relative to 2019 seems substantially greater than any year assessed since 2000 (see **Figure 32**). This 30% increase in national drug-related deaths seems to closely approximate the 29%-31% of individuals in the United States who have indicated that their alcohol and/or recreational drug intake increased since the beginning of the pandemic as discussed earlier[49]. It is unclear whether there is a connection between these two sets of facts. However, it is clear that something occurred in the nation in 2020 that accelerated the number of drug-related deaths to a degree greater than what one would have expected to observe based on the average annual change in the national drug-related deaths observed in years leading up to the pandemic.

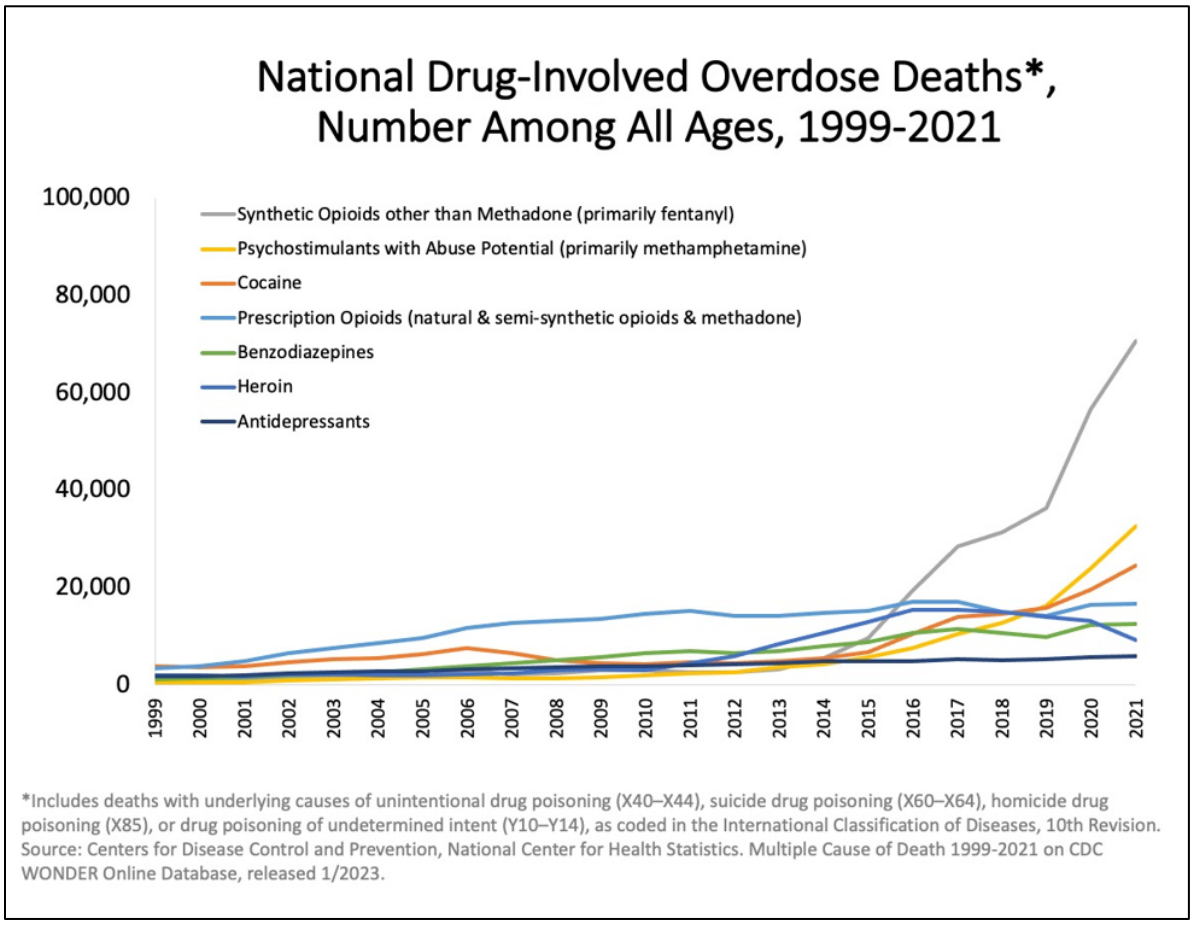
One potential reason for the increase in drug-related deaths in the United States may be due to the increasing supply and use of fentanyl in the United States. Over the past few years, fentanyl has been imported into the United States in higher volumes than in years past. This is evident by reviewing United States Customs and Border Protection (CBP) data that was analyzed by the Washington Office on Latin America (WOLA)[50] (see **Figure 34**). This analysis observed that fentanyl seizures at the U.S.-Mexico border increased 641%

[49] **Source**: Lifeworks (2021). The Mental Health Index by Lifeworks – Special Edition: Spotlight on addictions in collaboration with the Hazelden Betty Ford Foundation: United States – May 2021. Accessed online at: https://lifeworks.com/media/1059/download

[50] **Source of Figure AE**: Isacson, A. (2023, March 24). Weekly U.S.-Mexico Border Update: Fentanyl, CBP One, "Friendship Park". Washington Office of Latin American. Accessed online at: https://www.wola.org/2023/03/weekly-u-s-mexico-border-update-fentanyl-cbp-one-friendship-park/

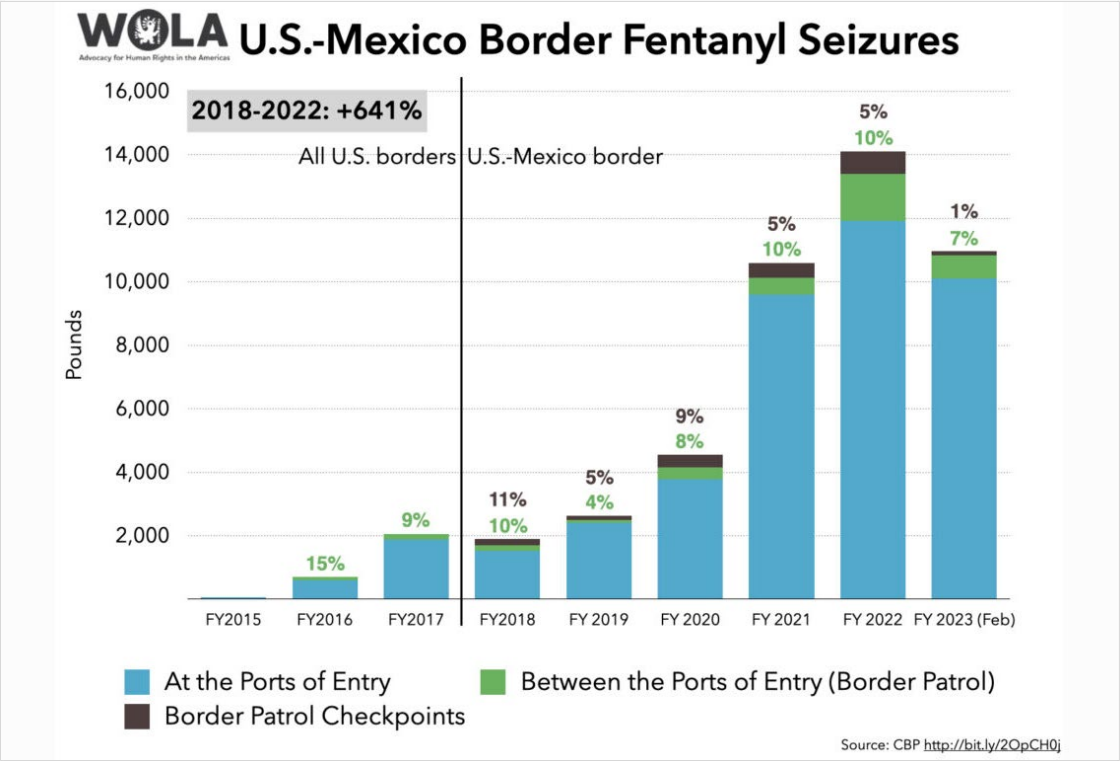
between 2018-2022. There was a particularly large increase in the volume of fentanyl seized at the border in FY2021 (defined as October 2020 to September 2021) relative to the prior fiscal year (FY 2020: October 2019 to September 2020). This has generally coincided with national drug-related death statistics specifically pertaining to fentanyl. As one can see in **Figure 33**[51], fentanyl has been by far the most common drug whose use resulted in deaths in the United States since 2017. It is also the drug that was associated with the greatest increase in drug-related deaths in 2020 relative to 2019. Thus, the overall increase in drug-related deaths in the United States and New Jersey observed in 2020 may largely be due to increased supply of fentanyl throughout the nation.

Figure 33



[51] **Source of Figure AD**: National Institute on Drug Abuse (2023). Drug Overdose Death Rates. Accessed online from: https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates

Figure 34



Child Maltreatment

Early into the pandemic when "stay at home" orders were being issued by most state governments, there were concerns that, with more parents and children staying at home from work and school, instances of child abuse would increase[52]. One researcher[53] posited that societal lockdowns due to the pandemic may increase rates of parental burnout due to increased instances of parents being challenged with balancing their work life with increased child-care burdens or dealing with the financial stress stemming from loss of employment. Prior research has demonstrated the experience of parental burnout is associated with elevated levels of mental and physical exhaustion, poorer sleep quality, and emotional distancing from children. Further, the chances of experiencing parental burnout are predicted by factors that were more common during the pandemic, such as

[52] **Source**: Wu, Q. & Xu, Y. (2020). Parenting stress and risk of child maltreatment during the COVID-19 pandemic: A family stress theory-informed perspective. *Developmental Child Welfare, 2 (3),* 180-196.
[53] **Source**: Griffith, A.K. (2022). Parental Burnout and Child Maltreatment During the COVID-19 Pandemic. *Journal of Family Violence, 37 (5)*, 725-731.

parental unemployment, financial insecurity, lower levels of social support from family and friends, and from decreased amounts of leisure time. Further, it has been demonstrated that the experience of parental burnout is associated with increased instances of child abuse and neglect. Therefore, it was predicted by some that the pandemic would increase rates of parental burnout, which in turn, may increase rates of child maltreatment.

Research has demonstrated that experiences of child abuse and neglect are associated with long-term negative impacts on the mental health of the abused victim[54]. Therefore, an important question to assess is whether instances of child maltreatment increased in New Jersey during the pandemic. Studying the frequency of incidents of child abuse and neglect is challenging, as it is difficult for researchers to have access to child victims and assess their experiences. Studies that have assessed pandemic-era changes in the frequency of child maltreatment have generally relied on two methodological approaches. The first is to analyze data reflecting instances of suspected and confirmed child abuse and neglect as reported to Child Protective Service (CPS) agencies. The second is to analyze data pertaining to suspected and confirmed instances of child abuse and neglect as diagnosed during visits to hospital emergency rooms (ERs). Below, we will discuss New Jersey-specific findings that were discovered utilizing these two methods. However, it is important to acknowledge that these methods are limited in that it is likely many incidents of abuse and neglect are not reported to CPS agencies and/or do not result in visits to hospital ERs.

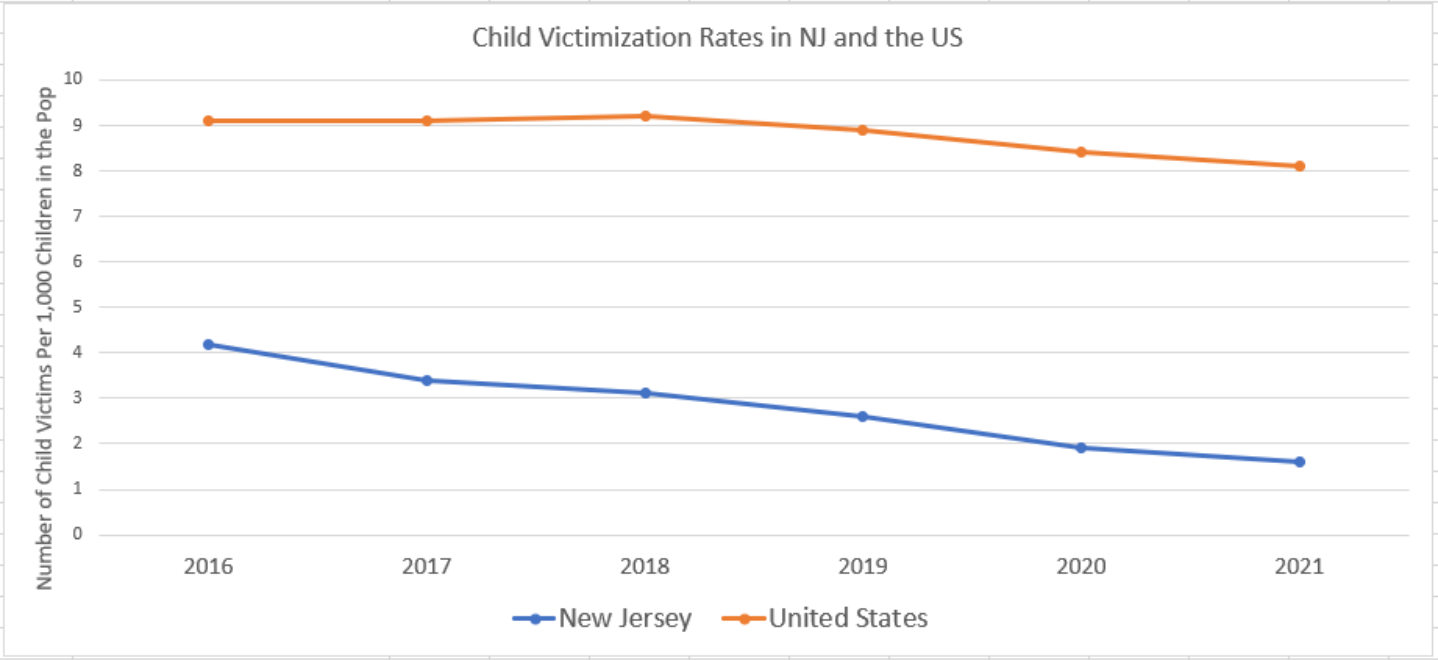
Instances of Child Maltreatment Reported to CPS Agencies. New Jersey and national statistics reported in this section are based on analyses of the *Child Maltreatment* reports that are published annually by the United States Department of Health and Human Services in collaboration with other organizations[55]. These reports compile data pertaining to instances of child abuse and neglect that are identified by state Child Protective Services agencies and reported to the National Child Abuse and Neglect Data System (NCANDS).

[54] **Source**: Strathearn, L., Giannotti, M., Mills, R., Kisley, S., Najman, J. & Abajobir, A. (2020). Long-term Cognitive, Psychological, and Health Outcomes Associated With Child Abuse and Neglect. *Pediatrics, 146 (4),* e20200438.

[55] **Source**: U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. Child Maltreatment. Accessed online at: https://www.acf.hhs.gov/cb/data-research/child-maltreatment

Figure 35 displays the New Jersey and United States child victimization rate between the years 2016-2021[56]. The New Jersey child victimization rate has consistently been less than the national average every year since at least 2016. In 2020 (relative to 2019), the rate of child victimization decreased by 26.9% in New Jersey and by 5.6% in the United States. In 2021 (relative to 2020), the child victimization rate decreased further by 15.8% in New Jersey and by 3.6% in the United States.

Figure 35



Are the child victimization rate decreases observed in New Jersey and the United States in 2020 and 2021 related to the pandemic, or a continuation of trends existing prior to the pandemic? For New Jersey, the decreases observed in 2020 and 2021 seemed to be a continuation of an annual trend of decreasing victimization rates going back to at least 2016. However, the 26.9% decrease observed in 2020 was larger decline than the average annual change in the child victimization rate observed between the years 2016 and 2019 (14.7% average decrease). Thus, in New Jersey, at least some portion of the decreasing child rate may be related to

[56] A child victim is defined in the Child Maltreatment Reports as: "*a child for whom the state determined at least one maltreatment was substantiated or indicated; and a disposition of substantiated or indicated was assigned for a child in a report. This includes a child who died and the death was confirmed to be the result of child abuse and neglect*"

pandemic-specific factors. For the United States, the child victimization rate remained relatively stable between 2016 and 2018, and then decreased by 3.3% in 2019 (relative to 2018). The 5.6% decrease observed in the United States in 2020 is relatively close to this, and thus, may be a continuation of a trend that began in 2019 that is not related to pandemic-specific factors.

What are the most reported types of child maltreatment? **Figure 36** displays the percentages of each type of maltreatment reported relative to all reported instances of maltreatment. In both New Jersey and the United States, neglect is by far the most common reported type of maltreatment. The next two most common forms of maltreatment in New Jersey and the United States are sexual abuse and physical abuse (with sexual abuse being slightly more common than physical abuse in New Jersey, and the opposite being the case in the United States).

Figure 36

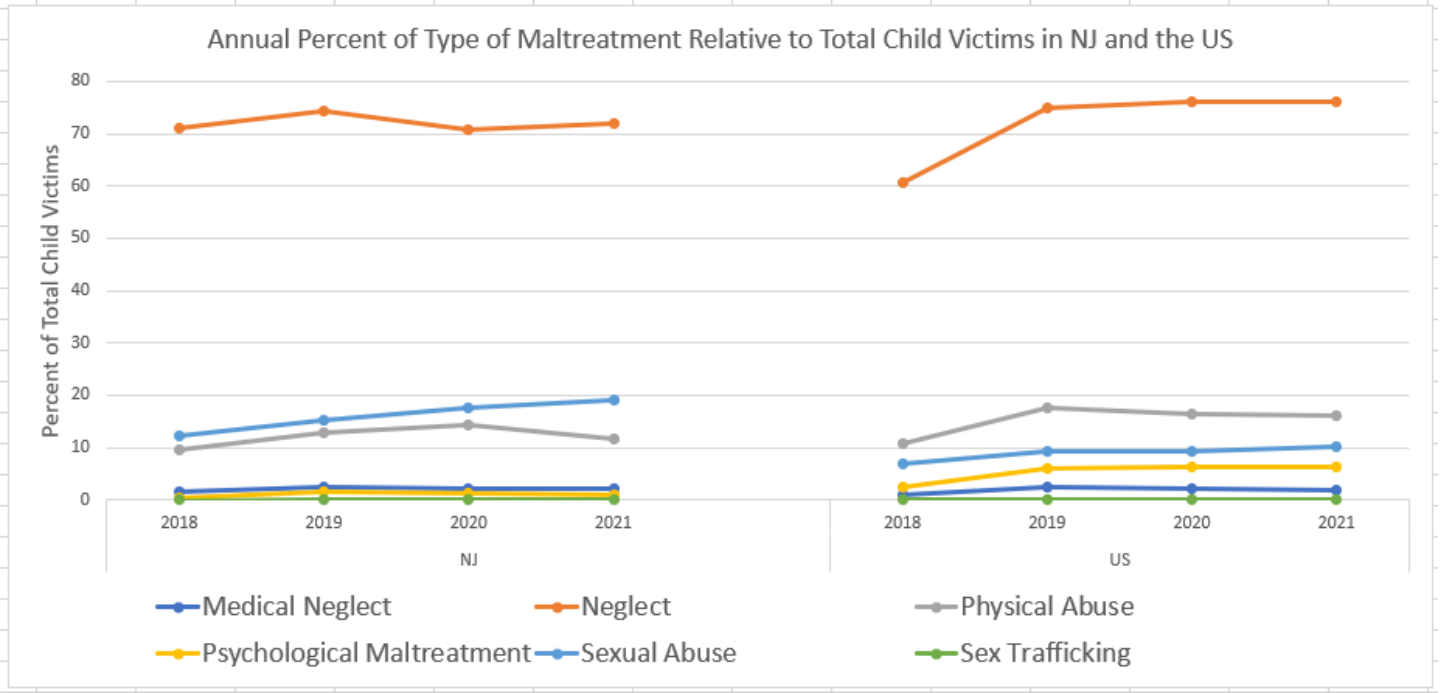
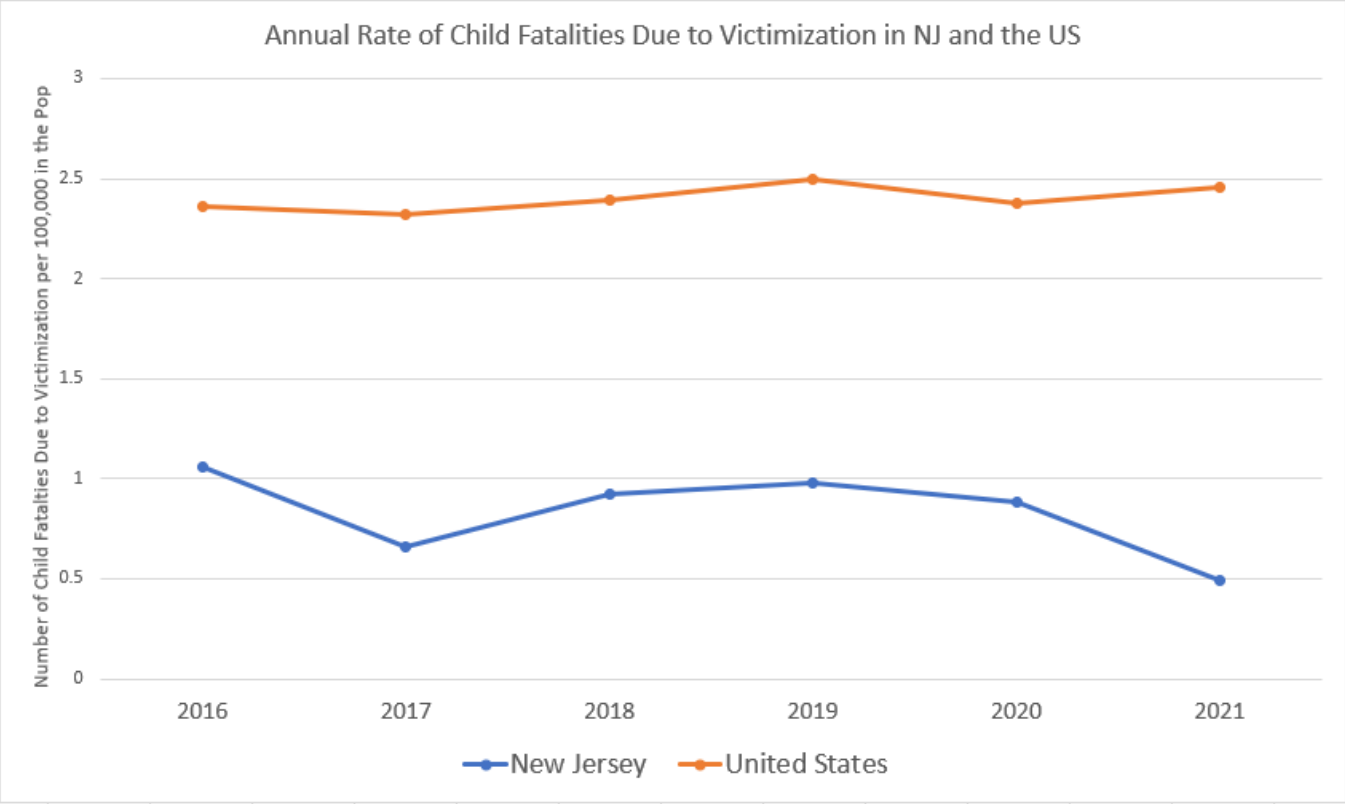


Figure 37 displays the rate of child fatalities due to victimization in both New Jersey and the United States. The child victim fatality rate has consistently been less than that of the United States every year since at least 2016. In New Jersey, despite either increasing or stable rates of the child victim fatality rate occurring between the years 2017-2019, this rate decreased by 10.2% in 2020 (relative to 2019) and an additional 44.3%

in 2021 (relative to 2020). In the United States, despite a trend for increasing child victim fatality rates being observed between the years 2017-2019, this rate decreased by 4.8% in 2020 (relative to 2019) but increased by 3.4% in 2021 (relative to 2020).

Figure 37



The New Jersey and United States child victimization rates varied by sex (**Figure 38**), race (**Figure 39**) and age (**Figure 40a, Figure 40b, Figure 40c**). With respect to sex, girls are victimized at greater rates than boys in both New Jersey and the United States. With respect to race, Pacific Islanders and African Americans have been victimized at greater rates than other race groups in New Jersey. In the United States, American Indians and African Americans have been victimized at greater rates than other race groups. Further, Asians in the United States are victimized at substantially lower rates than other race groups, an observation somewhat, but not entirely consistent with New Jersey victims. With respect to age, children aged less than 1 year are victimized at greater rates than other child/adolescent age groups in both New Jersey and the United States.

Victimization rates did not vary much between other age groups in both New Jersey and the United States, although there is a general trend for victimization rates to slightly increase the younger the child is. Despite overall differences in the victimization rates between these groups, the sex-, and race-based groups did not seem to differ in terms of reductions in the victimization rate over the years and did not seem to differ in terms of how their victimization rates changed in 2020 and 2021 relative to pre-pandemic years.

Figure 38

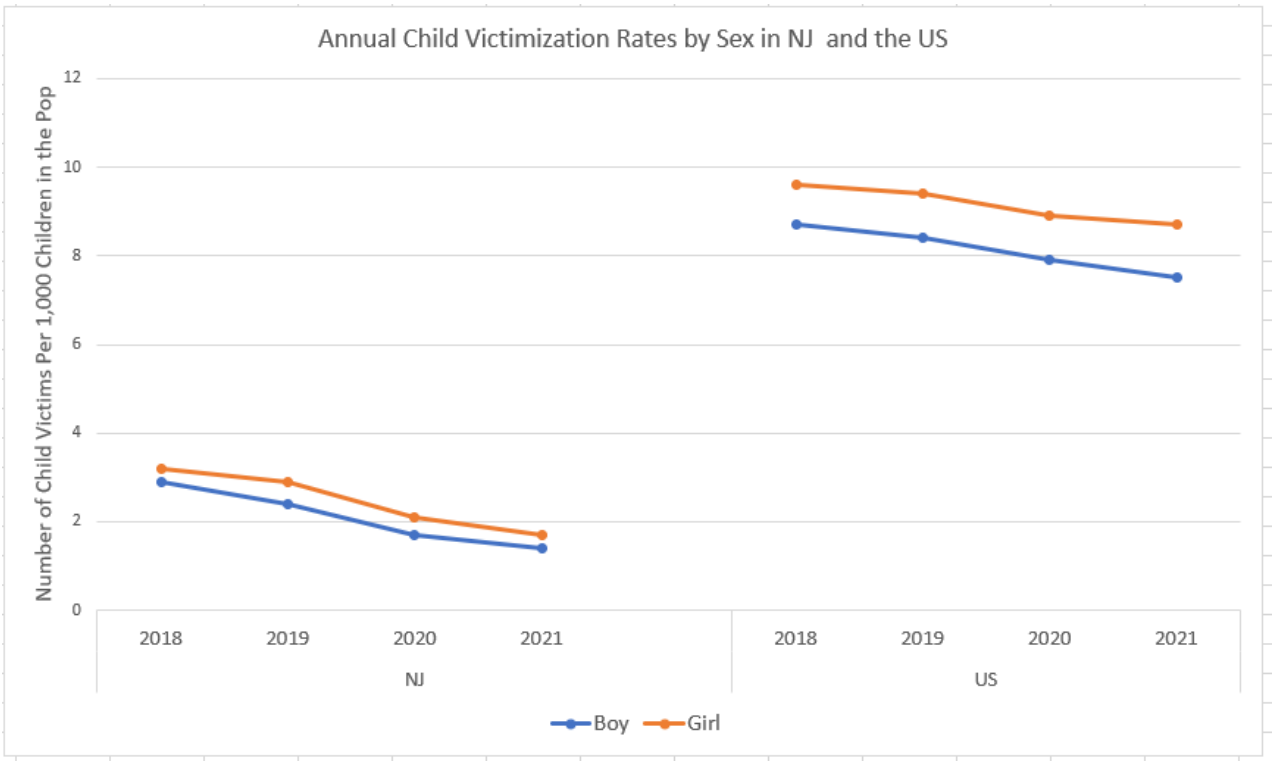


Figure 39

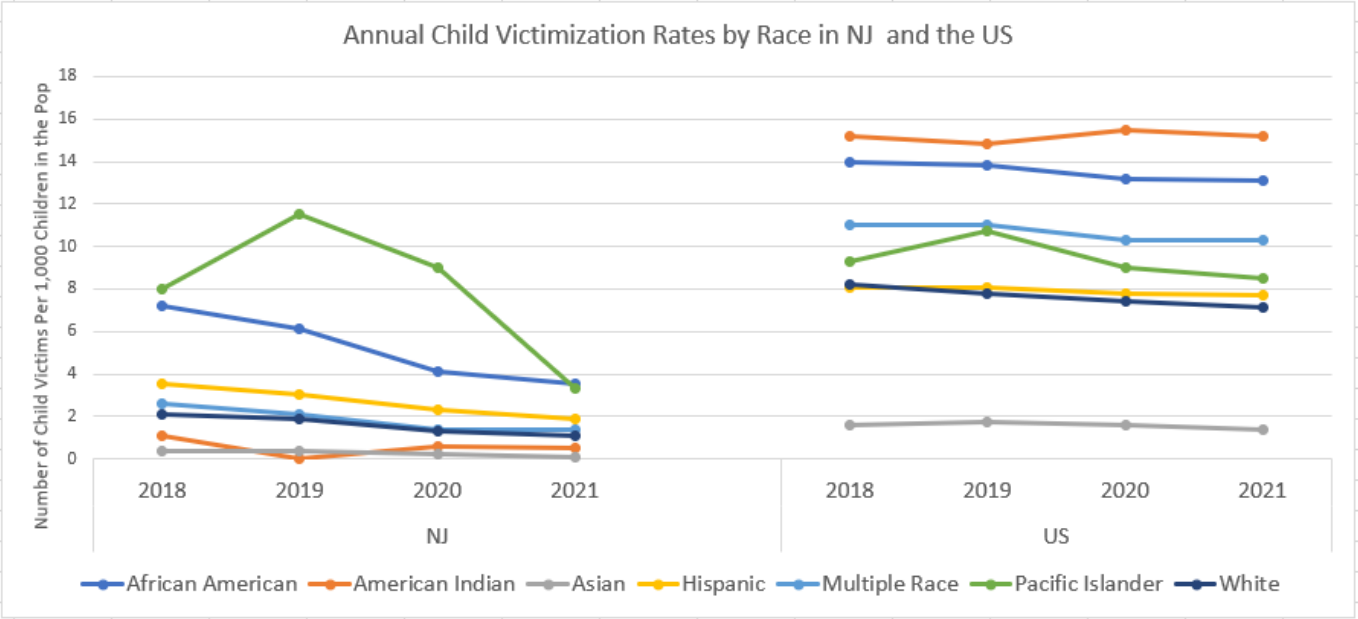


Figure 40a

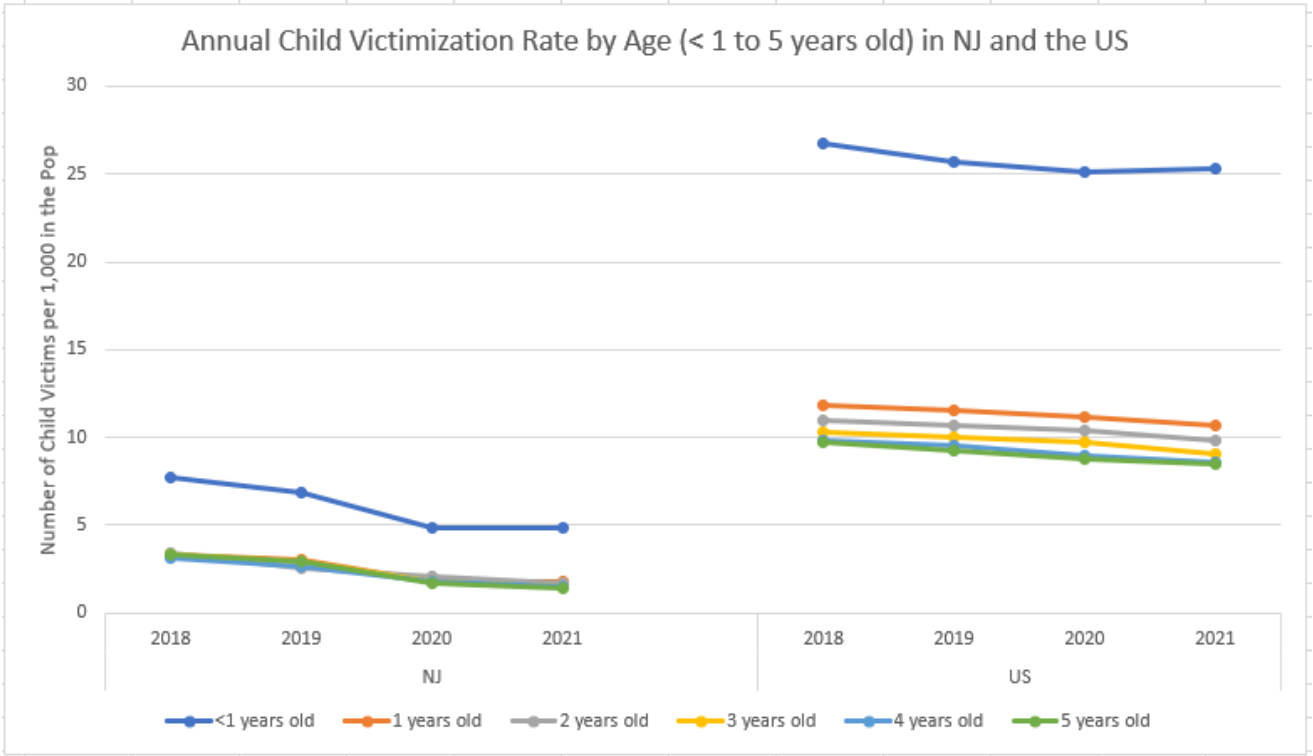


Figure 40b

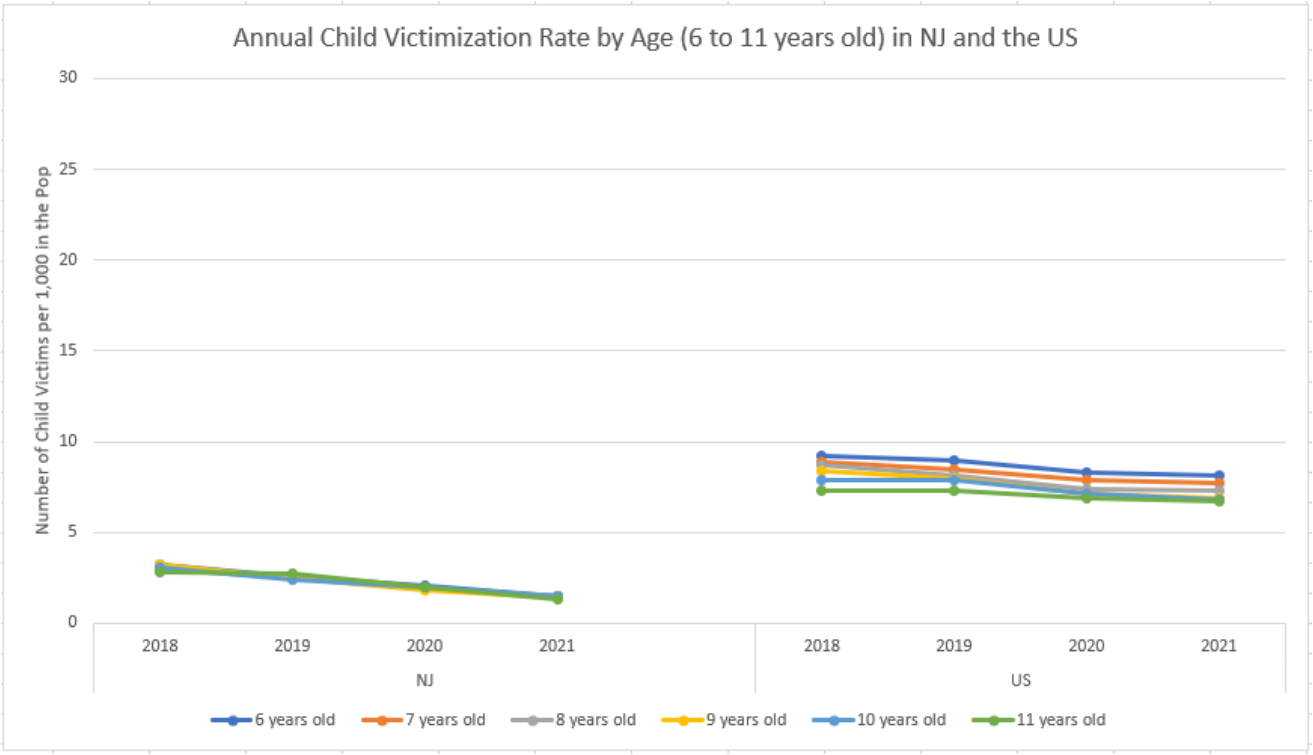
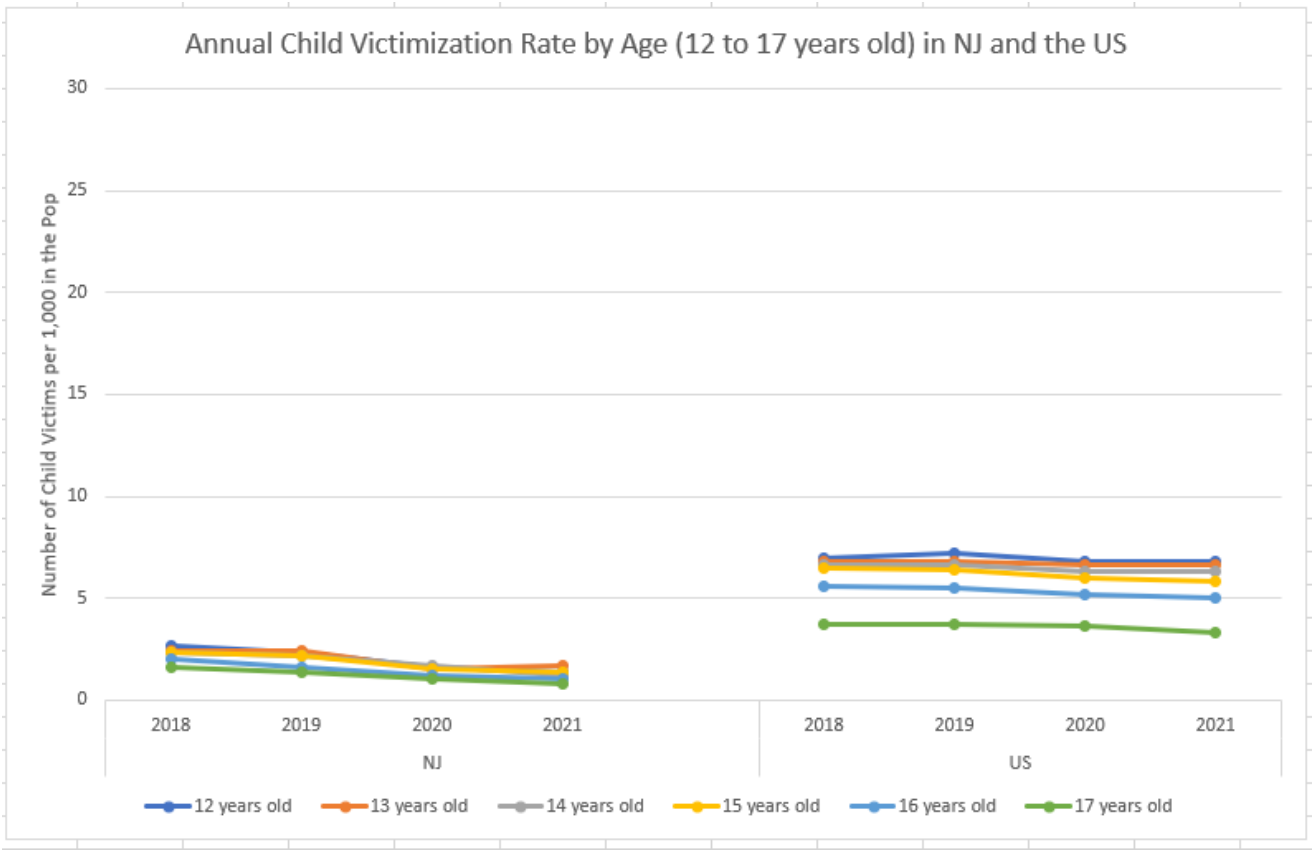


Figure 40c



With respect to age, the degree of reduction in reported victimization rates in 2020 (relative to 2019) did vary by age in both New Jersey (**Figure 41a**) and the United States (**Figure 41b**), although in different ways. In New Jersey, the age group-specific reductions in the 2020 victimization rates ranged from 17% to 41%. Those aged 1 year, 5 years and 13 years were associated with the biggest 2020 decreases in victimization rates. The largest decreases in the child victimization rates were observed for those aged between less than 1 year and 5 years (33% average decrease) and those aged between 12 and 17 years (29.5% average decrease). The victimization rate for those aged between 6 and 11 years decreased to a smaller degree (23% average decrease).

Interestingly, this observation of the youngest and oldest child/adolescent age groups displaying the largest reductions in the victimization rate in 2020 is inconsistent with United States observations, as the child victimization rate decreases in 2020 were larger for those aged between 6 and 11 years (8.3% average decrease) than they were for those aged between less than 1 year and 5 years (3.5% average decrease) and those aged between 12 and 17 years (4.7% average decrease).

Figure 41a

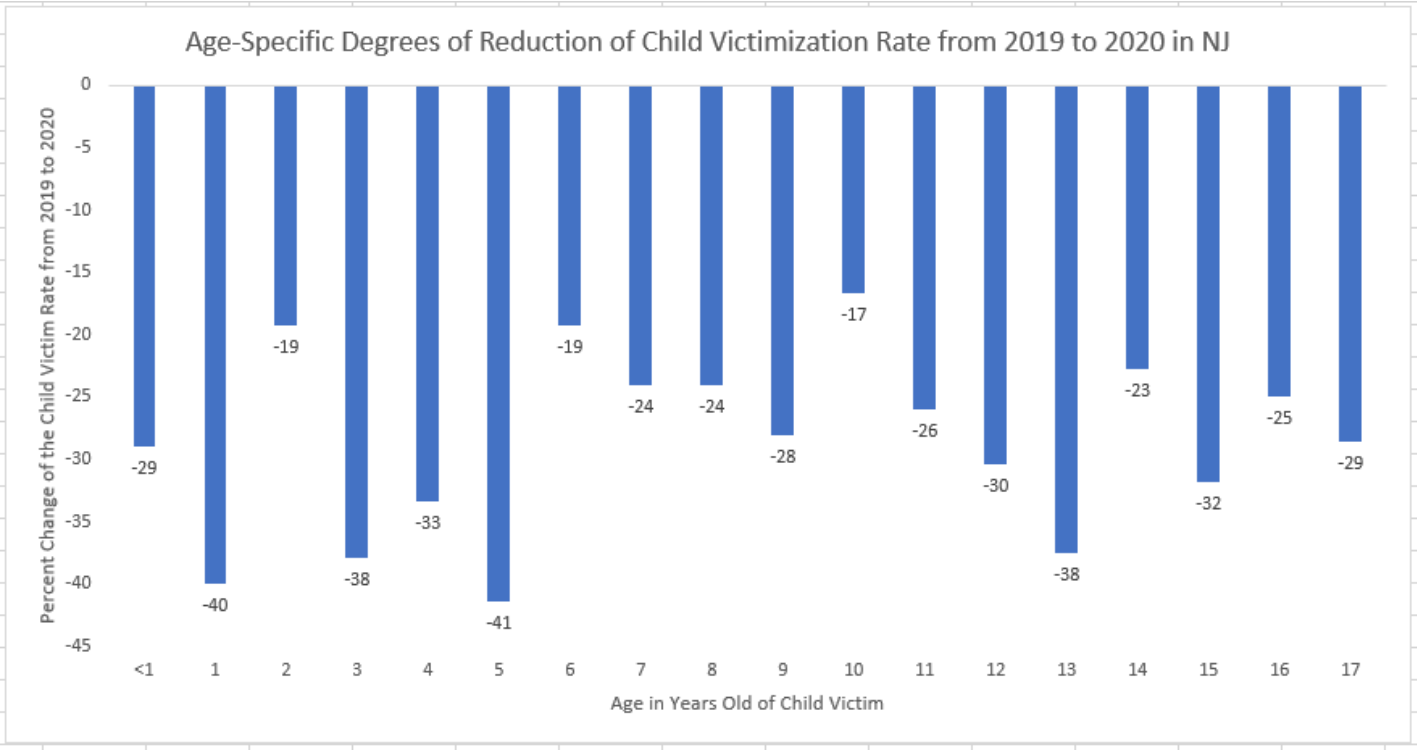
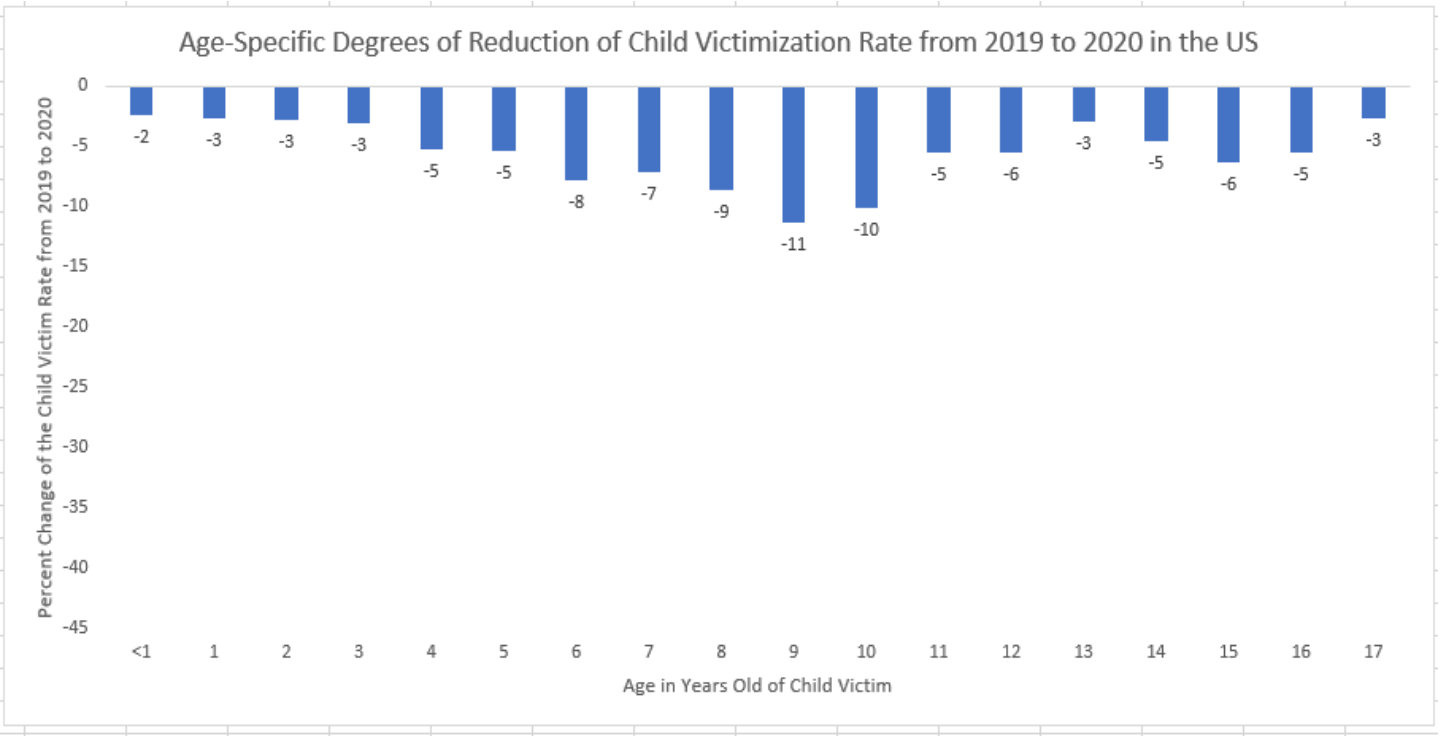


Figure 41b



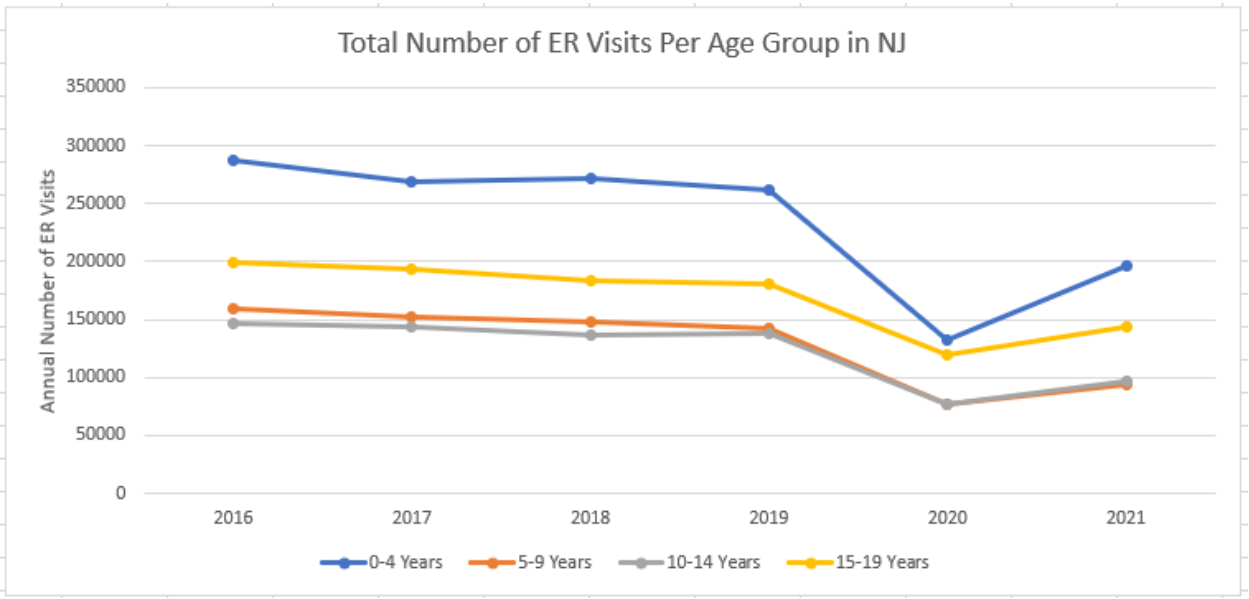
Instances of Child Maltreatment Diagnosed in Hospital Emergency Rooms. In this section, we will report the prevalence of child maltreatment as diagnosed in New Jersey hospital emergency rooms. The findings in this section were based on an analysis of Emergency Department Visit data that resulted in any diagnosis of child abuse or neglect[57].

Overall, emergency room visits for all medical reasons decreased in 2020 for patients aged between 0-19 years old (**Figure 42**), which is unsurprising given the population's fear of being infected by COVID-19, hospitals being overwhelmed in treating COVID-19 infected patients, and capacity limitations being enacted to promote physical distancing. Specifically (relative to 2019), ER visits decreased in 2020 by 49.5% for those aged between 0-4 years, by 46.7% for those aged between 5-9 years, by 44.3% for those aged between 10-14

[57] **Analysis of data obtained via**: New Jersey State Health Assessment Data (NJSHAD) – New Jersey Emergency Department Visit Data: 2016-2021 - Count. Accessed online at: https://www-doh.state.nj.us/doh-shad/query/builder/ub/UB10AllED/Count.html

years and by 33.5% for those aged between 15-19 years. While the number of child ER visits increased in 2021 (relative to 2020), this increase did not result in child ER visit levels rebounding to pre-pandemic levels.

Figure 42



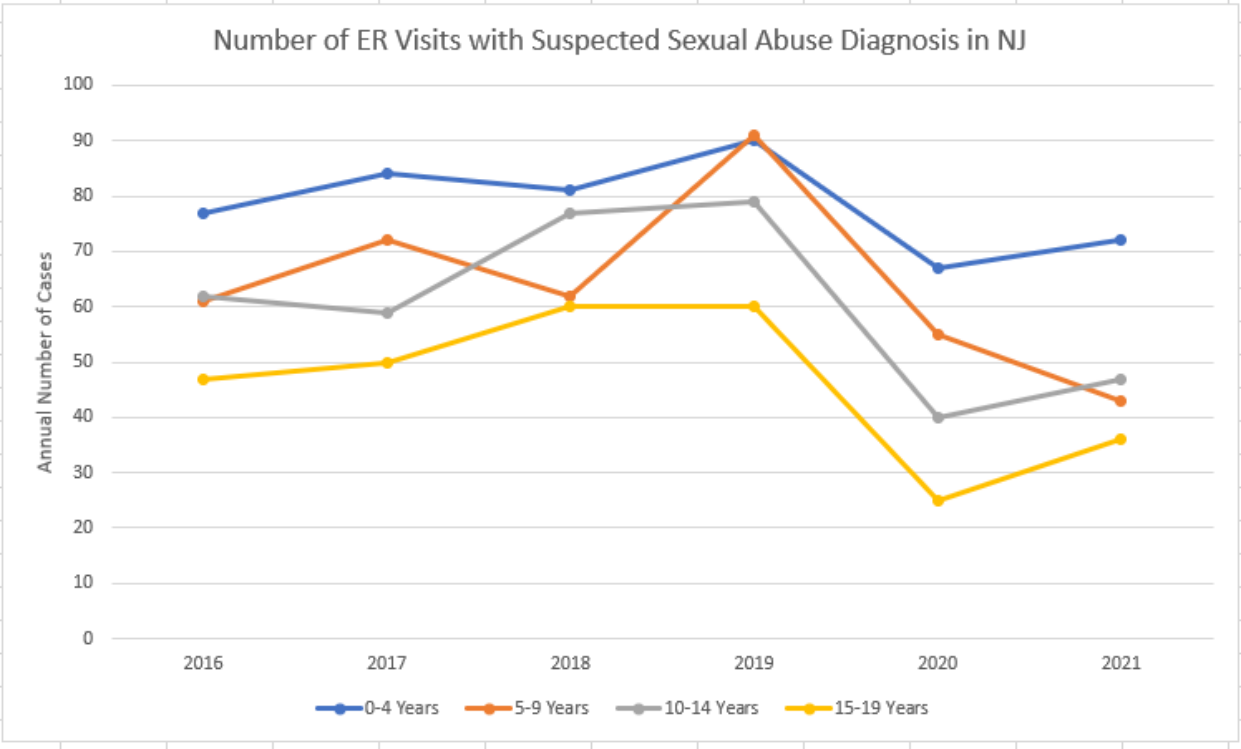
In consideration of this, one may expect that the total count of ER-based diagnoses of child abuse and neglect to have decreased in 2020. Thus, while it is important to assess how the total number of ER-diagnosed cases of child maltreatment changed in 2020 relative to prior years, it is also important to assess the number of ER-diagnosed cases of child maltreatment as a percentage of the total number of ER visits (per age group) to control for the substantial decreases in total ER visits observed in 2020. In this way, we can assess whether there have been pandemic-related changes in the proportion of all child ER-visits that were specifically related to child maltreatment.

With respect to ER visits resulting in a diagnosis of suspected sexual abuse[58], the total number of such diagnoses for children aged between 0-17 years decreased by 41.6% in 2020 (relative to 2019) (**Figure 43a**). The degree to which these diagnoses decreased in 2020 was larger for those aged between 10-14 years (49.4%

[58] ICD-10 code used to classify ER diagnoses for suspected sexual abuse is T76.22

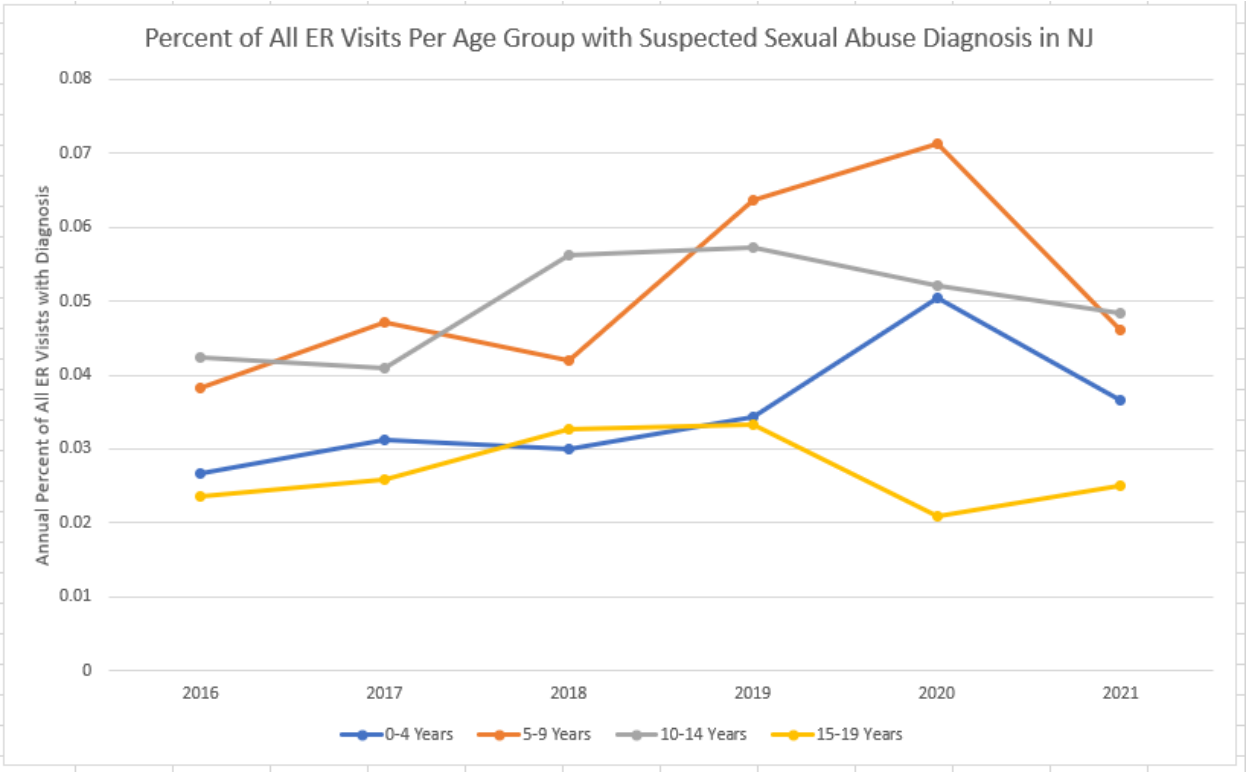
decrease) and those aged between 15-19 years (58.3% decrease) than it was for those aged between 0-4 years (25.6% decrease) and those aged between 5-9 years (39.6% decrease), indicating that the decreases in suspected sexual abuse diagnoses were larger for older children/adolescents.

Figure 43a



When assessing diagnoses of suspected sexual abuse as a percentage of the (age-specific) total number of ER visits per year (**Figure 43b**), the percentage ER visits with this diagnosis increased in 2020 (relative to 2019) by 47.3% for those aged between 0-4 years and by 12.1% for those aged between 5-9 years, but decreased by 9.2% for those aged 10-14 years and by 37.3% for those aged between 15-19 years. Thus, even though the total number of suspected sexual abuse diagnoses decreased in 2020 for those aged between 0-9 years old, ER-diagnosed cases of suspected sexual abuse decreased in 2020 to a lesser extent than other reasons for ER-visits by children in this age range.

Figure 43b

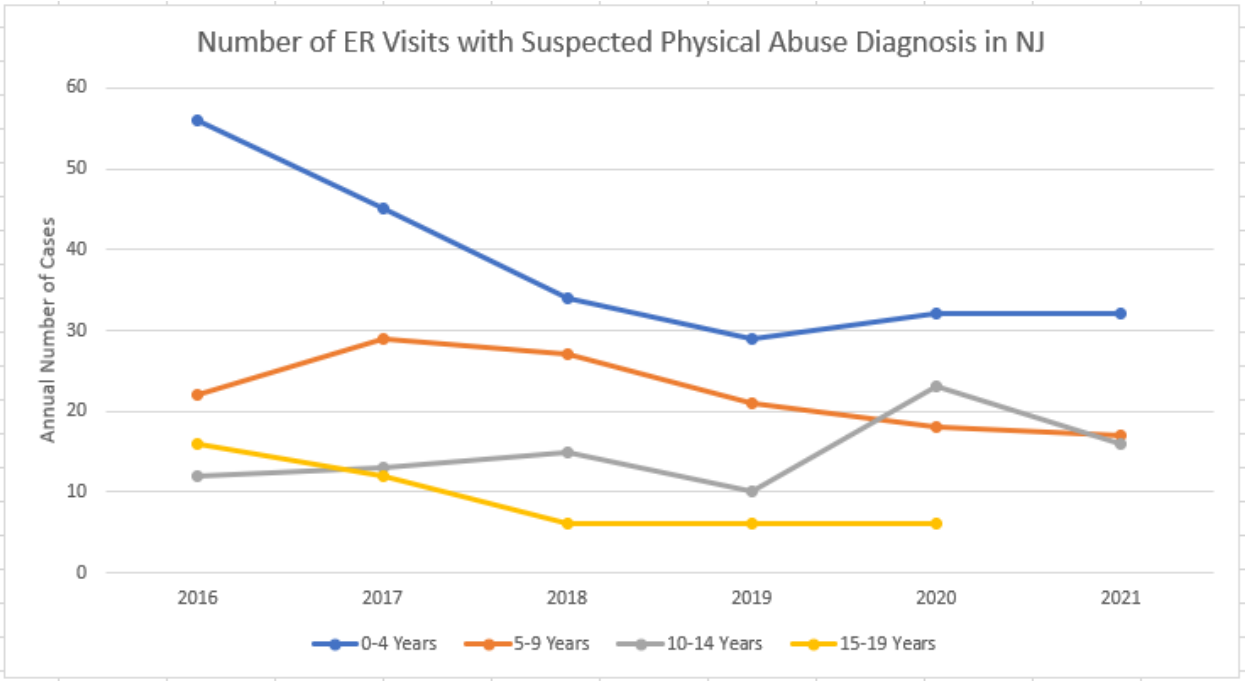


With respect to ER visits resulting in a diagnosis of suspected physical abuse[59], the total number of such diagnoses for children aged between 0-17 years increased by 19.7% in 2020 (relative to 2019) (**Figure 44a**). However, this varied by age group. The total number of ER visits with this diagnosis increased by 10.3% for those aged between 0-4 years and by 130% for those aged between 10-14 years in 2020. The total number of ER visits with this diagnosis decreased by 14.3% for those aged between 5-9 years and did not change at all for those aged between 15-19 years in 2020. In the context of overall decreases in the total number of child ER visits for any diagnosis in 2020, increases in the total number of suspected physical abuse diagnoses in 2020 for those aged between 0-4 years and between 10-14 years (relative to decreasing or stable number of such diagnoses in prior, pre-pandemic years) is striking and suggests that the pandemic may have created conditions resulting in elevated levels of physical abuse for children within these age ranges. Further, the lack of change in the total number of suspected physical abuse diagnoses in 2020 for the 5–9-year-old group in the context of a

[59] ICD-10 code used to classify ER diagnoses of suspected physical abuse is T76.12

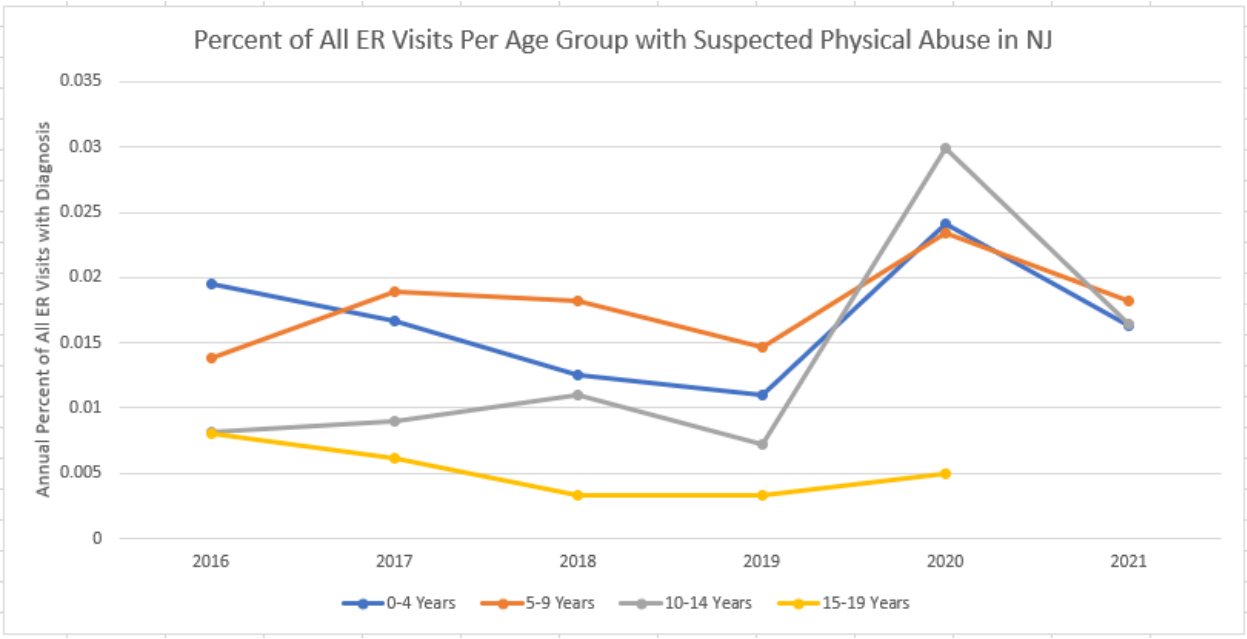
decreased total ER visits by this age group suggests that this group may have been subjected to more physical abuse as well.

Figure 44a



When assessing diagnoses of suspected physical abuse as a percentage of the (age-specific) total number of ER visits per year (**Figure 44b**), the percentage of ER visits with this diagnosis increased in 2020 (relative to 2019) by 118.4% for those aged between 0-4 years, by 58.9% for those aged between 5-9 years, by 312.6% for those aged between 10-14 years and by 50.4% for those aged between 15-19 years. Thus, for all four of these age groups, suspected physical abuse became a more common diagnosis in 2020 among all child ER visits relative to prior years.

Figure 44b

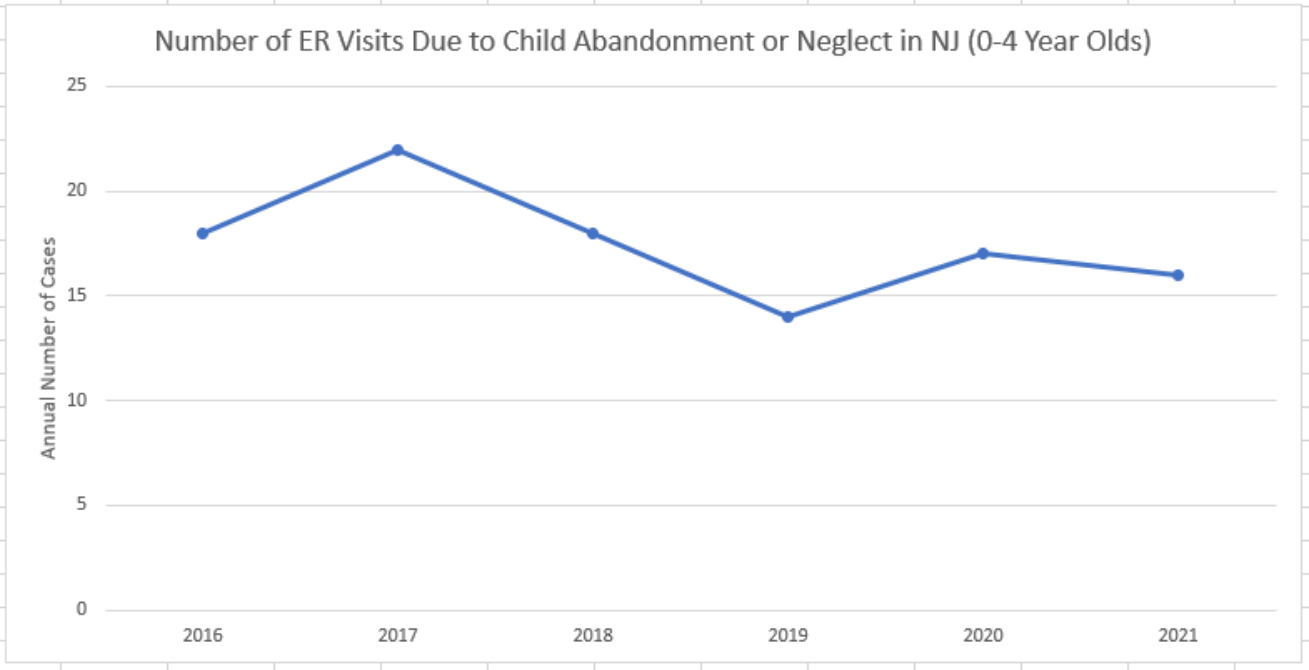


National-level analyses of child ER visits resulting in a diagnosis of physical abuse indicated that, in the period between April 2020 and March 2021 (relative to the period between January 2018 to March 2020), the number of ER visits resulting in this diagnosis in the United States decreased by 19%[60]. However, more detailed analyses indicated this was driven primarily by a reduction in what was classified as "low-severity" cases of physical abuse. Instances of what was classified as "high-severity" cases of physical abuse did not change in 2020. Since this study measured ER visit diagnoses of physical abuse as the average number of diagnoses per day, the lack of change in the number of "high severity" diagnoses of physical abuse in 2020 may indicate that high severity instances of physical abuse were actually more frequently occurring in mid-2020-2021 than in 2018-early 2020 if one assumes that there was a similar decrease in the total number of child ER visits in the United States as we observed to be the case in New Jersey.

[60] **Source**: Chaiyachati, B.H., Wood, J.N., Carter, C., Lindberg, D.M., Chun, T.H., Cook, L.J. & Alpern, E.R. (2022). Emergency Department Child Abuse Evaluations During COVID-19: A Multicenter Study. *Pediatrics, 150 (1),* e2022056284.

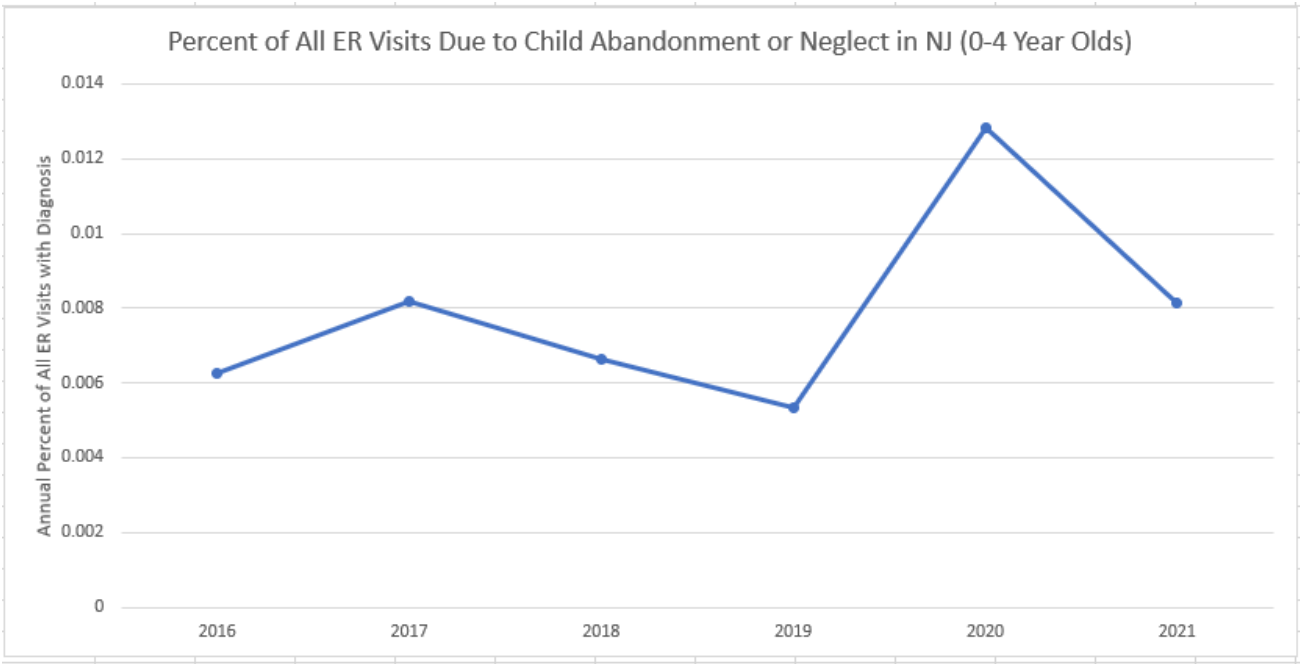
With respect to diagnoses of child abandonment or neglect[61] in children aged between 0-4 years (there were no recorded cases of this diagnosis in older children), the total number of such diagnoses increased by 21.4% in 2020 (relative to 2019) despite annual decreases in the total number of these diagnoses being observed in 2018 and 2019 (**Figure 45a**). Further, when assessing instances of this diagnosis of as a percentage of the total number of ER visits per year by 0-4-year-olds (**Figure 45b**), the percentage of ER visits with this diagnosis increased by 140.3% in 2020 (relative to 2019) despite annual decreases in this percentage being observed in 2018 and 2019. In the context of the 49.5% decrease in total number of visits to the ER by 0-4-year-olds observed in 2020, this 21.4% increase in the number of ER visits resulting in a child abandonment/neglect diagnosis indicates that pandemic-specific factors may have resulted in more parents abandoning and/or neglecting their young children.

Figure 45a



[61] ICD-10 code used to classify ER diagnoses of child abandonment or neglect is T74.02

Figure 45b



Overall, child maltreatment diagnoses from New Jersey ER visits provide evidence to suggest that some forms of child abuse and neglect (physical abuse and child abandonment and neglect) were more prevalent during the pandemic, especially in 2020. Further, the percentage of all child ER visits that resulted in sexual abuse, physical abuse, and child abandonment and neglect diagnoses increased. In comparing what occurred in New Jersey to the United States at large, national analyses of ER visitations resulting in a diagnosis of child abuse and neglect decreased in 2020 (relative to 2019)[62]. However, this research demonstrated that the percentage of all child abuse/neglect-related ER visits that ultimately resulted in the child being hospitalized increased in 2020 relative to 2019. This suggests one of three things. First, this could indicate that instances of more severe child abuse and neglect became more common in 2020 than in prior years. Second, this could indicate that instances of less severe child abuse and neglect became less common in 2020 than in prior years. Finally, some combination of the two options above may have occurred.

[62] **Source**: Swedo, E., Idaikkadar, N., Leemis, R., Das, T., Radhakrishnanm L., Stein, Z., Chen, M., Agathis, N. & Holland, K. (2020). Trends in U.S. Emergency Department Visits Related to Suspected or Confirmed Child Abuse and Neglect Among Children and Adolescents Aged <18 Years Before and During the COVID-19 Pandemic — United States, January 2019–September 2020. Accessed online at: https://www.cdc.gov/mmwr/volumes/69/wr/mm6949a1.htm

Despite evidence from ER records that some instances of physical abuse and child abandonment/neglect were on the rise during the pandemic in New Jersey, instances of child abuse detected by ERs reflect a minority of cases of child maltreatment that is reported to Child Protective Service agencies. The 2019 *Child Maltreatment Report* indicated that only 11.0% of child victim cases were referred to CPS agencies by medical personnel (and ER-specific medical personnel likely reflects only a portion of this 11%)[63]. In 2020, this referral rate was essentially the same (11.6% of cases were referred by medical personnel)[64]. Thus, in both New Jersey and the United States, there have been fewer reported instances of child abuse and neglect since the pandemic.

There is an active debate concerning how to explain the reduction in child victimization rates in the nation in 2020. The two predominant perspectives are that the 2020 reduction in child victimization rates reflect: (a) under-reporting rather than actual reductions in child abuse/neglect, and (b) actual reduced incidents of child abuse/neglect due to increased protection of children related to increased surveillance by parents/siblings who were at home more frequently with their children due to stay-at-home orders.

The argument that the 2020 reduction in child victimization rates reflect under-reporting rather than reduced instances of child abuse/neglect have the perspective that the termination of in-person schooling resulted in teachers, school counselors and other educational staff being less capable of detecting instances of child maltreatment via virtual forms of schooling, resulting in an estimated 250,000 cases of child abuse/neglect going undetected nationwide in 2020[65]. This argument is supported by the observation that, prior to the pandemic, education-professionals were the most common source of referrals of child abuse/neglect cases to Child Protection Service agencies. In 2019, 21% of all child victimization cases were referred to CPS agencies

[63] **Source**: U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2021). Child Maltreatment 2019. Accessed online at: https://www.acf.hhs.gov/sites/default/files/documents/cb/cm2019.pdf

[64] **Source**: U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2022). Child Maltreatment 2020. Accessed online at: https://www.acf.hhs.gov/sites/default/files/documents/cb/cm2020.pdf

[65] **Source**: Rappoport, E., Reisert, H., Schoeman, E. & Adesman, A. (2021). Reporting of child maltreatment during the SARS-CoV-2 pandemic in New York City from March to May 2020. *Child Abuse and Neglect, 116*, 104719.

by education professionals[66]. However, in 2020, educational professionals became the second most common source of referrals (17.2%), falling behind legal and law enforcement professionals (who were the source of 20.9% of referrals)[67].

Alternatively, the argument that reduced child victimization rates in 2020 reflect actual reductions in instances of child abuse/neglect has the perspective that the combination of stay-at-home orders, increased instances of employment loss and increased instances of individuals working from home likely resulted in it being more common for children to be supervised by multiple adults and older siblings which served as a protective factor reducing the chances that one adult, left alone with a child, would commit acts of child abuse/neglect[68]. However, a study of child abuse in the state of Indiana during the pandemic reported evidence that is seemingly inconsistent with this view[69]. Using mobile-phone movement data, the researchers were able to determine which regions of the state stayed at home more vs. less during the first two months of the pandemic. They observed that reported instances of child abuse were more common during this time period in regions where the population stayed at home more often than in regions where the population stayed at home less often. This contradicts the notion that more adults and/or siblings staying at home and supervising their children results in enhanced protection against abuse. But, it is unclear how behaviors observed in the state of Indiana generalize to New Jersey and the nation at large.

Finally, one argument against both of these two views is that the 2020 reduction in child victimization rates are not related to pandemic-specific factors, but rather, are a continuation of a trend of decreasing reports of child maltreatment that began prior to the pandemic (as is suggested by the annual trends displayed in **Figure**

[66] **Source**: U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2021). Child Maltreatment 2019. Accessed online at: https://www.acf.hhs.gov/sites/default/files/documents/cb/cm2019.pdf

[67] **Source**: U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2022). Child Maltreatment 2020. Accessed online at: https://www.acf.hhs.gov/sites/default/files/documents/cb/cm2020.pdf

[68] **Source**: Maassel, N.L., Asnes, A.G., Leventhal, J.M. & Soloman, D.G. (2021). Hospital Admissions for Abusive Head Trauma at Children's Hospitals During COVID-19. *Pediatrics, 148 (1),* e2021050361.

[69] **Source**: Bullinger, L.R., Raissian, K.M., Feely, M. & Schneider, W.J. (2021). The neglected ones: Time at home during COVID-19 and child maltreatment. *Child and Youth Services Review, 131*, 106287.

35). Ultimately, this is currently a difficult issue to resolve, as the primary method of analysis of child abuse has been treatment records in the form of CPS reports and ER diagnoses. Treatment rates do not perfectly reflect actual instances of abuse, and there is little data available that would allow one to adequately test these ideas against each other.

Mental Health of Mothers During Pregnancy and After Birth

Women who were pregnant and gave birth during the pandemic experienced a variety of unique challenges and hardships. One recent review article outlined some of these challenges[70]. Lockdowns, travel restrictions and physical distancing behaviors made it more difficult for parents to receive in-person social support from their family/friends and provided obstacles in allowing such family/friends to bond with newborns. This could have been particularly distressing, especially during the early periods of the pandemic when it was uncertain how long such social restrictions would remain in place. Further, pregnant women and mothers of newborns may have experienced elevated levels of anxiety relating to either their newborn being infected with COVID-19 and/or their uncertainty as to how being infected with COVID-19 while pregnant would affect the short- and long-term health of the fetus.

In this section, we will evaluate the experiences of depression of pregnant women and mothers of newborns during the pandemic. The findings reported in this section were primarily obtained via analysis of data collected by the New Jersey Pregnancy Risk Assessment Monitoring System (PRAMS)[71, 72].

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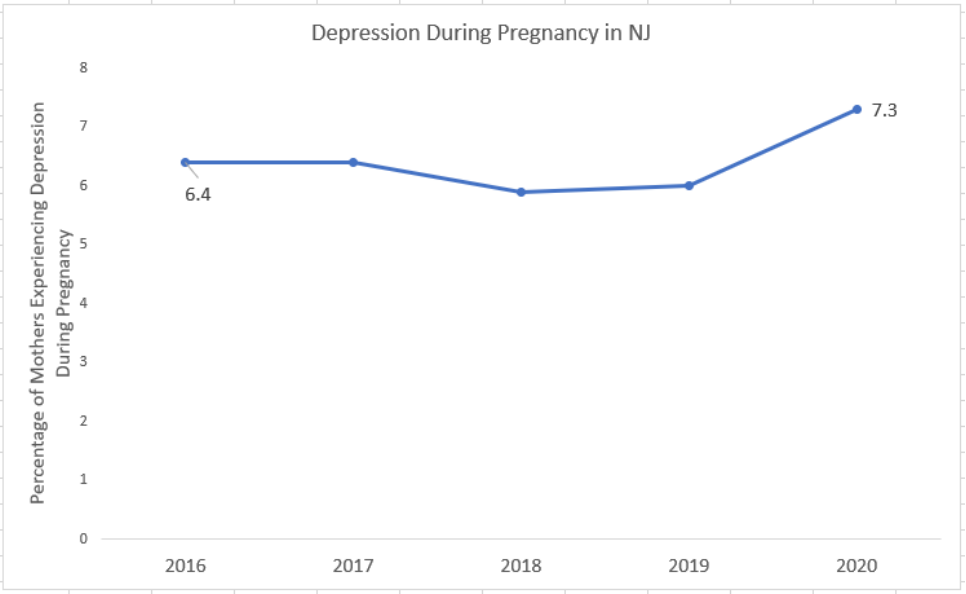
[70] **Source**: Arzamani, N., Soraya, S., Hadi, F., Nooraeen, S. & Saeidi, M. (2022). The COVID-19 pandemic and mental health in pregnant women: A review article. *Frontiers in Psychiatry, 13*, 949239.

[71] **Analysis of data obtained via**: New Jersey State Health Assessment Data (NJSHAD) – New Jersey Pregnancy Risk Assessment Monitoring System Data Query. Accessed online at: https://www-doh.state.nj.us/doh-shad/query/selection/prams/PRAMSSelection.html?_gl=1*1nxdr8a*_ga*MTE2NjYyNTU3Ny4xNjQ3OTU2NjA3*_ga_5PWJJG6642*MTY1MjI4ODI5My4yLjEuMTY1MjI4ODMwNi4w

[72] The New Jersey PRAMS is a survey-based study that randomly samples one out of every 50 women giving birth each month in the state resulting in approximately 1,000-3,000 mothers being surveyed each year. Surveys are administered approximately 2-6 months after birth. **Source**: Shulman, H.B., D'Angelo, D.V., Harrison, L., Smith, R.A., Warner, L. (2018). The Pregnancy Risk Assessment Monitoring System (PRAMS): Overview of Design and Methodology. *Research and Practice*. Accessed online at: https://www.cdc.gov/prams/pdf/methodology/PRAMS-Design-Methodology-508.pdf

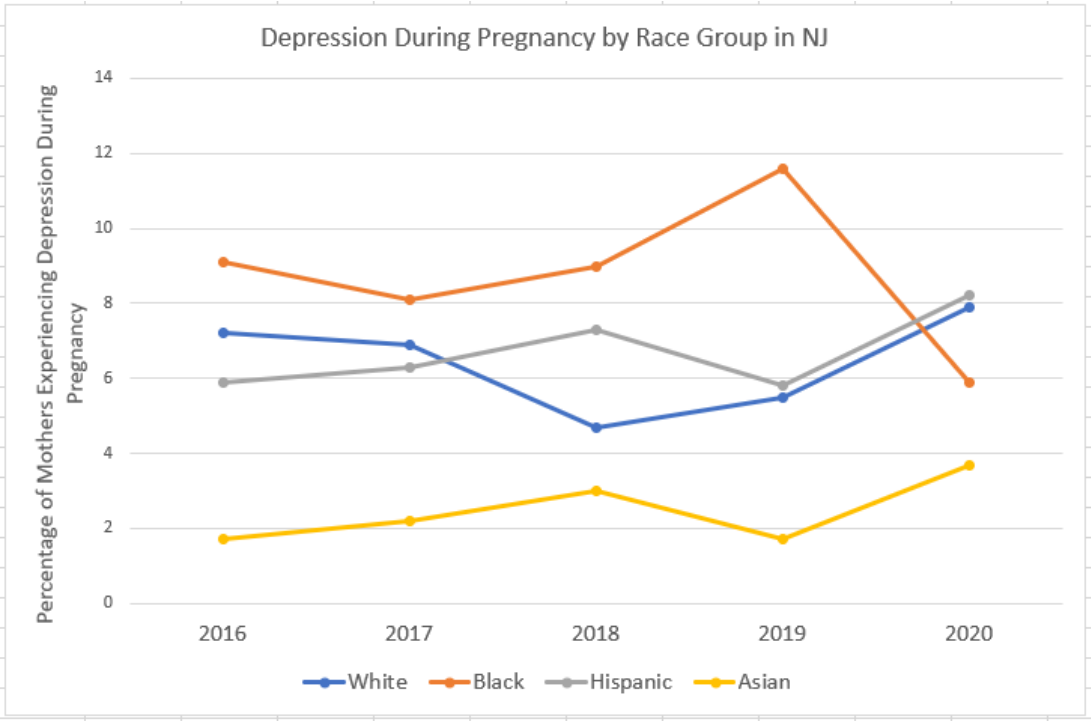
Depression During Pregnancy. The 2016-2020 annual percentages of New Jersey women indicating that they experienced depression during their pregnancy is displayed in **Figure 46a**. Despite stable or decreasing percentages of women indicating they experienced depression during their pregnancy between the years 2016-2019, this percentage increased by 21.67% in 2020 (relative to 2019).

Figure 46a



The percentage of women experiencing depression during pregnancy varied by race (**Figure 46b**). The percentage of mothers experiencing depression during pregnancy increased in 2020 (relative to 2019) for White (43.6% increase), Hispanic (41.4% increase) and Asian mothers (117.6% increase). However, the percentage of Black mothers experiencing such depression decreased in 2020 by 49.1%. Between 2016-2019, Black mothers experienced the highest rates of such depression. But, in 2020, the increasing rates of depression during pregnancy for White and Hispanic mothers in combination with the depression-rate decrease for Black mothers caused White and Hispanic mothers to become the two race groups with the highest rates of this type of depression in 2020.

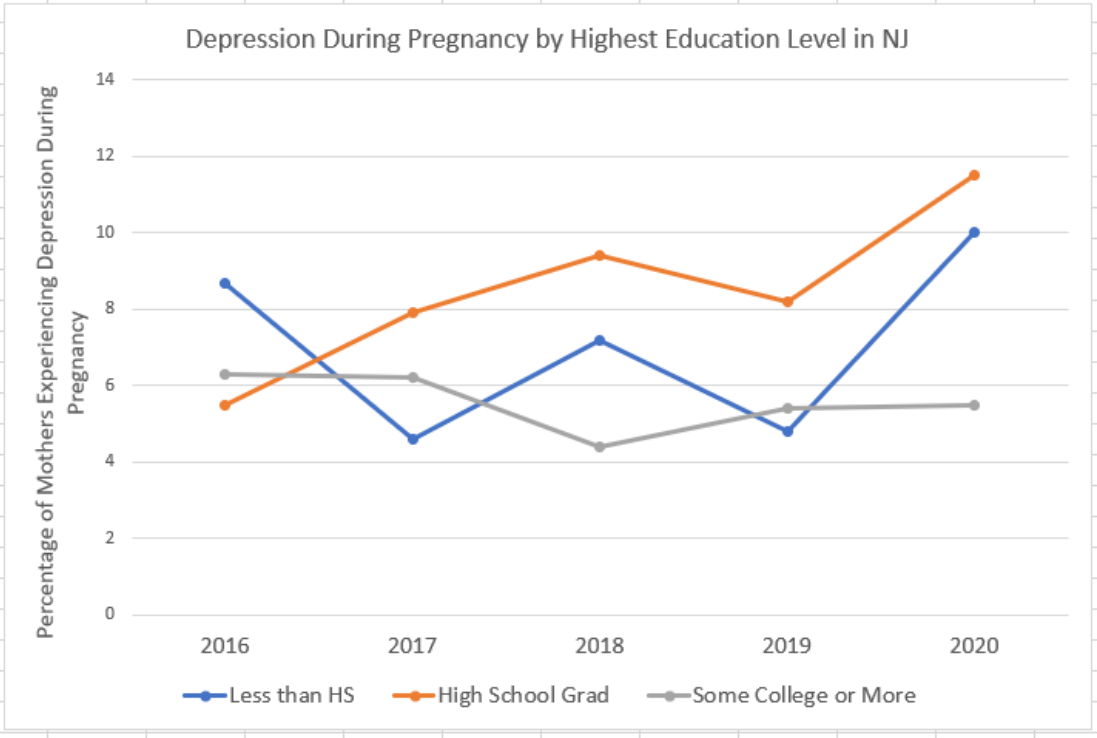
Figure 46b



The 2019-2020 increases in the rate of depression during pregnancy also varied according to the mother's highest level of education (**Figure 46c**). Women with less than a high school education were observed to have the largest increase in the rate of depression during pregnancy (108.3% increase). The increase for this group of women stands in contrast to the 33.3% decrease in rate of depression observed for this group in 2019 (relative to 2018). The percentage of women who only graduated from high school who were depressed during pregnancy increased by 40.2% in 2020 (relative to 2019). This stands in contrast to the 12.8% decrease observed in 2019 (relative to 2018) and the only 19.0% increase observed in 2018 (relative to 2017). The percentage of women who attended some college or more who experienced depression during pregnancy only increased by 1.9% in 2020 (relative to 2019). Thus, the increase in depression during pregnancy was primarily experienced by women with the lowest levels of education, which presumably reflects lower socioeconomic status[73] and increased financial hardship.

[73] **Source**: National Center for Education Statistics (2022). Annual Earnings by Educational Attainment. Accessed online at: https://nces.ed.gov/programs/coe/indicator/cba/annual-earnings

Figure 46c

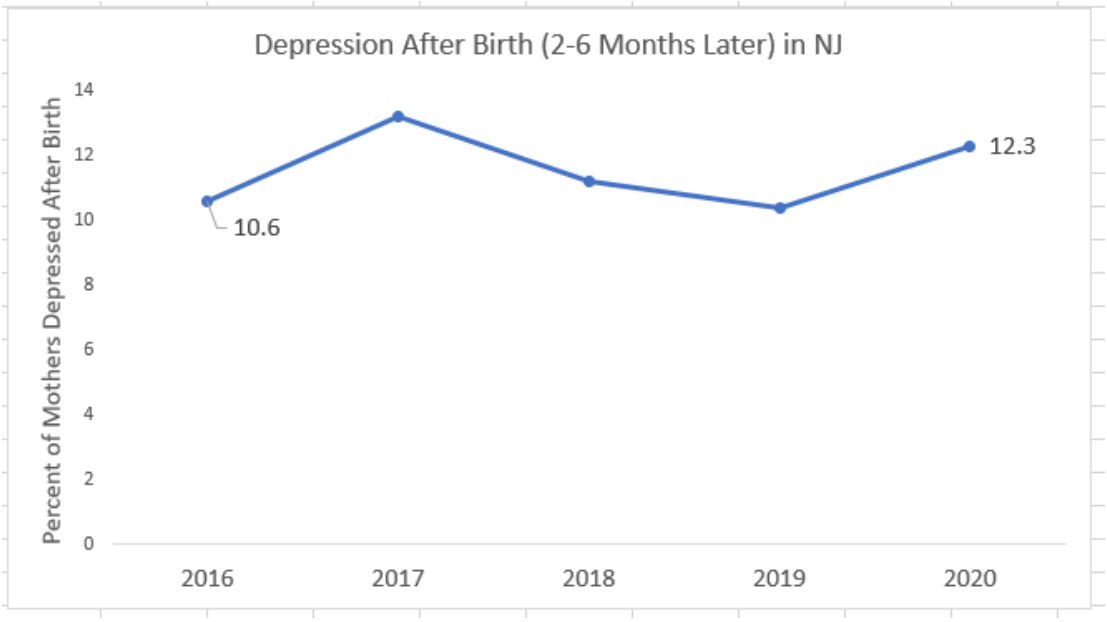


Observations of increased rates of depression during pregnancy during the pandemic in New Jersey are consistent with international observations. A meta-analysis of 54 studies performed on samples recruited from 20 different countries (including the United States) demonstrated that rates of depression during pregnancy increased during the pandemic[74].

Postpartum Depression. The 2016-2020 annual percentage of women experiencing depression 2-6 months after birth is displayed in **Figure 47a**. Despite annual decreases in this percentage observed in 2018 (relative to 2017) and 2019 (relative to 2018), the percentage of mothers experiencing postpartum depression increased by 18.3% in 2020 (relative to 2019).

[74] **Source**: Adrianto, N., Caesarlia, J. & Pajala, F.B. (2022). Depression in pregnant and postpartum women during COVID-19 pandemic: systematic review and meta-analysis. *Obstetrics & Gynecology Science, 65(4),* 287-302.

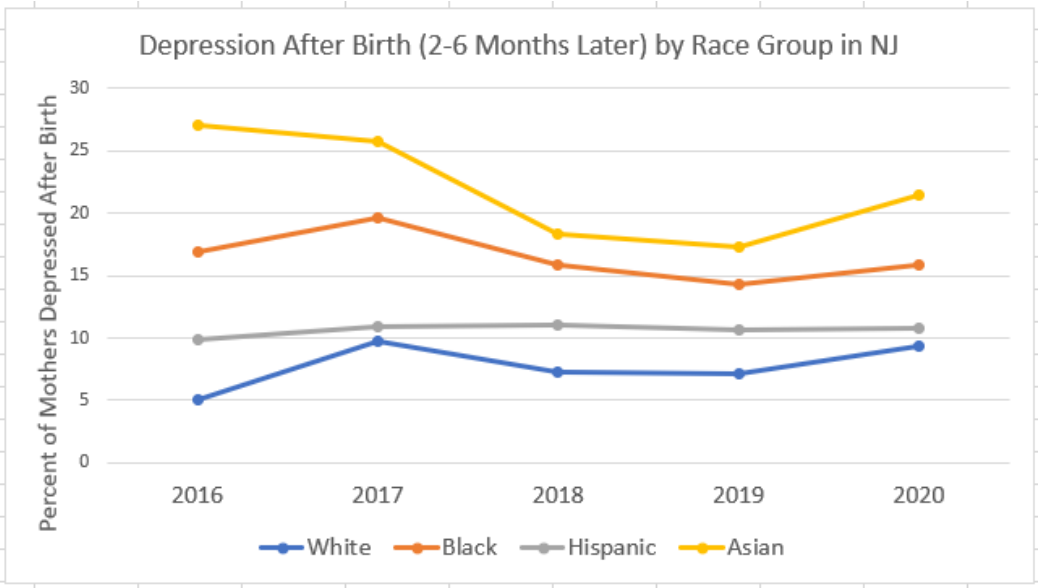
Figure 47a



Between 2016-2020, it was consistently the case that Asian mothers experienced the highest rates of postpartum depression, followed by Black mothers who in turn were followed by Hispanic mothers (**Figure 47b**). White mothers experienced the lowest rates of postpartum depression in these years. It is noteworthy to observe that it has consistently been the case that Asian mothers have the lowest rates of depression during pregnancy (**Figure 46b**) while simultaneously having the highest rates of depression after birth. Presently, it is unclear why this is the case.

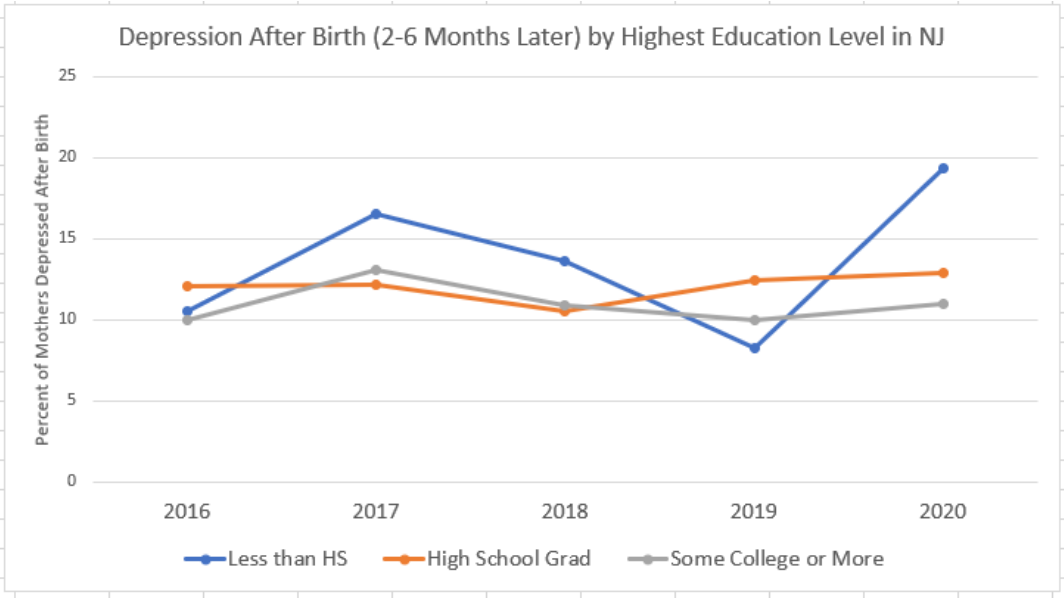
Relative to 2019, the percentage of mothers reporting postpartum depression increased in 2020 for White mothers (29.2% increase), Asian mothers (23.7% increase), Black mothers (10.5% increase) and Hispanic mothers (1.9% increase) despite annual decreases or stability in the percentage of mothers experiencing this form of depression for every race group between the years 2016-2019.

Figure 47b



When comparing the rates of postpartum depression for mothers of different education levels (**Figure 47c**), mothers with less than a high school education were observed to have the largest increase in postpartum depression rates in 2020 (relative to 2019) (133% increase). In 2020, the rate of postpartum depression increased by 4.0% for mothers with only a high school education and by 10.0% for mothers with some college experience or more.

Figure 47c



Observations of increased rates of postpartum depression in 2020 in New Jersey are consistent with observations made in prior research. The meta-analysis of international studies representing data from 20 different countries referred to earlier reported that rates of postpartum depression increased during the pandemic[75]. Another study of a national United States sample reported that the rate of postpartum depression increased during the first year of the pandemic relative to the pre-pandemic period of January 2018-February 2020[76]. This study additionally observed that the degree to which postpartum depression increased was predicted by COVID-19 death rates and 2020 women unemployment rates at the state-level. In a United States national survey of mothers who gave birth during the pandemic[77], it was observed that one in three mothers screened positive for postpartum depression. Interestingly, this study also observed that the chances of being screened positive for postpartum depression were 92% more likely for mothers who formula-fed their infants compared to mothers who breastfed or bottle-fed using their own breast milk, a finding that has been observed in pre-pandemic years[78]. Further, mothers who self-reported being worried about themselves or their infants being infected with COVID-19 were 71% more likely to screen positive for postpartum depression.

In acknowledging elevated levels of depression during pregnancy and after birth, a qualitative study of United States mothers aimed to understand the primary sources of distress in pregnant women and mothers of newborns during the pandemic[79]. Commonly cited sources of distress were very much related to pandemic-specific factors. These included feelings of guilt associated with risking infecting the baby with COVID-19 by leaving the house, not having usual stress-relief outlets available, decreased social support, not having access to

[75] **Source**: Adrianto, N., Caesarlia, J. & Pajala, F.B. (2022). Depression in pregnant and postpartum women during COVID-19 pandemic: systematic review and meta-analysis. *Obstetrics & Gynecology Science, 65(4),* 287-302.
[76] **Source**: Bajaj, M.A., Salimgaraev, R., Zhaunova, L. & Payne, J.L. (2022). Rates of self-reported postpartum depressive symptoms in the United States before and after the start of the COVID-19 pandemic. *Journal of Psychiatric Research, 151*, 108-112.
[77] **Source**: Shuman, C.J., Peahl, A.F., Pareddy, N., Morgan, M.E., Chiangong, J., Veliz, P.T. & Dalton, V.K. (2022). Postpartum depression and associated risk factors during the COVID-19 pandemic. *BMC Research Notes, 15,* 102.
[78] **Source**: Figueiredo, B. & Field, T. (2014). Breastfeeding is negatively affected by prenatal depression and reduces postpartum depression. *Psychological Medicine, 44*, 927-936.
[79] **Source**: Shuman, C.J., Morgan, M.E., Chiangong, J., Pareddy, N., Veliz, P., Peahl, A.F. & Dalton, V.K. (2022). "Mourning the Experience of What Should Have Been": Experiences of Peripartum Women During the COVID-19 Pandemic. *Maternal and Child Health Journal, 26*, 102-109.

lactation consultants to help with breastfeeding difficulties, stress-induced reduction in breastmilk production, shifts in birthing plans due to pandemic, decreased visitors during birth, wearing masks during birth (e.g. first time holding a baby they had to wear a mask) and feelings that the experience of giving birth was different due to the pandemic from what it could/should have been.

Observations of elevated rates of postpartum depression during the pandemic should be taken seriously, as higher rates of postpartum depression may result in both short- and long-term negative impacts on the newborn child's mental health. Experiences of postpartum depression interfere with the mother-infant bonding process[80]. Mother-infant bonding difficulties have been observed to be associated with emotional and social developmental problems for the child later in life[81, 82, 83].

In contrast to the emphasis here on the negative changes in the experience and mental health of mothers during the pandemic, it is important to acknowledge that some mothers who gave birth during the pandemic reported pandemic-related benefits[84]. Such benefits that have been described include increased bonding time at home with their newborn and reduced visitors at the hospital when giving birth resulting in greater opportunities for the parents to bond with their newborn alone.

[80] **Source**: Gilden, J., Molenaar, N.M., Smit, A.K., Hoogendijk, W.G., Rommel, A., Kamperman, A.M. & Bergink, V. (2020). Mother-to-Infant Bonding in Women with Postpartum Psychosis and Severe Postpartum Depression: A Clinical Cohort Study. *Journal of Clinical Medicine, 9(7),* 2291.
[81] **Source**: Rusanen, E., Lahikainen, A.R., Vierkko, E., Polkki, P. & Paavonen, E.J. (2022). A Longitudinal Study of Maternal Postnatal Bonding and Psychosocial Factors that Contribute to Social-Emotional Development. *Child Psychiatry & Human Development*.
[82] **Source**: Joas, J. & Mohler, E. (2021). Maternal Bonding in Early Infancy Predicts Children's' Social Competences in Preschool Age. *Frontiers in Psychiatry, 12*, 1-9.
[83] **Source**: Faisal-Cury, A., Tabb, K.M., Ziebold, C. & Matijasevich, A. (2021). The impact of postpartum depression and bonding impairment on child development at 12 to 15 months after delivery. *Journal of Affective Disorders Reports, 4*, 100125.
[84] **Source**: Shuman, C.J., Morgan, M.E., Chiangong, J., Pareddy, N., Veliz, P., Peahl, A.F. & Dalton, V.K. (2022). "Mourning the Experience of What Should Have Been": Experiences of Peripartum Women During the COVID-19 Pandemic. *Maternal and Child Health Journal, 26*, 102-109.

Summary

The findings reported in this section indicate that the mental health of a substantial proportion of New Jersey residents was affected by the pandemic, with indications that negative changes to mental health were more commonly experienced than positive changes. Our analyses indicate that experiences of depression, anxiety, suicidal ideation and substance abuse were elevated during the pandemic, with such increases being more commonly observed in younger, female and mixed/other race populations. Increases in substance abuse and drug-related deaths were observed during the pandemic, being more commonly observed in middle-aged and male populations. Increases in the number of suicide deaths were observed for Asian and older populations. Finally, instances of child physical abuse, and child abandonment and neglect observed in hospital emergency rooms increased during the pandemic, while overall reports of child abuse and neglect to Child Protective Service agencies in the state decreased during the pandemic. This indicates that some forms of child abuse and neglect increased during the pandemic and that many incidents of child maltreatment went unreported during the pandemic.

In the next section, we will present our findings concerning how the treatment of mental health and substance abuse disorders changed during the pandemic to establish whether increases in the experience of mental health problems that were discussed in this section coincided with elevated levels of mental health care and treatment in New Jersey and the United States.

Section 3: Comparing Mental Health Care/Treatment of New Jersey Residents Before vs. During the Pandemic

In this section, we will discuss the care and treatment of the mental health problems of New Jersey residents and how it changed during the pandemic relative to pre-pandemic years. Based on observations made via the Hughes Center Poll and various publicly available datasets, we will focus on assessing rates of mental health diagnoses for various mental health disorders made by state mental health agencies, self-reported rates and methods of needing, seeking and obtaining mental health care, treatment rates of mental health problems by hospital emergency rooms and psychiatric hospitals and rates of treatment for substance abuse disorders. Further, we will end this section with an analysis of the degree of unmet demand for mental health and substance abuse treatment.

Diagnosis Rates of Various Mental Health Disorders

In this section, we analyze data concerning New Jersey and United States residents who received mental health care within the New Jersey state mental health system. These analyses are based on treatment records of 427,465 New Jersey and 6.9 million United States patients in 2019, as well as 415,832 New Jersey and 6.4 million United States patients in 2020 reported by the Substance Abuse and Mental Health Services Administration (SAMHSA) Mental Health Client-Level Data (MH-CLD) Annual Reports[85].

The overall Mental Health Diagnosis Rate[86] in New Jersey was higher than the United States rates in both 2019 and 2020, and the New Jersey rate remained stable between the years 2019 and 2020, only decreasing by 0.28% in 2020 relative to 2019 (**Figure 48a**). However, the overall rates (**Figure 48b**) and degree of change for them observed in 2020 (relative to 2019) (**Figure 48c**) varied by the type of diagnosed mental health disorder. In both 2019 and 2020, Depressive Disorder and Trauma/Stress Related Disorders were the two most common mental health disorders diagnosed. Nationally, Depressive Disorder, Anxiety Disorder and

[85] **Analysis of data obtained via**: Substance Abuse and Mental Health Services Administration (SAMHSA) (2022). Mental Health Client-Level Data (MH-CLD). Accessed online at: https://www.samhsa.gov/data/data-we-collect/mh-cld-mental-health-client-level-data

[86] The **Mental Health Diagnosis Rate** is defined as the number of individuals diagnosed with any mental health disorder per 100,000 in the population

Trauma/Stress Related Disorders were the most commonly diagnosed mental health disorders in 2019 and 2020 (**Figure 48b**).

Figure 48a

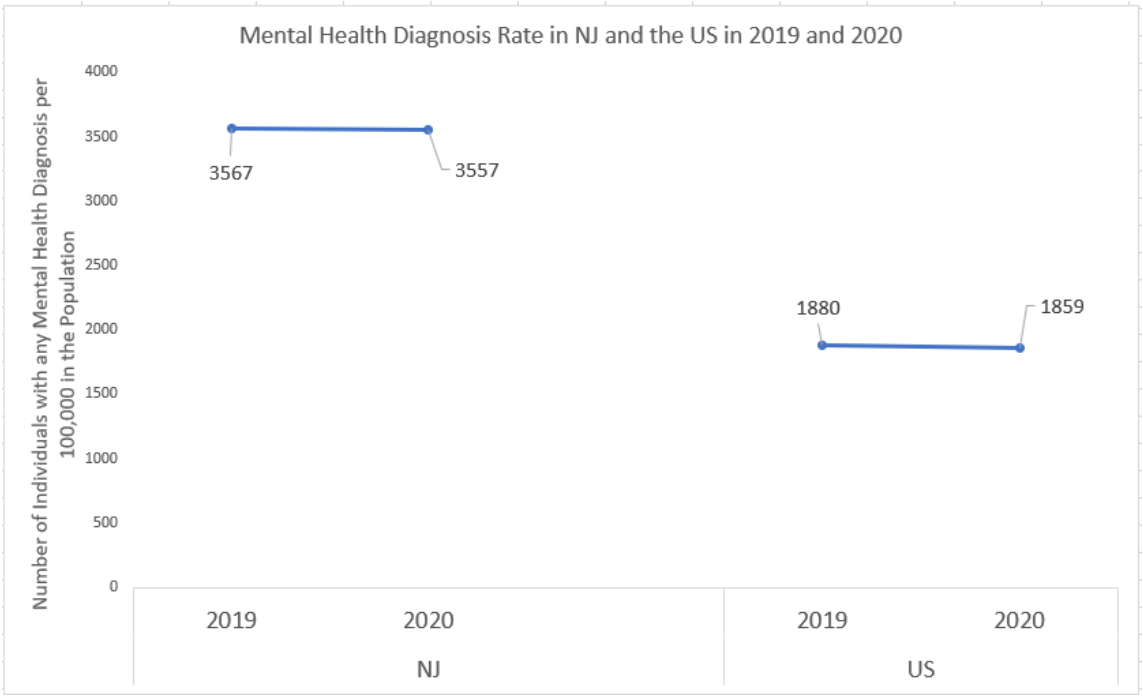


Figure 48b

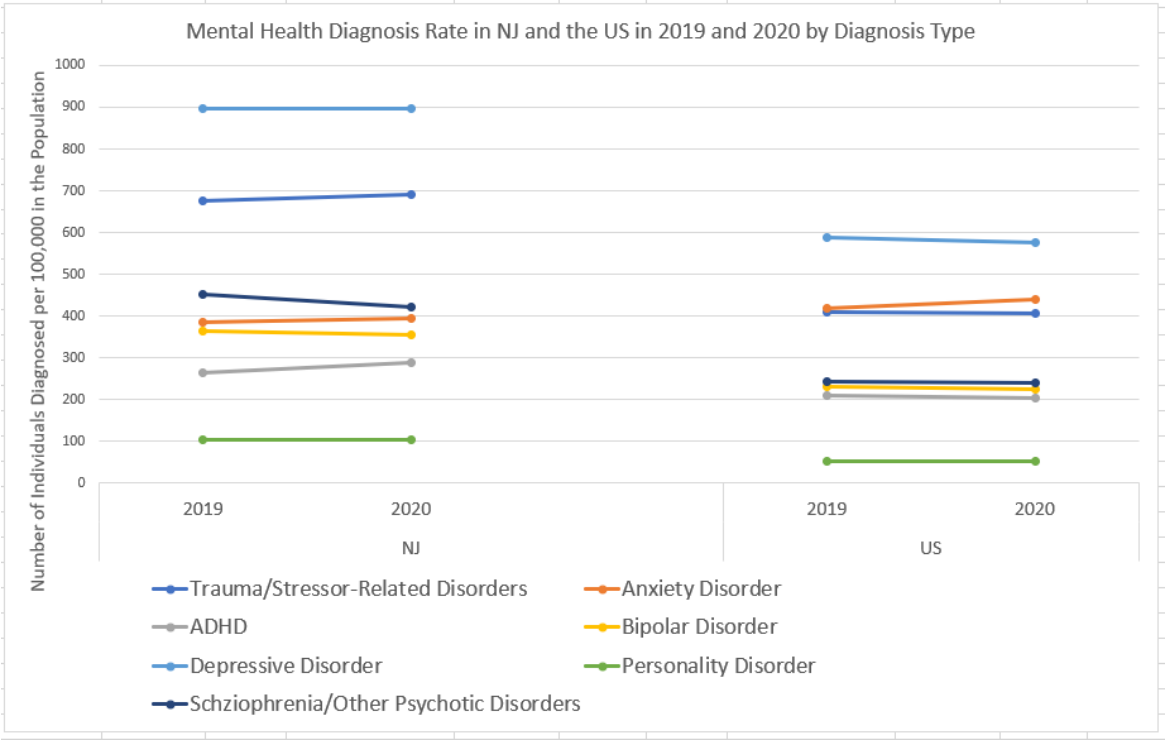
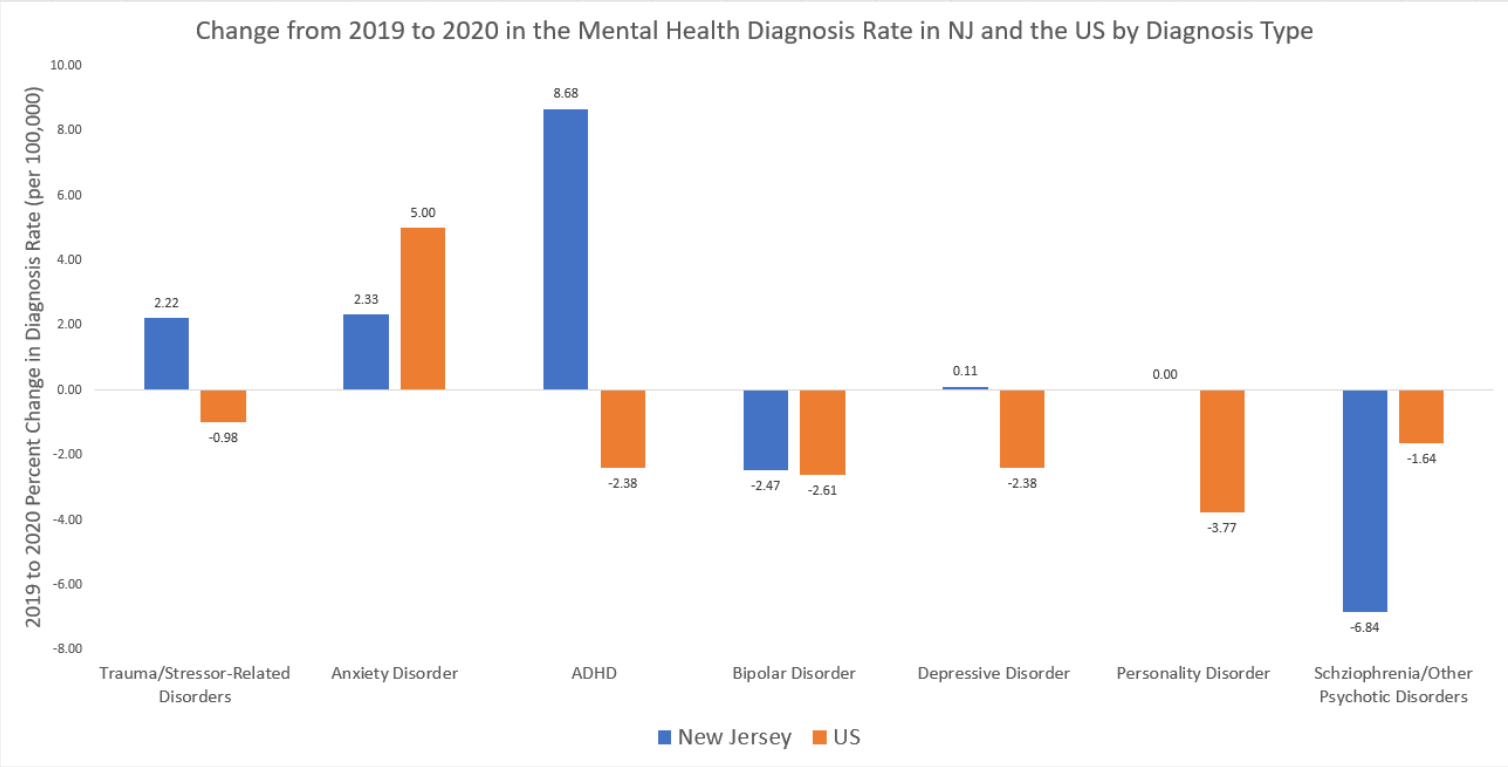


Figure 48c



In 2020 (relative to 2019), the New Jersey diagnosis rate increased for Attention-Deficit/Hyperactivity Disorder (ADHD) (8.7% increase), Anxiety Disorder (2.3% increase) and Trauma/Stress Related Disorders (2.2% increase), while in the United States, increases in the 2020 diagnosis rate was only observed for Anxiety Disorders (5.0% increase) (**Figure 48c**).

2019-2020 changes in the number of diagnoses for Trauma/Stress-related Disorders, Anxiety Disorder and Depressive Disorder varied by age and race in New Jersey.

The number of New Jersey Trauma/Stress Related Disorder diagnoses increased in 2020 (relative to 2019) for those aged between 15-17 years (10.2% increase), 18-20 years (65.3% increase), 40-44 years (2.67% increase) and 60-64 years (3.5% increase) (**Figure 49a**). The number of diagnoses for this disorder increased in 2020 by 27.5% for Asian residents, by 28.4% for Black residents, by 14.1% for White residents and by 68.9% for those identifying as "Other" race (**Figure 49b**).

Figure 49a

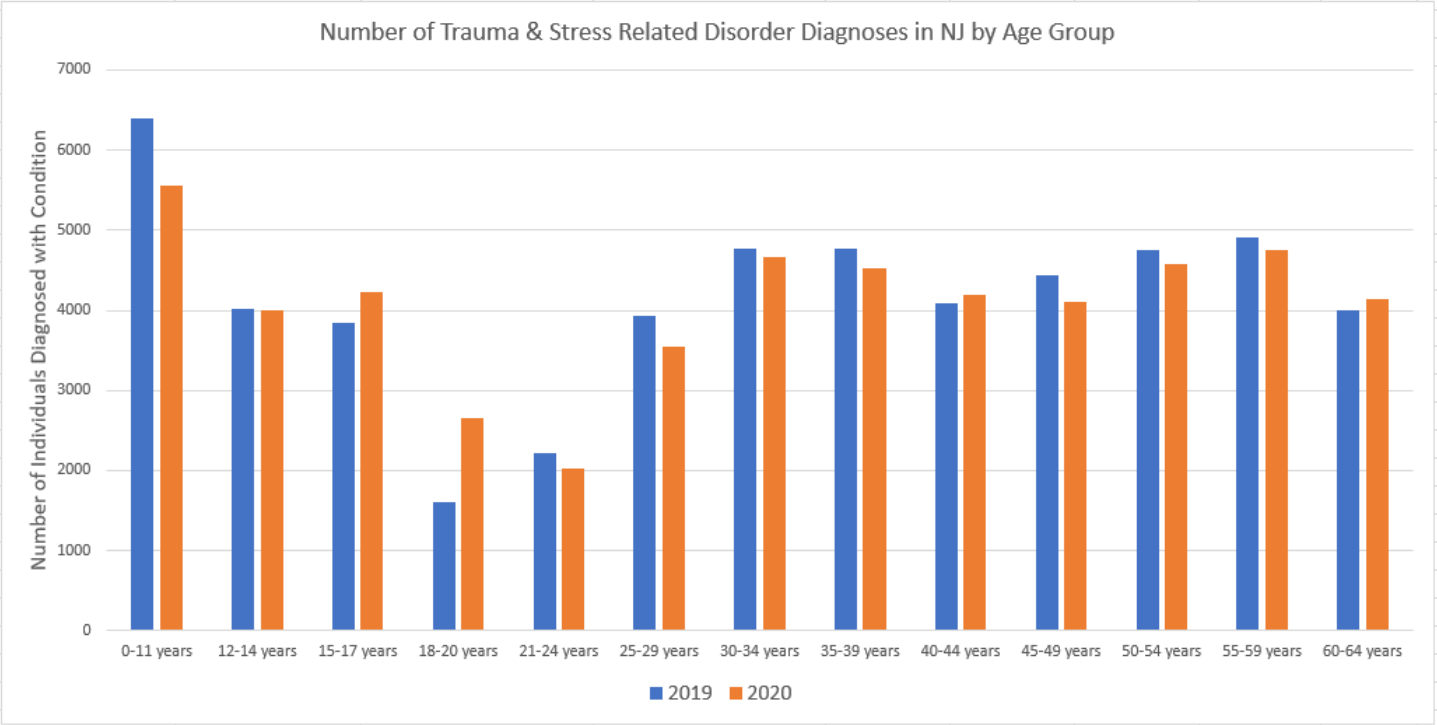


Figure 49b

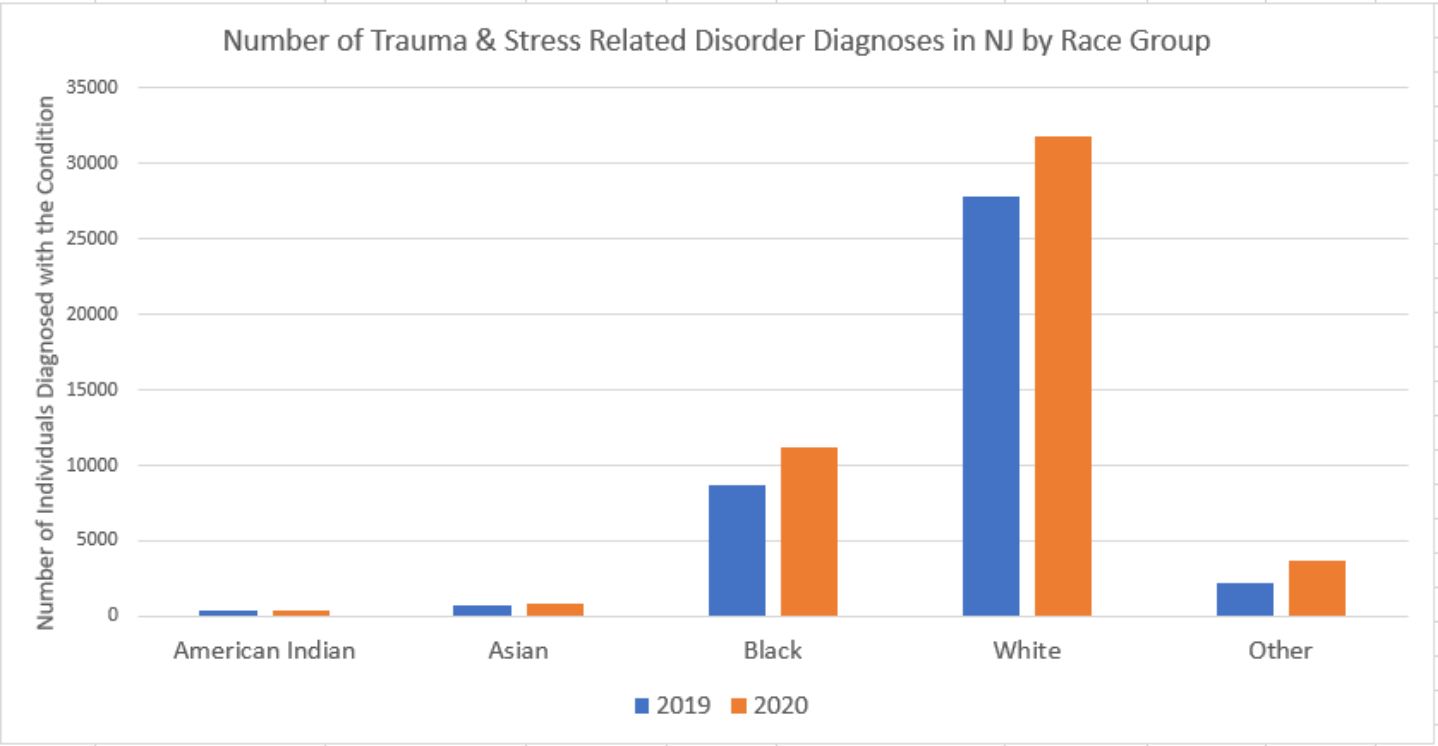


Figure 49c

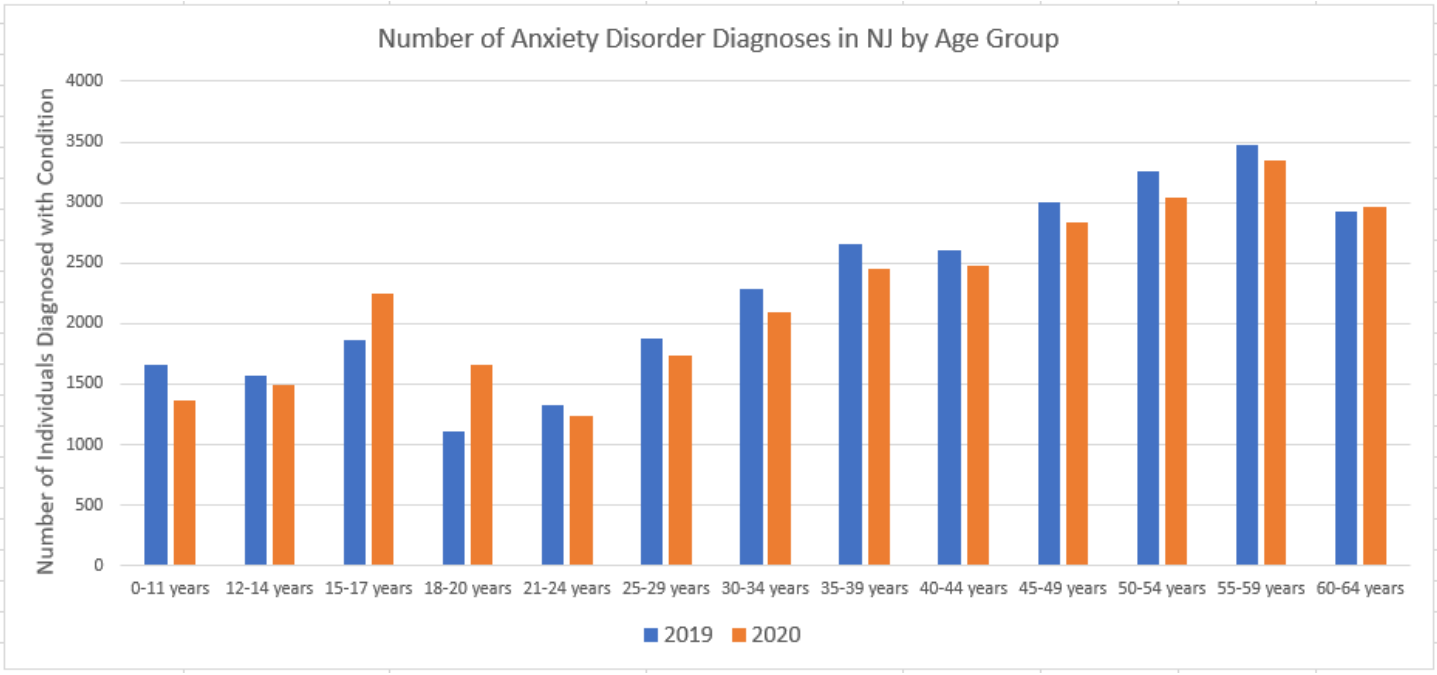


Figure 49d

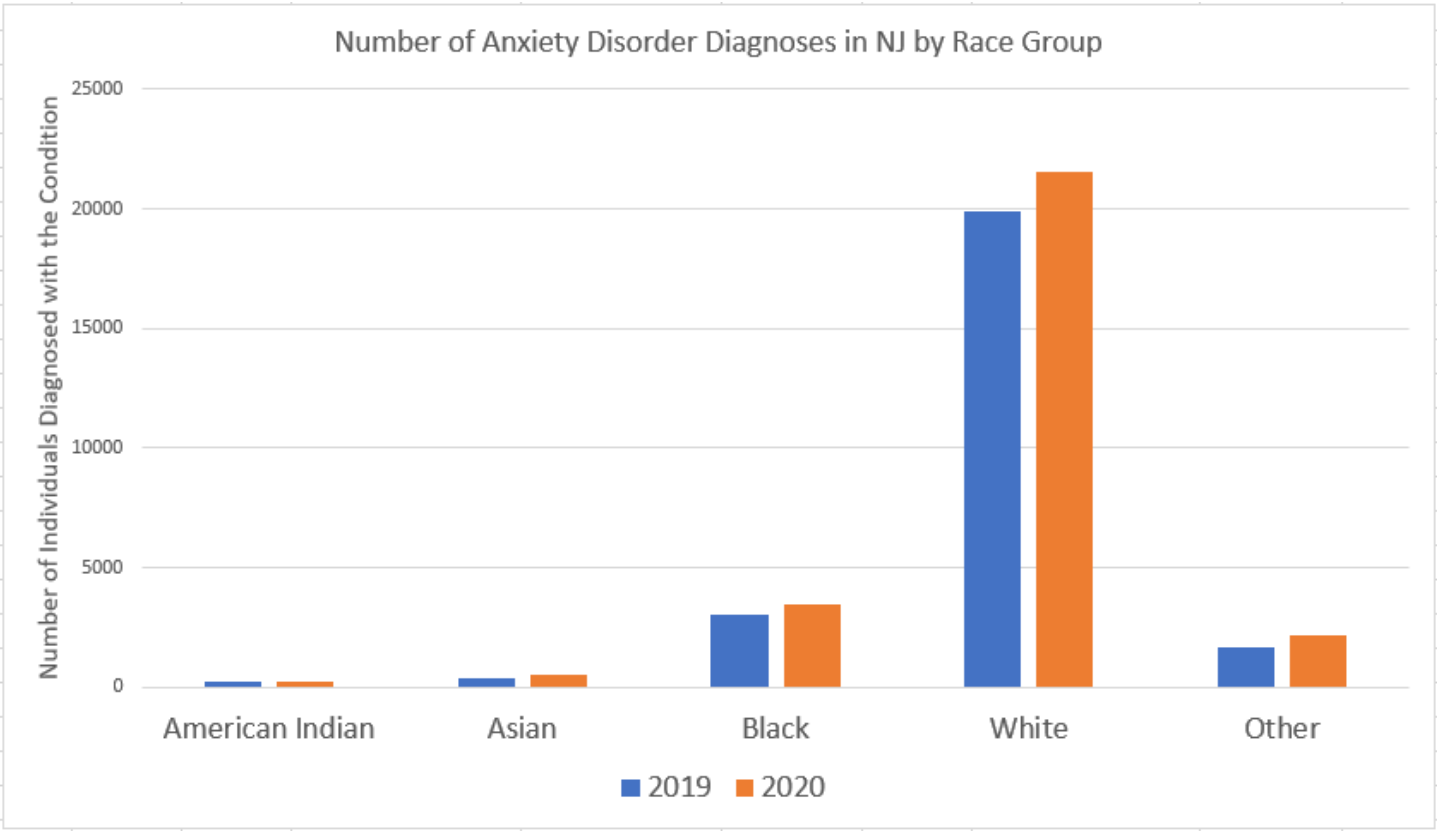


Figure 49e

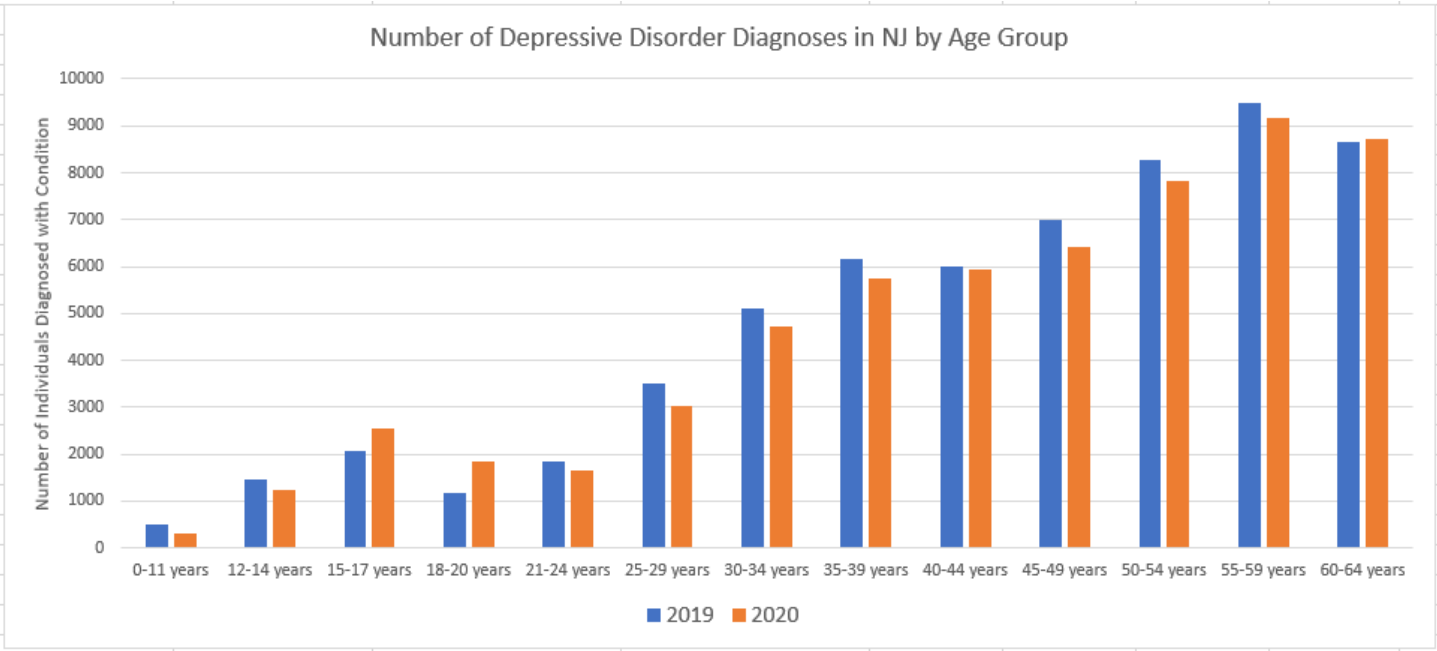
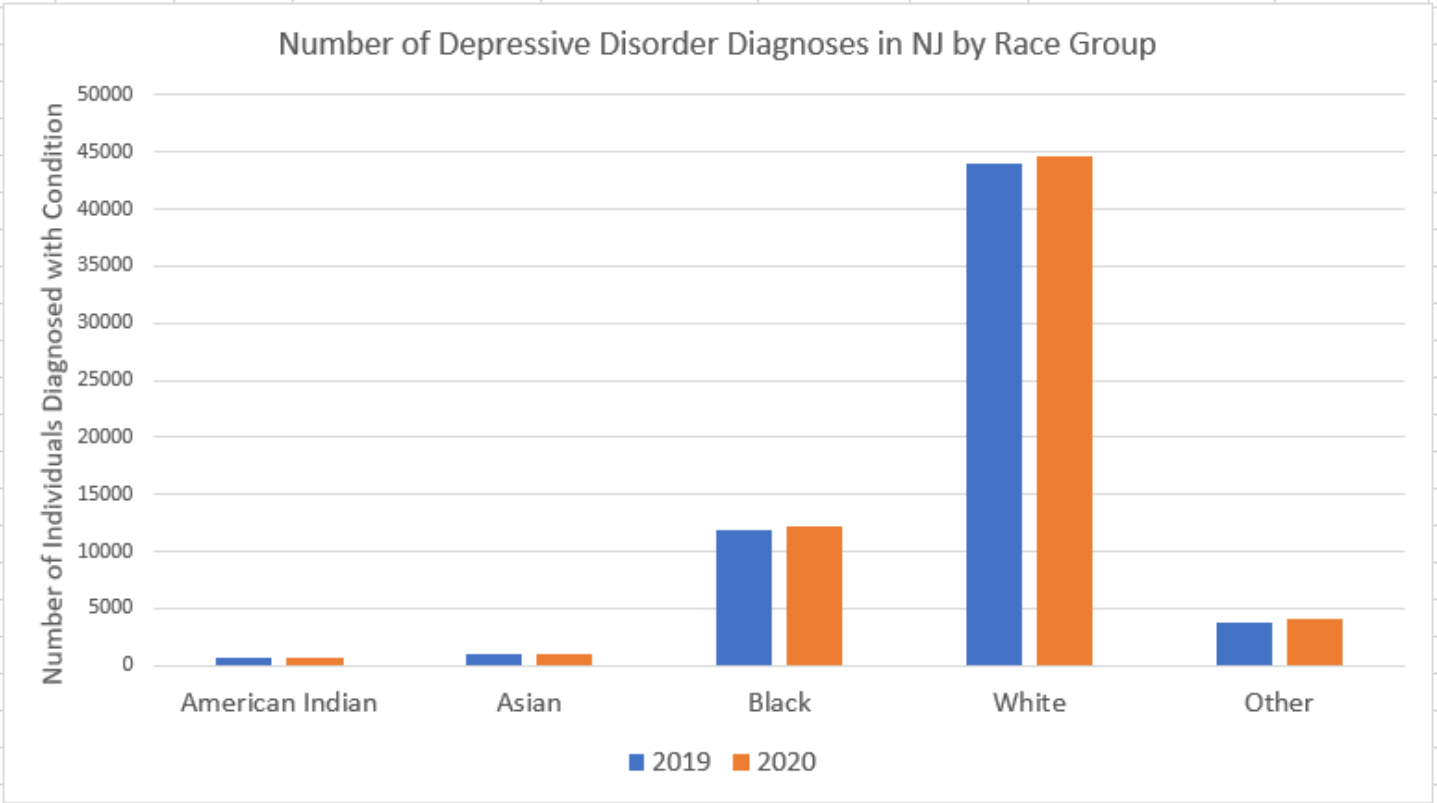


Figure 49f



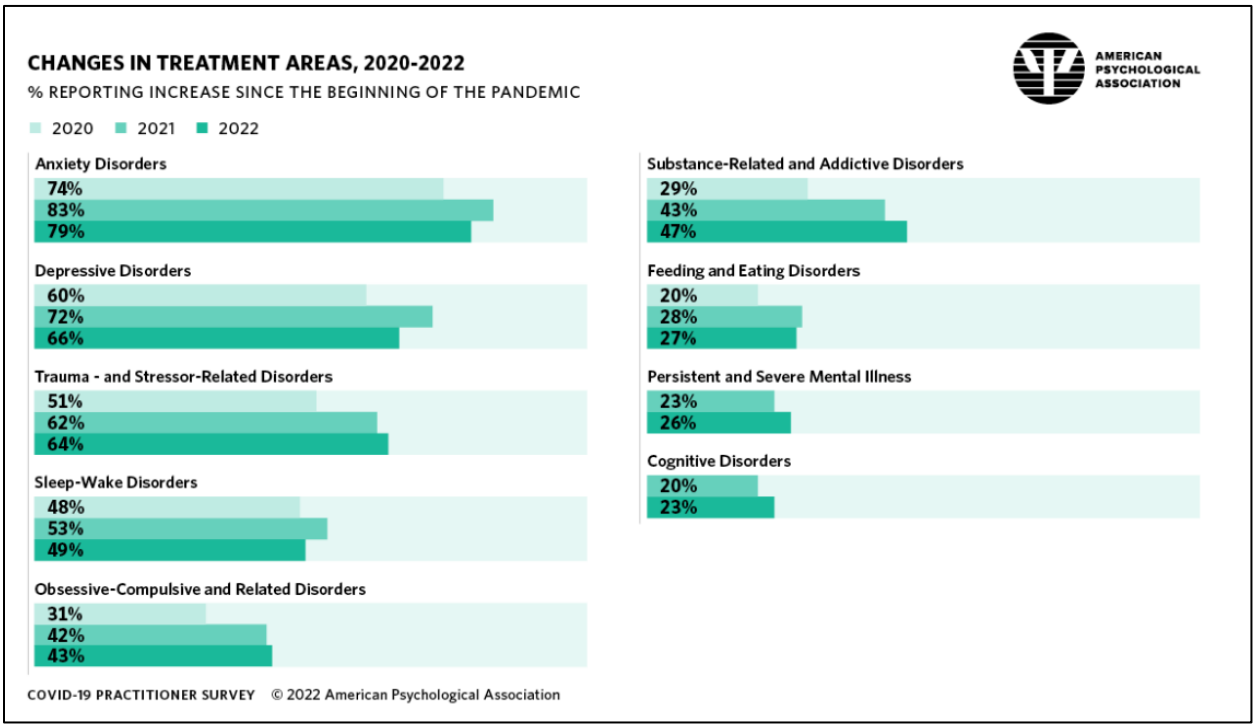
The number of anxiety disorder diagnoses in New Jersey increased in 2020 (relative to 2019) for those aged between 15-17 years (21.2% increase), 18-20 years (50.2% increase), and 60-64 years (1.5% increase) (**Figure 49c**). The number of diagnoses for this disorder increased in 2020 by 25.4% for Asian residents, by 14.4% for Black residents, by 8.5% for White residents and by 31.9% for those identifying as "Other" race (**Figure 49d**).

The number of Depressive Disorder diagnoses in New Jersey increased in 2020 (relative to 2019) for those aged between 15-17 years (23.9% increase), 18-20 years (56.3% increase), and 60-64 years (0.6% increase) (**Figure 49e**). The number of diagnoses for this disorder increased in 2020 by 8.5% for Asian residents, by 2.7% for Black residents, by 1.4% for White residents and by 10.7% for those identifying as "Other" race (**Figure 49f**).

This is consistent with national trends as indicated by mental health practitioners. An annual national survey of licensed psychologists conducted by the American Psychological Association (APA) in 2020, 2021 and 2022 (**Figure 50**)[87] indicate that more than half of those surveyed reported having seen increases in the number of Anxiety Disorders (reported by 74%-83% of respondents), Depressive Disorders (reported by 60%-72% of respondents) and Trauma/Stress-related Disorders (reported by 51%-64% of respondents) since the beginning of the pandemic. A minority of psychologists surveyed indicated seeing increases since the beginning of the pandemic of Sleep-Wake Disorders, Obsessive-Compulsive Disorder (OCD), Substance-Abuse and Addictive Disorders, Eating Disorders, and Cognitive Disorders.

[87] **Source of Figure 50**: American Psychological Association (2022). Psychologists struggle to meet demand amid mental health crisis. 2022 COVID-19 Practitioner Impact Study. Accessed online from: https://www.apa.org/pubs/reports/practitioner/2022-covid-psychologist-workload

Figure 50



Rates of Needing, Seeking and Obtaining Mental Health Treatment

According to the Hughes Center Poll, 20.8% of New Jersey respondents indicated that they felt the need to obtain mental health treatment during the pandemic regardless of whether they obtained it or not (**Figure 51a**). This varied by age, with younger respondents indicating more frequently that they felt the need for mental health treatment (29.5% of 18-29-year-olds and 25.9% of 30-49-year-olds) than older respondents (18.6% of 50-64-year-olds and 8.8% of those aged 65 years or older) (**Figure 51b**).

Figure 51a

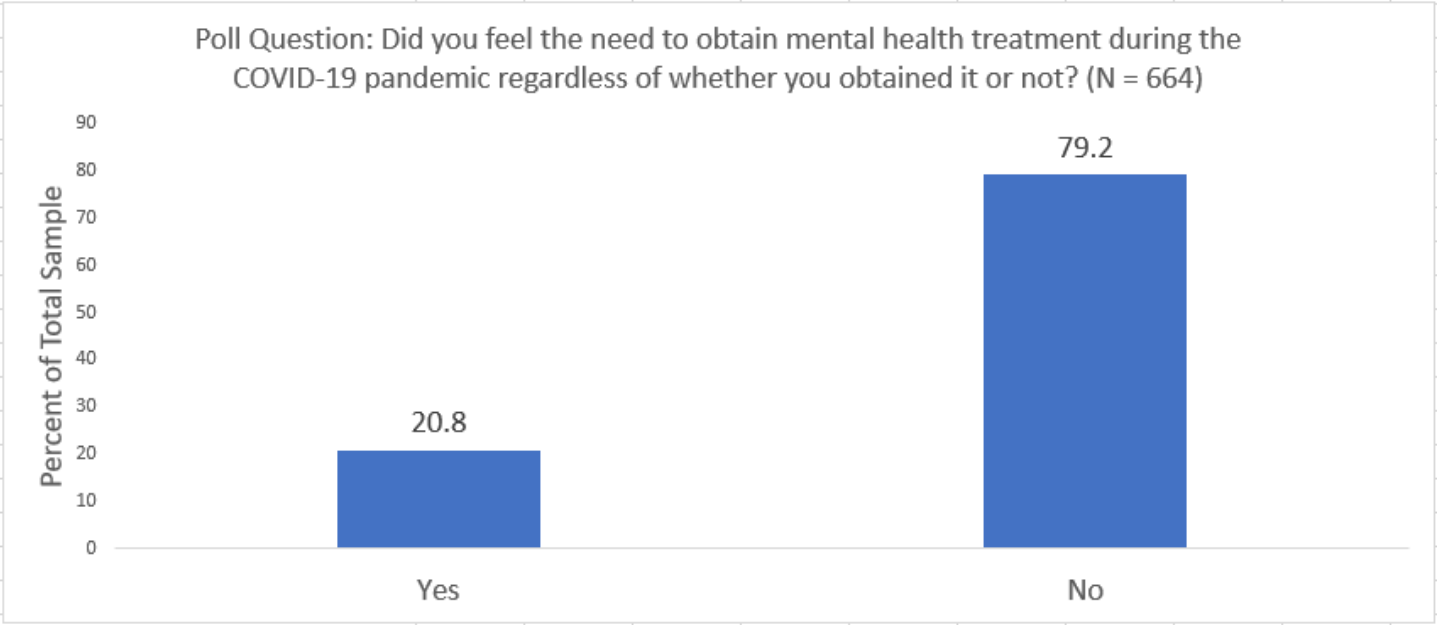
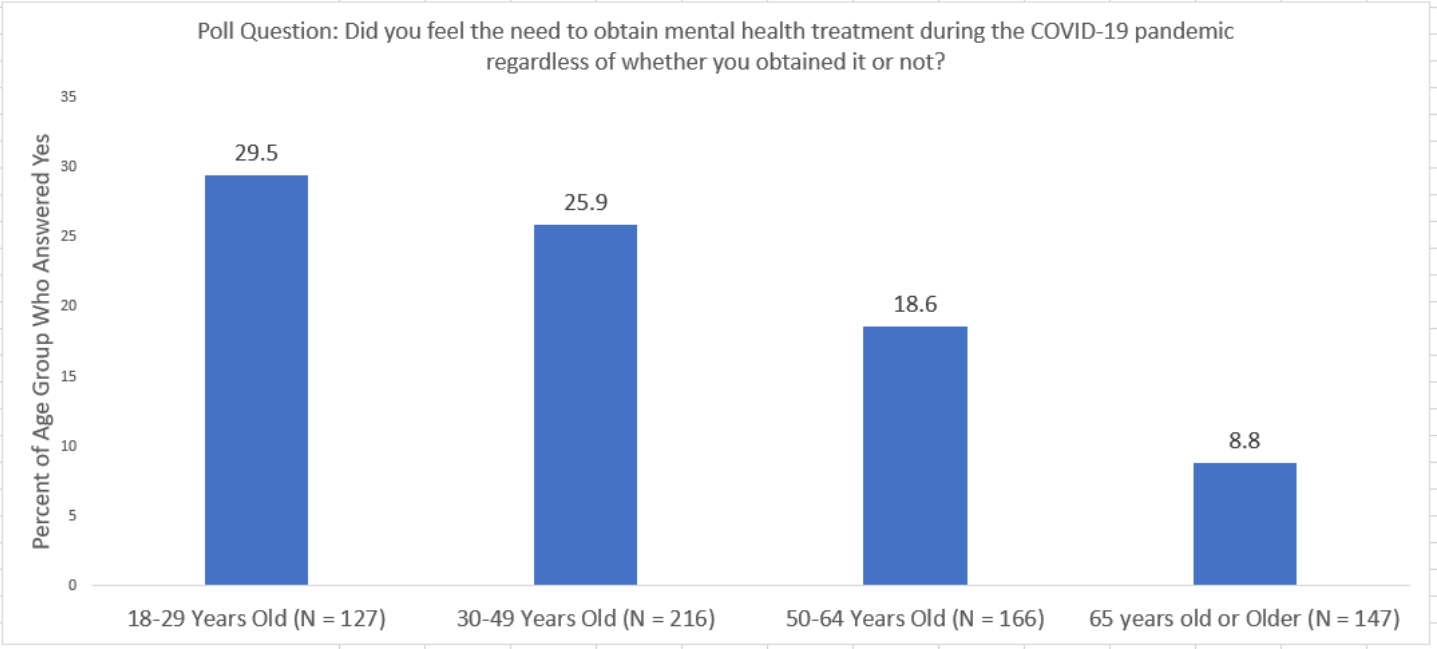


Figure 51b



Of those who indicated in the Hughes Center Poll that they felt the need to obtain mental health treatment, 41.9% indicated that fear or anxiety about COVID-19 impacted their decision to seek treatment (**Figure 52a**). Of these individuals, 52.3% indicated that the COVID-19 pandemic influenced them to seek out

mental health treatment that they otherwise would not have sought out, whereas 40.7% indicated that COVID-19 prevented them from seeking out treatment that they otherwise would have sought out (**Figure 52b**).

Figure 52a

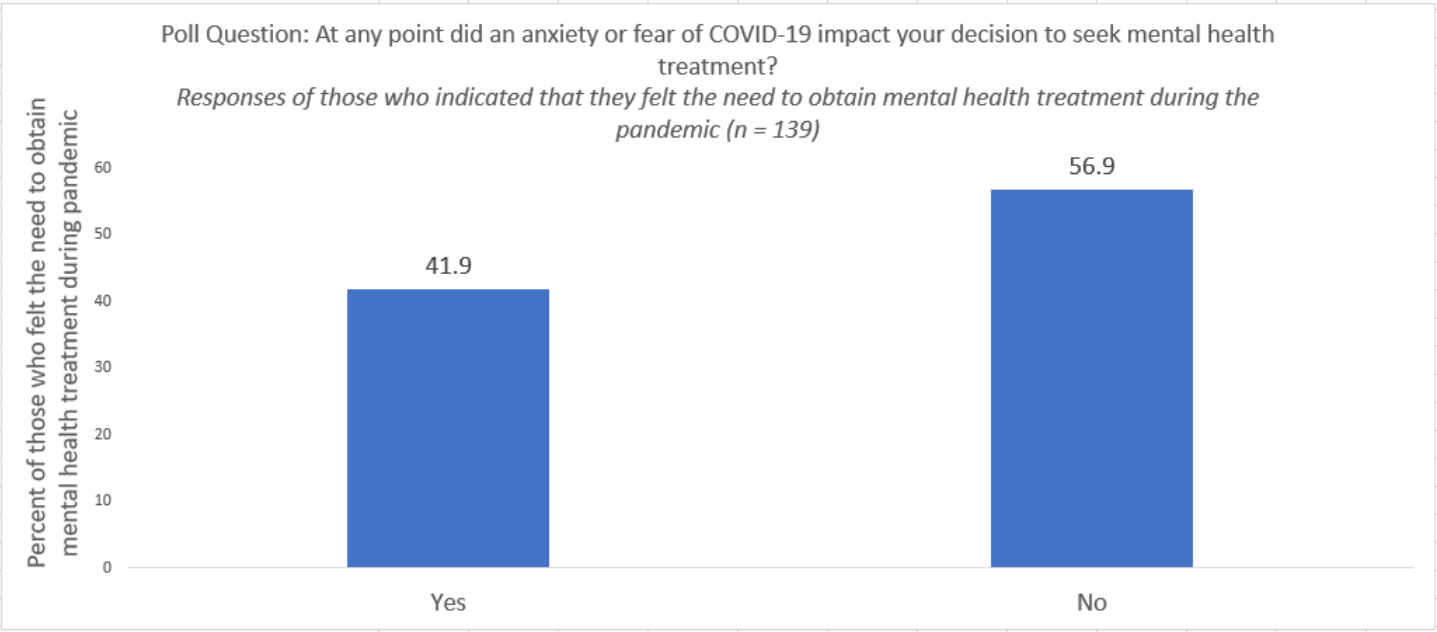
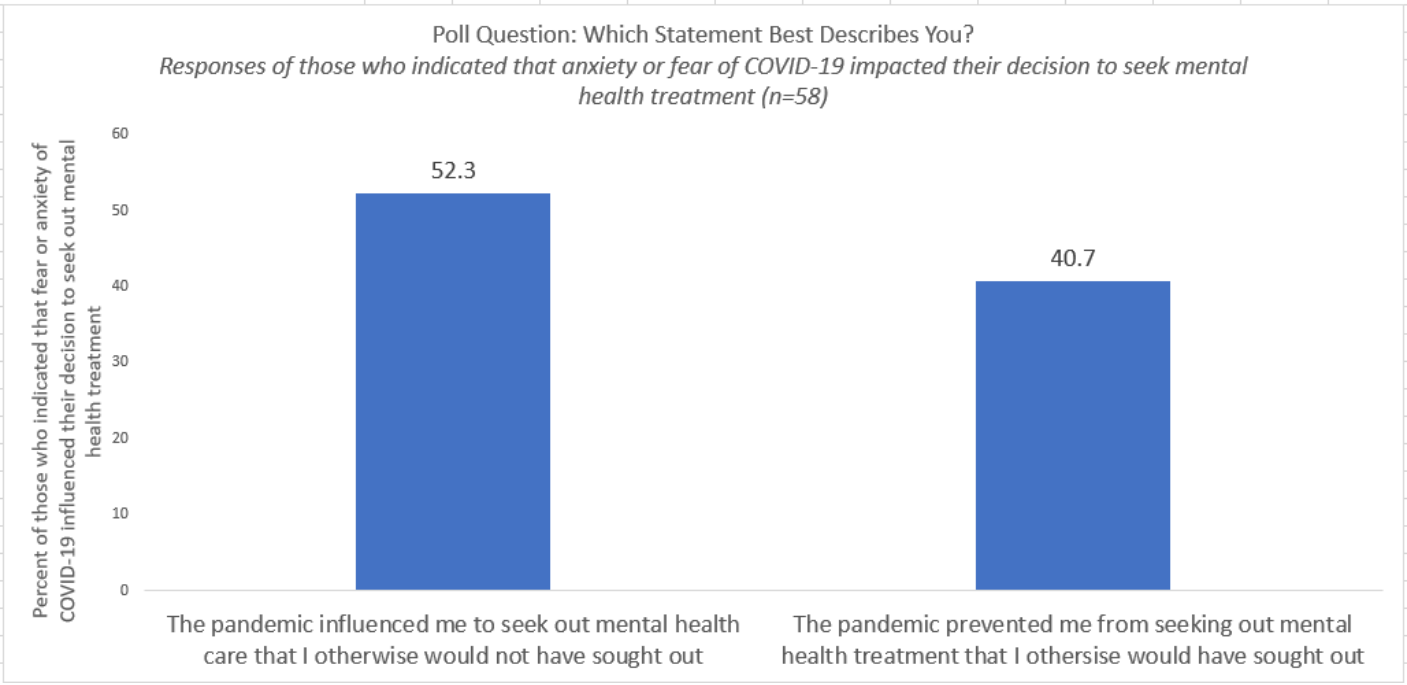


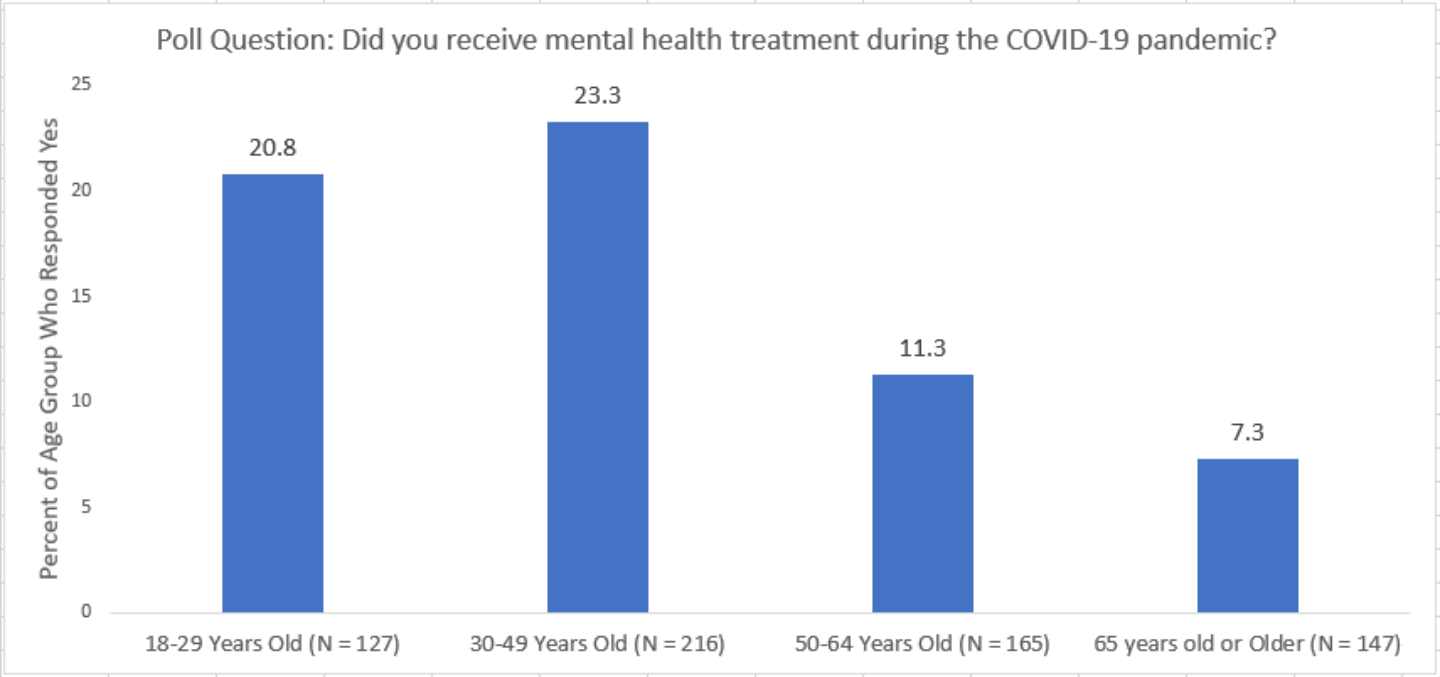
Figure 52b



Compared to the 20.8% of respondents who indicated that they felt the need to obtain mental health treatment regardless of whether they obtained it or not, 16.0% of the poll's respondents indicated that they obtained mental health treatment. However, the percentage of respondents who indicated this varied by age and race.

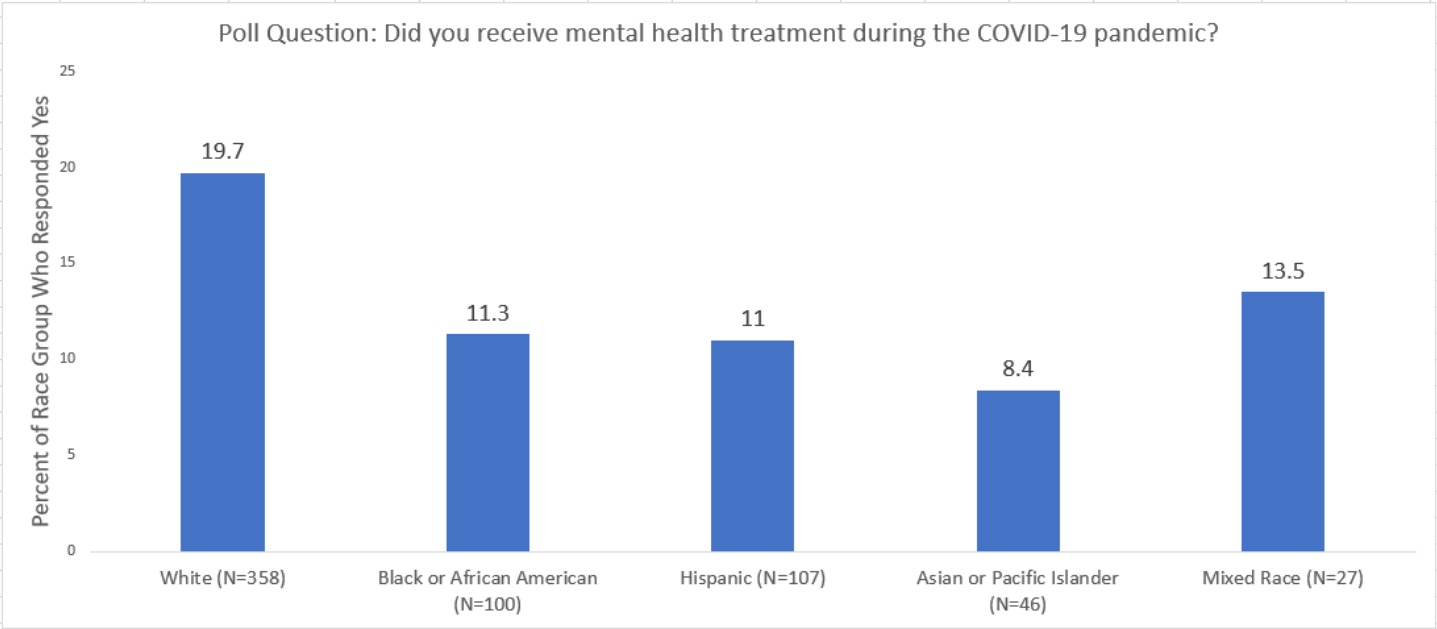
With respect to age differences, younger individuals more frequently indicated that they obtained mental health treatment (20.8% of 18-29-year-olds and 23.3% of 30-49-year-olds) than older individuals did (11.3% of 50-64-year-olds and 7.3% of those aged 65 or older) (**Figure 53a**).

Figure 53a



With respect to race, White respondents were most likely to have obtained mental health treatment during the pandemic (19.7%) compared to Mixed-Race (13.5%), Hispanic (11.0%), Black/African American (11.3%) and Asian/Pacific Islander (8.4%) respondents (**Figure 53b**).

Figure 53b



The 16% of respondents of the Hughes Center Poll is a somewhat larger figure than the percentage of New Jersey residents indicating via the CDC Household Pulse Survey that they received counseling or therapy during the pandemic. As one can see in **Figure 54a**[88], the percentage of New Jersey respondents indicating that they received counseling or therapy within the four weeks prior to being surveyed ranged from 9%-12% between the 6th and 23rd months of the pandemic (or, between September 2020 and April 2022), which was generally consistent with national percentages. During this same time period, data from the same CDC survey also indicated that between 16%-21% of New Jersey residents reported taking prescription medication for a mental health condition within the prior four weeks of being surveyed (Figure **54b**). These figures were consistently below the national average during this time period.

[88] **Analysis of data obtained via**: Centers of Disease Control and Prevention - Household Pulse Survey. Accessed online at: https://www.cdc.gov/nchs/covid19/pulse/mental-health-care.htm

Figure 54a

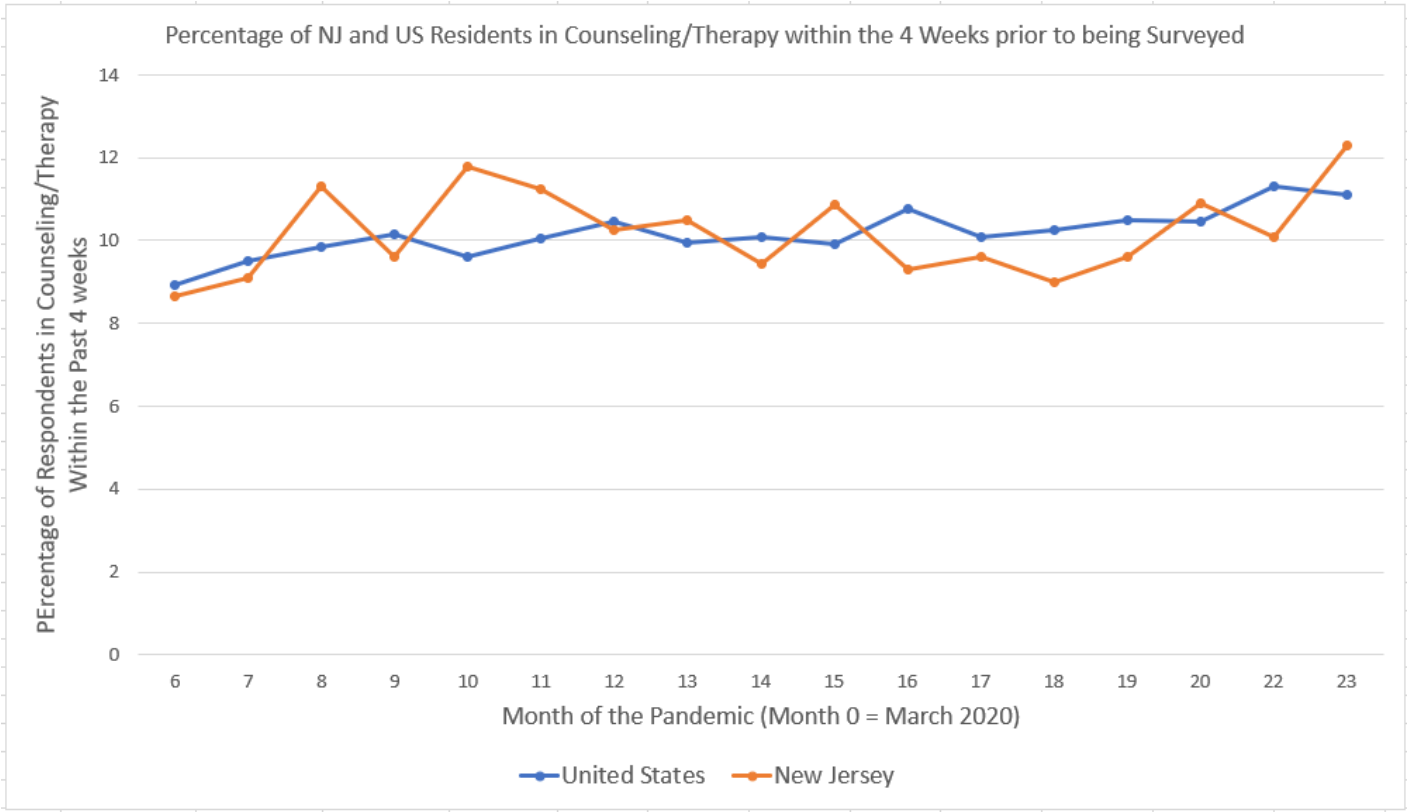
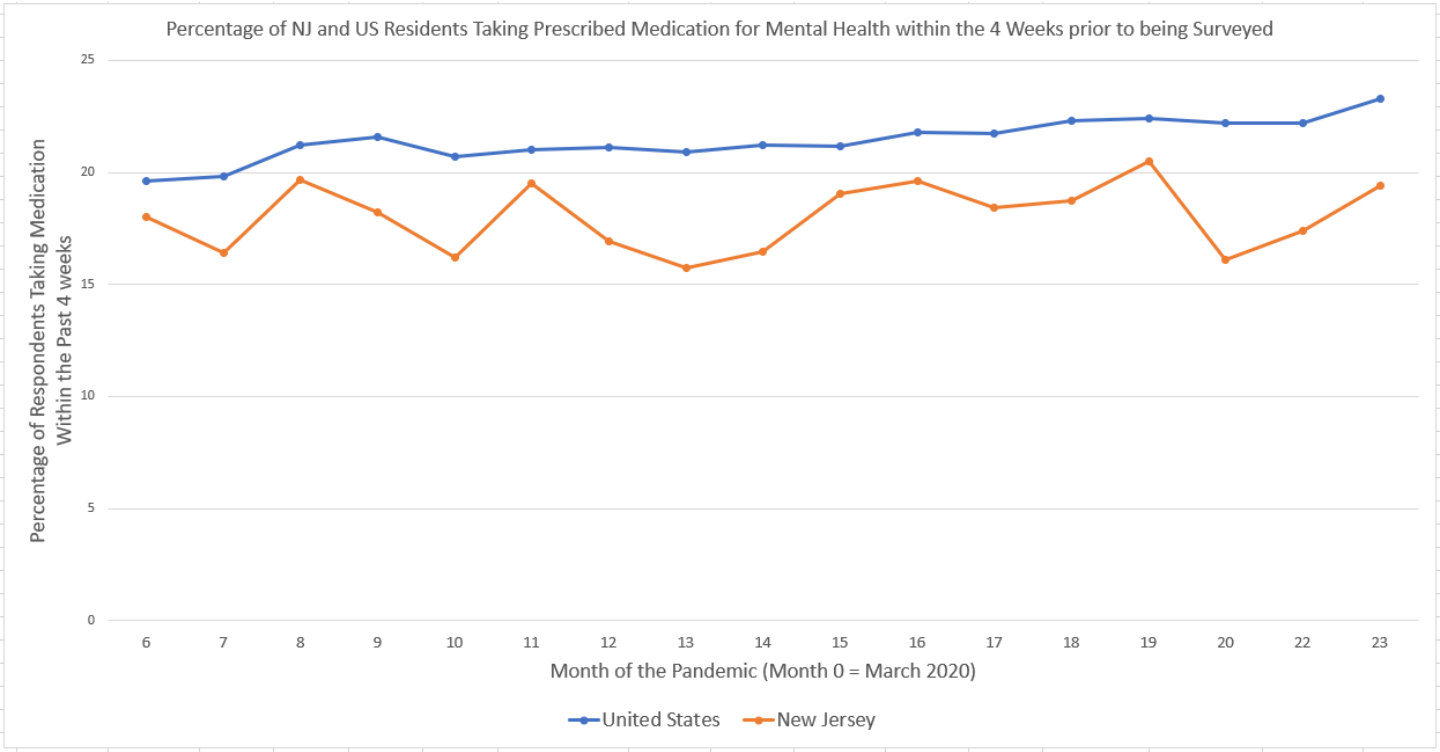
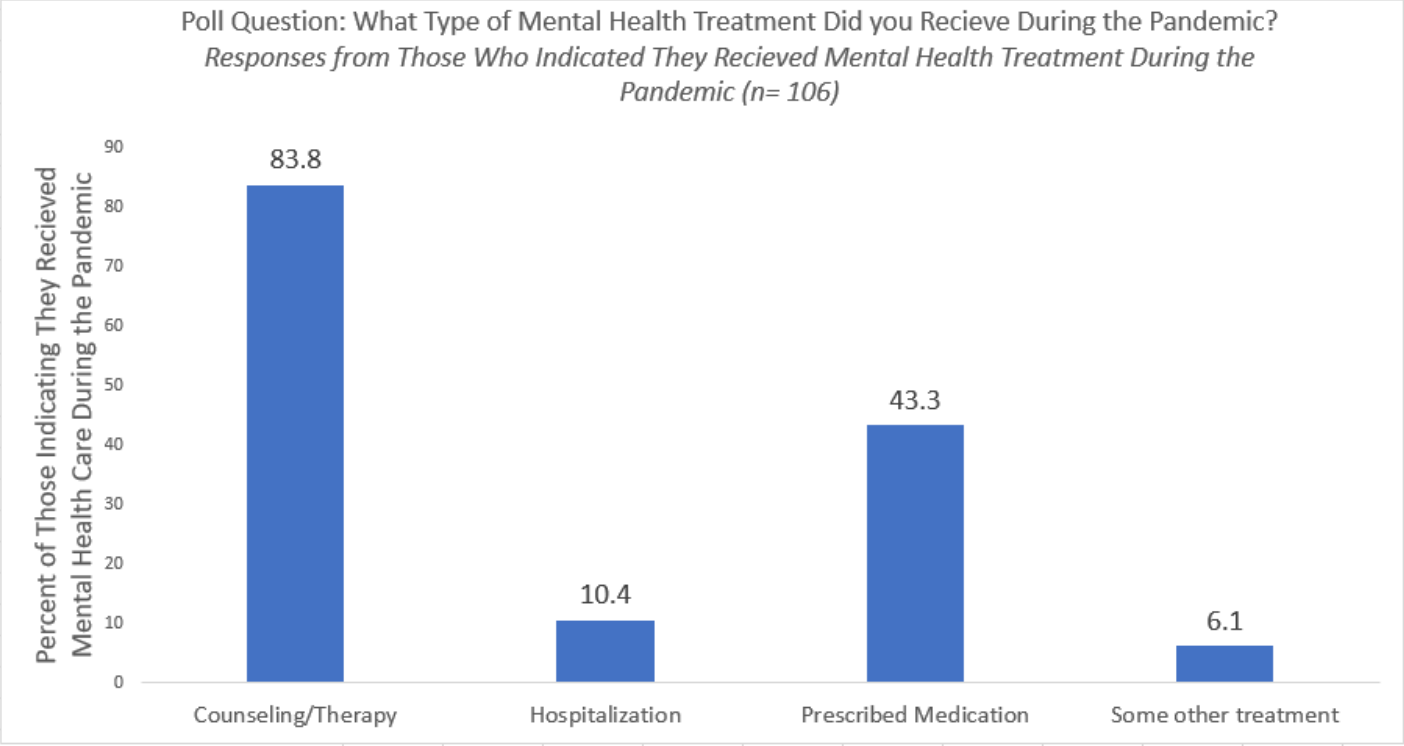


Figure 53b



Of those who indicated that they obtained mental health treatment during the pandemic in the Hughes Center Poll, 83.8% indicated that they received counseling/therapy, 10.4% indicated they were hospitalized, and 43.3% indicated they were taking or had taken prescribed medication (**Figure 55**).

Figure 55



Due to physical distancing policies, stay-at-home orders and general fears of contracting COVID-19, telehealth became a popular method of obtaining and delivering mental health care regionally and nationwide. Regionally, the Northeast of the United States saw a large increase in the percentage of all medical treatments that were delivered remotely[89]. In 2019, the average monthly percentage of all medical claims in the Northeast that were for telehealth forms of treatment was 0.08%. This monthly average increased to 7.70% in 2020 (a 9,525% increase in a single year) and remained at the elevated levels of 5.8% and 6.04% in 2021 and 2022, respectively (**Figure 56a**). In 2019, 37.8% of all Northeast telehealth claims were for the treatment of mental

[89] **Analysis of data displayed in Figures 56a, 56b and 56c obtained via**: FAIR Health (2023). Monthly Telehealth Regional Tracker. Accessed online at: https://www.fairhealth.org/states-by-the-numbers/telehealth

health problems. This share of all telehealth claims that were used for mental health treatment increased in 2020 by 29.6%, an additional 32.8% in 2021 and an additional 9.0% in 2022 (**Figure 56b**). Of all Northeast mental health treatment-focused telehealth claims in 2021, the three most frequently treated disorders were anxiety (32%), depression (21%) and adjustment disorder (18%) (**Figure 56c**).

Figure 56a

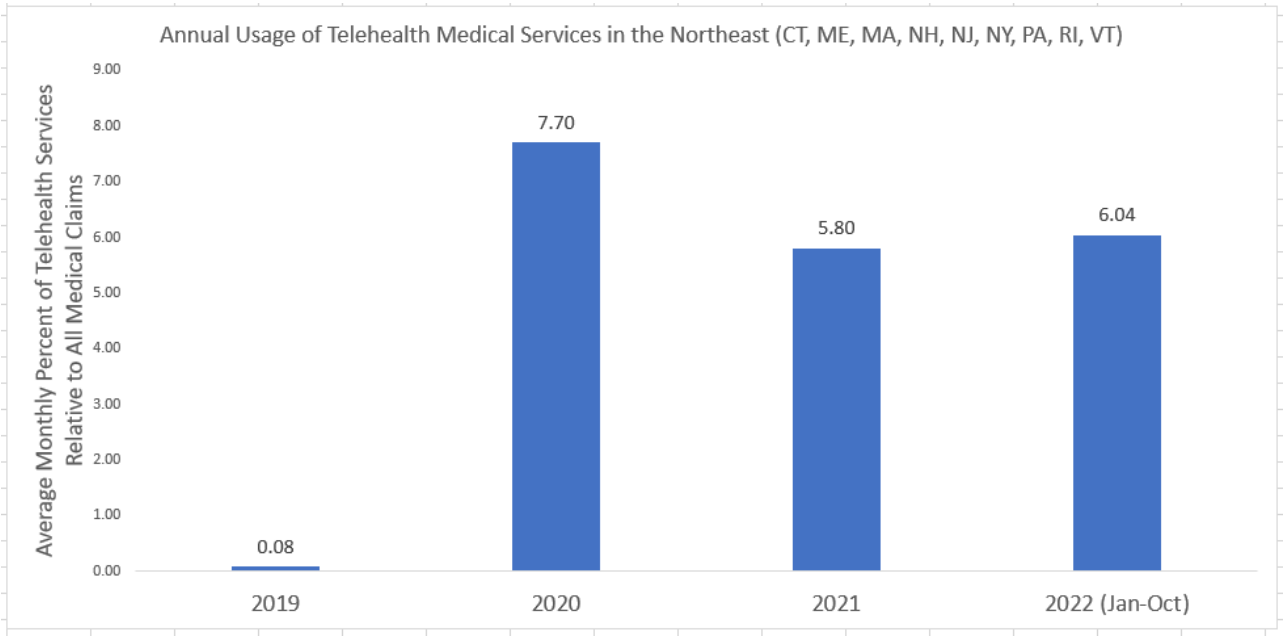


Figure 56b

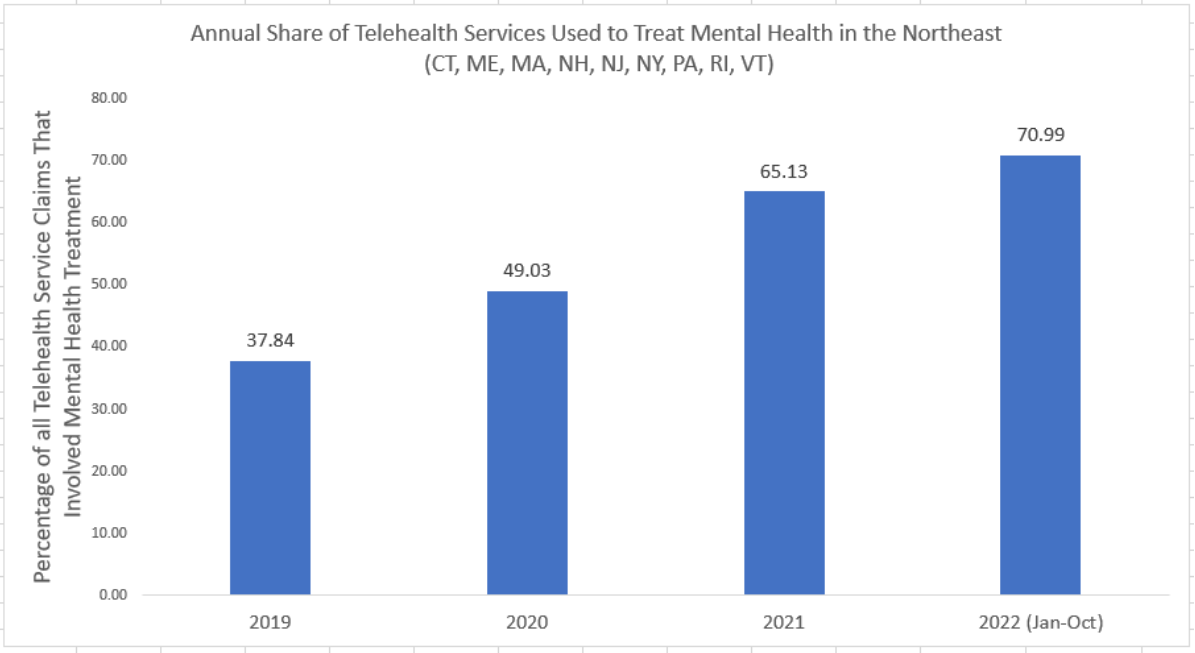
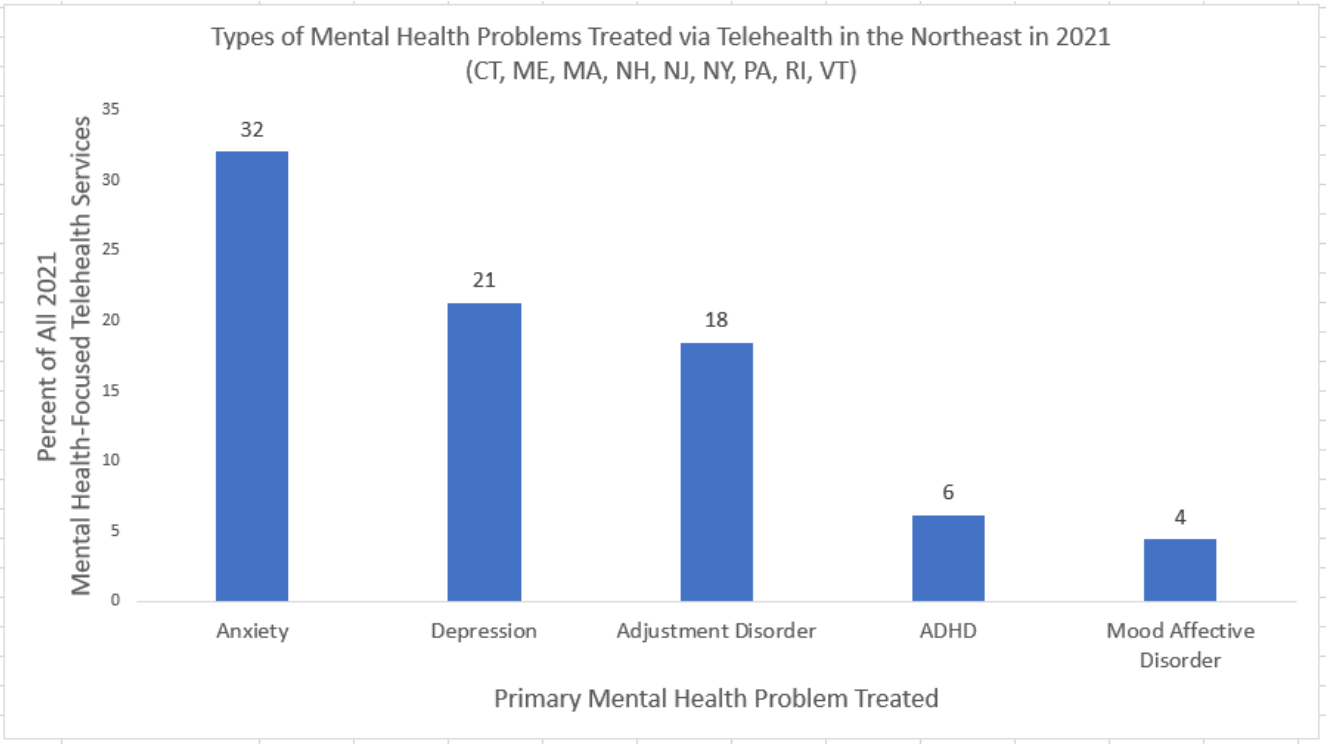


Figure 56c



Specifically in New Jersey, 2020 saw a 250% increase in the number of mental health facilities offering telehealth services in 2020 relative to 2019 (**Figure 57a**), with 61.2% of mental health facilities in the state offering telehealth services in 2020 (between 2016-2019, this percentage ranged from only 9.1%-17.9%) (**Figure 57b**)[90].

[90] **Analysis of data displayed in Figure 57a and 57b obtained via**: Substance Abuse and Mental Health Services Administration (2021). National Mental Health Services Survey (N-MHSS) Annual Report. Accessed online at: https://www.samhsa.gov/data/report/national-mental-health-services-survey-n-mhss-2020-data-mental-health-treatment-facilities

Figure 57a

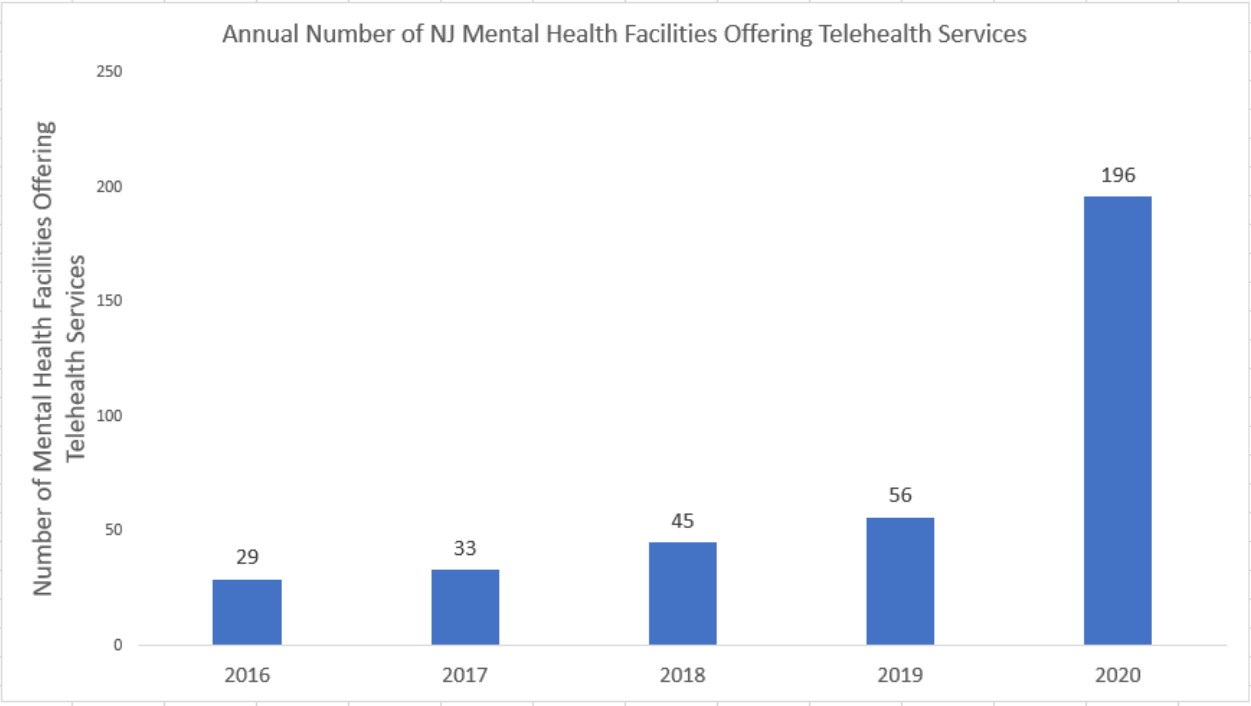
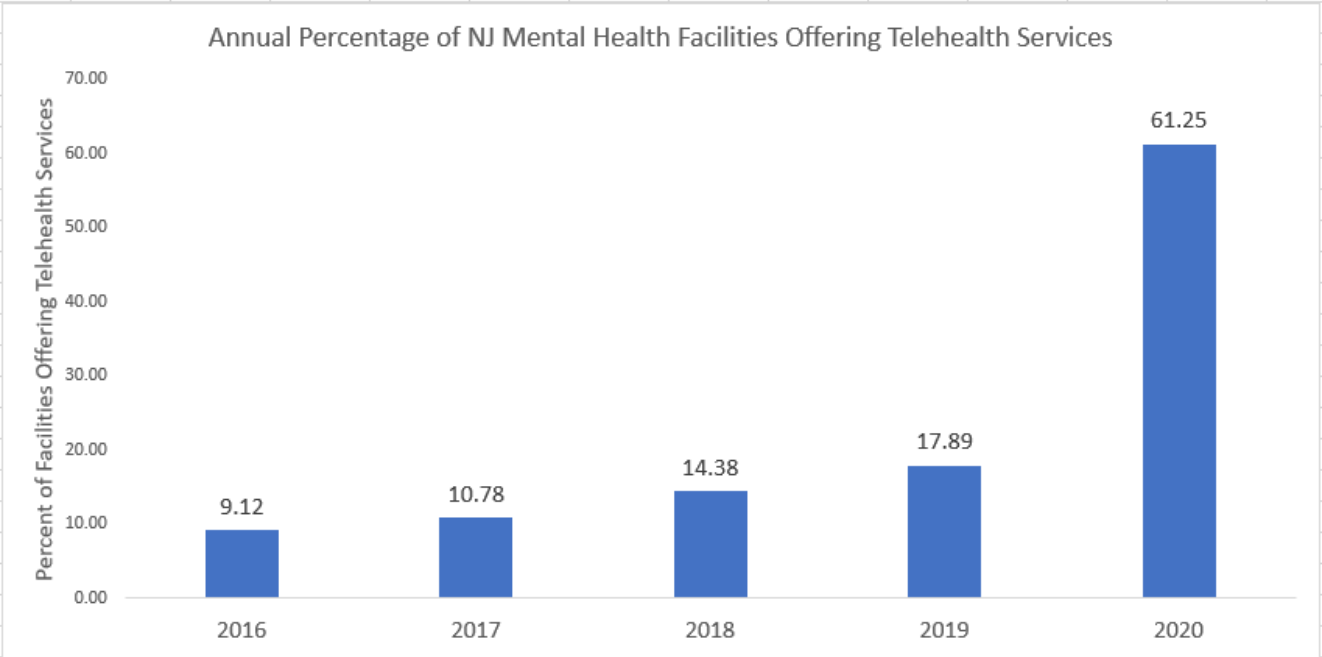


Figure 57b



According to the American Psychological Association's (APA)'s annual survey of licensed psychologists[91], 64% of licensed psychologists in the United States reported treating patients exclusively via telehealth methods in 2020. This figure decreased to 47% in 2021 and to 31% in 2022. Still, 89% of licensed psychologists in 2022 reported providing telehealth treatment options to their patients.

In summary thus far, telehealth forms of treatment have increasingly become a popular method of mental health care, especially for anxiety and depression. The 2020 increase in the usage of this form of treatment option has remained into 2022, despite the 2022 ease/elimination of restrictions of in-person care and general reduced fears of becoming ill with COVID-19. The information discussed above leads us to predict that telehealth will persist as a common treatment option for mental health care. Thus, it is important to assess how patients and mental health practitioners have evaluated the quality of this type of treatment relative to traditional in-person treatment methods.

According to the Hughes Center Poll, 71.5% of New Jersey respondents who indicated that they obtained mental health treatment during the pandemic reported having received such treatment via telehealth methods. These individuals who reported receiving telehealth treatment were asked to describe their experiences with that treatment method. 70.0% of these individuals reported that the quality of their telehealth mental treatment was about the same as their experiences with in-person treatment (41.7%) or better (28.3%). However, 17.7% indicated that they believed that the quality of their telehealth mental health treatment was worse than their prior experiences with in-person treatment (**Figure 58**).

[91] **Source**: American Psychological Association (2022). Psychologists struggle to meet demand amid mental health crisis. 2022 COVID-19 Practitioner Impact Study. Accessed online from: https://www.apa.org/pubs/reports/practitioner/2022-covid-psychologist-workload

Figure 58

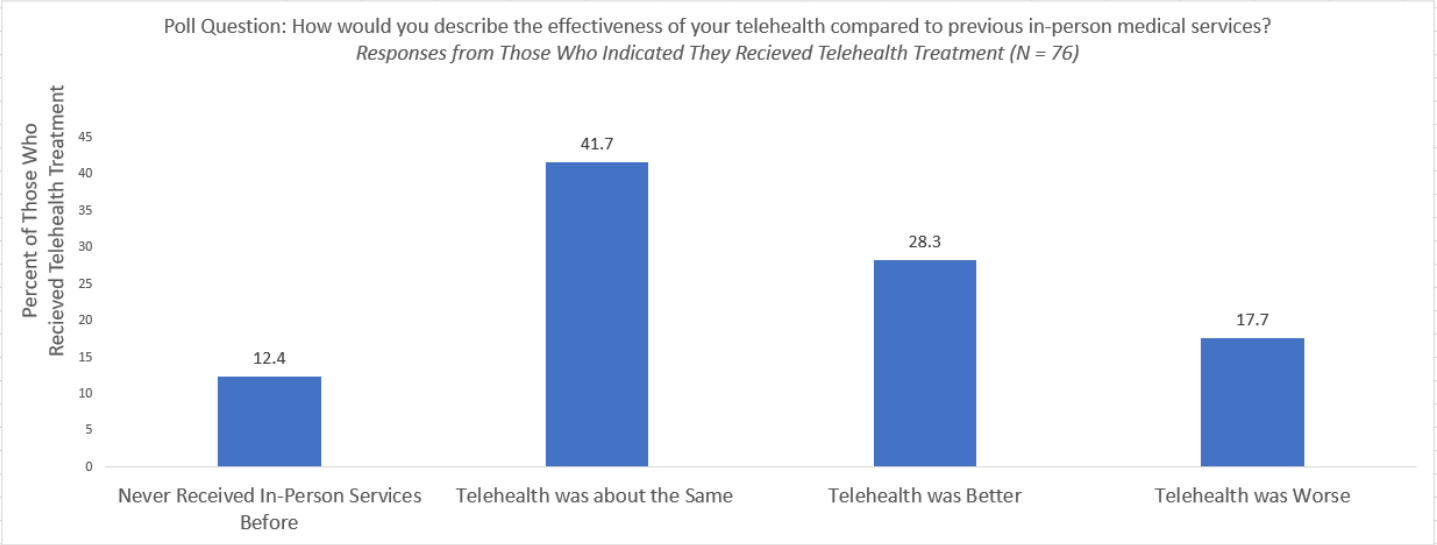
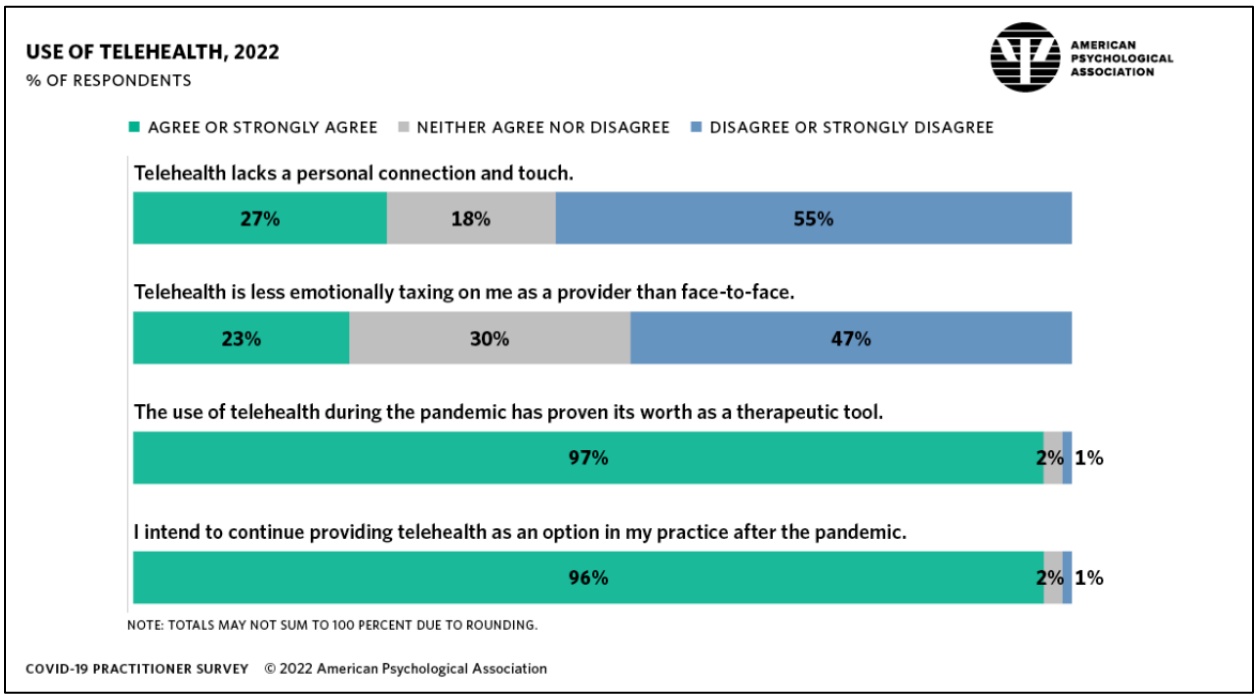


Figure 59 reflects the evaluation of the quality of telehealth mental health care from the perspective of licensed psychologists who were surveyed by the APA[92]. Over 95% of surveyed psychologists indicated that the use of telehealth treatment is a useful therapeutic tool and that they intend to continue providing their patients with this treatment option. 23% of psychologists indicated that they believed this treatment option lacked "a personal connection and touch" (55% disagreed with this). 47% disagreed with the statement that "telehealth is less emotionally taxing on me as a provider than face-to-face". However, the wording of the statement and response options here make it ambiguous as to whether this indicates that these psychologists felt that the degree of emotional taxation experienced during telehealth treatment was more than or comparable to that experienced during in-person treatment.

[92] **Source**: American Psychological Association (2022). Psychologists struggle to meet demand amid mental health crisis. 2022 COVID-19 Practitioner Impact Study. Accessed online from: https://www.apa.org/pubs/reports/practitioner/2022-covid-psychologist-workload

Figure 59

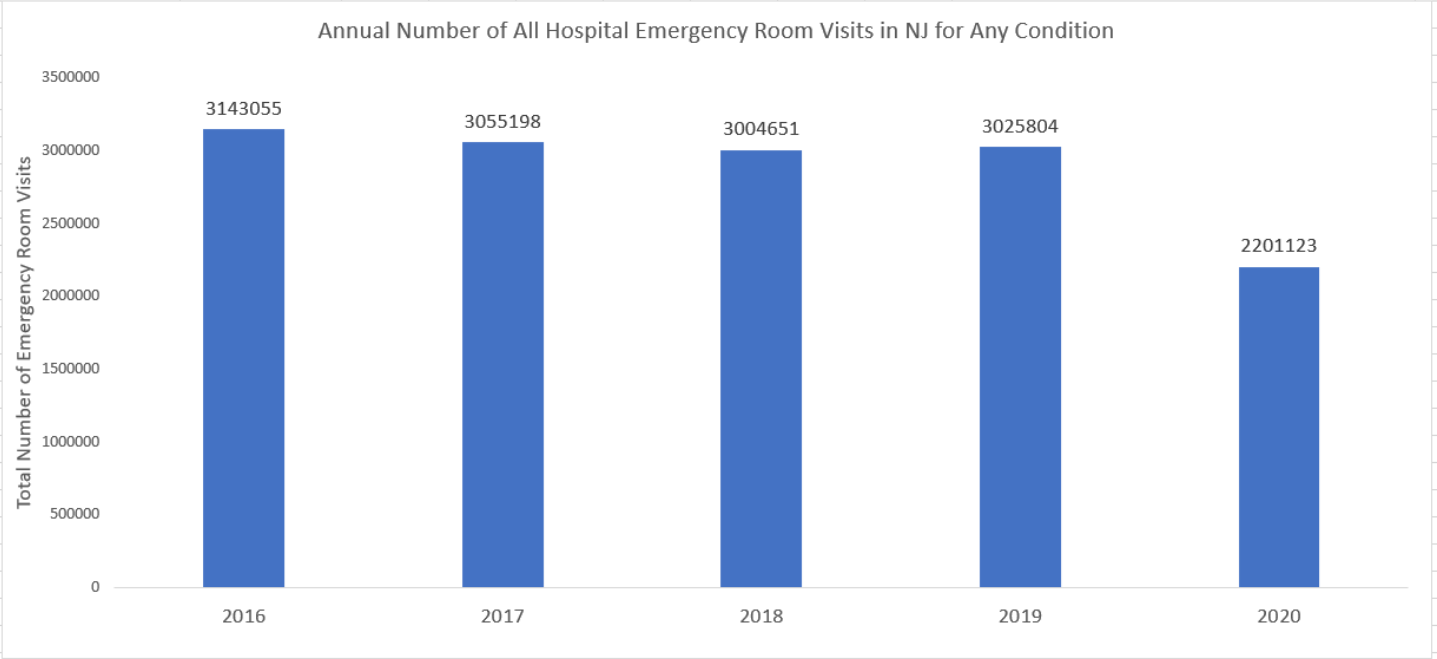


Mental Health Treatment by Hospitals: Emergency Room Visits for Mental Health Problems

In this section, we will report observations that were obtained via an analysis of public data pertaining to New Jersey hospital emergency room visits that resulted in mental health diagnoses[93]. In 2020, hospital emergency room visits resulting in any type of medical diagnosis substantially decreased relative to prior years (**Figure 60a**). Between 2016-2019, the average annual change in the number of emergency room visits for any medical reason was a 1.25% decrease. However, relative to 2019, the number of emergency room visits for any medical reason decreased by 27.3% in 2020, highlighting the disruption to medical care provided by hospital emergency rooms that the COVID-19 pandemic caused.

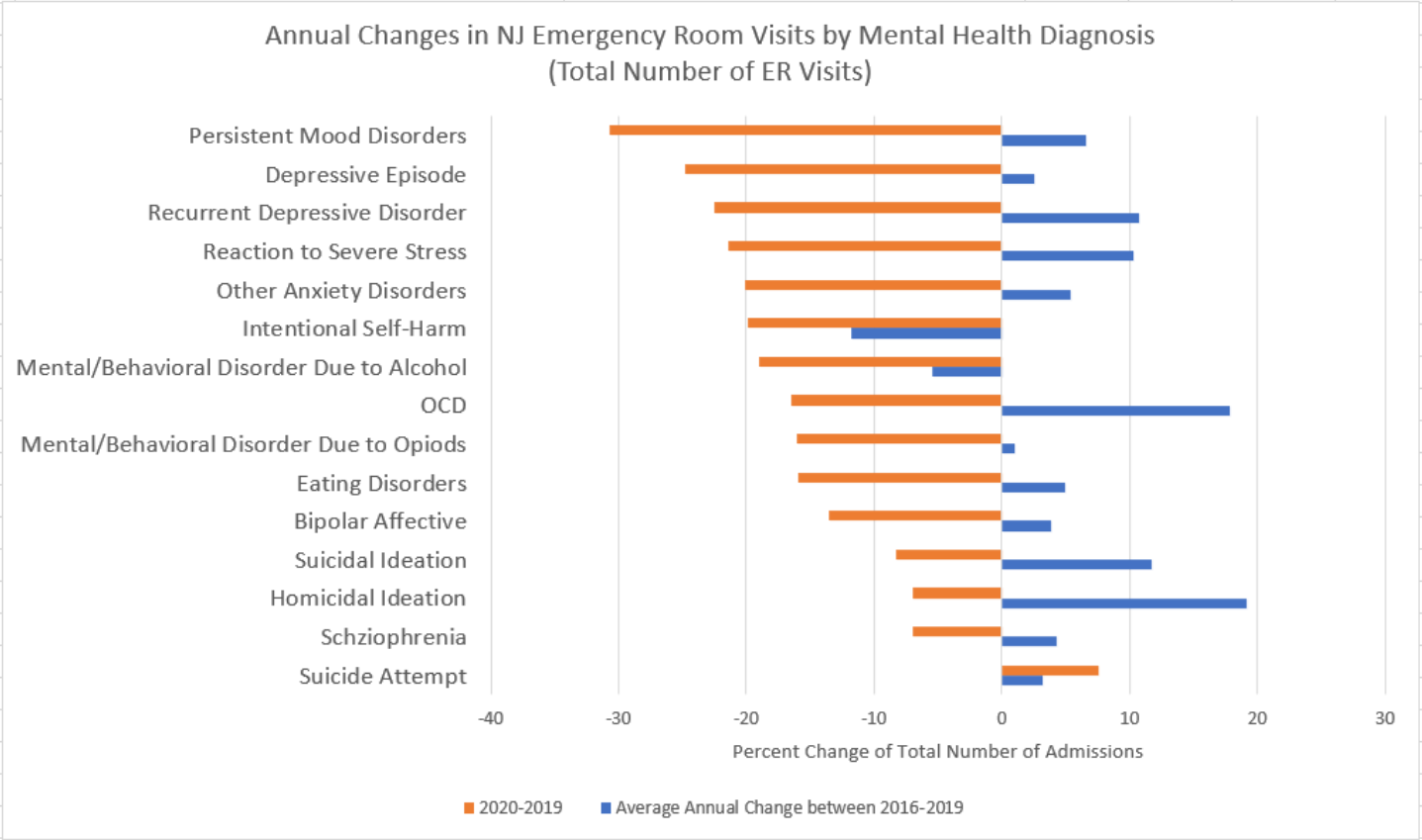
[93] **Analysis of data obtained via**: New Jersey State Health Assessment Data (NJSHAD) – New Jersey Emergency Department Visit Data: 2016-2021 - Count. Accessed online at: https://www-doh.state.nj.us/doh-shad/query/builder/ub/UB10AllED/Count.html

Figure 60a



Emergency room visits resulting in a diagnosis for a mental health/behavioral disorder likewise decreased in 2020 relative to 2019 by substantial amounts (**Figure 60b**). Of all the 15 mental health/behavioral disorders assessed in this analysis, 14 of them were associated with decreases in the number of hospital ER visits resulting in those diagnoses, with decreases in such visits ranging from 7.0%-30.7% less than they had been in 2019. Prior to 2020, most of these diagnoses (other than Intentional Self-Harm and Mental/Behavioral Disorder Due to Alcohol) increased each year on average between the years 2016-2019, strongly suggesting that the 2020 decrease in the number of diagnoses of these disorders were related to the pandemic.

Figure 60b[94]



The only mental health/behavioral disorder diagnosis that was observed to have an increase in the number of ER visits was suicide attempts. Whereas the number of ER visits for suicide attempts changed annually between 2016-2019 by an average of a 3.2% increase, the number of suicide attempts in 2020 increased by 7.5% in 2020 (relative to 2019).

The 2019-2020 degree of change in the number of ER visits related to suicide attempts varied by age, sex and race. With respect to age, increases in the number of ER visits related to suicide attempts increased only for those aged between 25-34 years (26.9% increase), 35-44-year-olds (32.1% increase), 55-64-year-olds

[94] **ICD-10 codes to classify mental/behavioral disorder diagnoses in hospital emergency rooms**: Intentional Self-Harm (X71-X83), Suicide Attempt (T14.91), Homicidal Ideation (R45.850), Suicidal Ideation (R45.851), Mental/Behavioral Disorder Due to Alcohol (F10), Mental/Behavioral Disorder Due to Opioids (F11), Eating Disorders (F50), Reaction to Severe Stress (F43), OCD (F42), Other Anxiety Disorders (F41), Persistent Mood Disorders (F34), Recurrent Depressive Disorder (F33), Schizophrenia (F20), Bipolar Affective Disorder (F31), Depressive Episode (F32)

(25.0% increase) and 65-74-year-olds (36.4% increase). Individuals in other age groups were observed to have a decrease in suicide attempt-related ER visits. With respect to sex, females were observed to have a greater 2020 (relative to 2019) increase in the number of suicide attempt-related ER visits (11.2% increase) compared to males (3.2% increase). Finally, with respect to race, 2020 increases in the number of suicide attempt-related ER visits were observed for Black residents (20% increase) and "Other"-race residents (19.6% increase), whereas decreases were observed for White residents (3.4% decrease) and Asian residents (5.9% decrease).

Age-specific ER visits in New Jersey related to suicide attempts were somewhat inconsistent with self-reported suicide attempts as indicated by New Jersey data from SAMHSA's National Survey of Drug Use and Mental Health (NSDUH) (**Figure 26**)[95]. Self-reports provided by New Jersey respondents on the NSDUH indicated that suicide attempts increased in 2021 relative to pre-pandemic years, but primarily for those aged 18-25 years (data for older respondents indicated a decrease in suicide attempts in New Jersey in 2021 relative to pre-pandemic years). In contrast, the New Jersey ER visit observations reported above indicate that the increase in the number of suicide attempts were observed primarily in those aged older than 25 years. However, it is important to emphasize that the ER data analyzed here compared 2020 values to those observed in 2019, whereas the NSDUH data compared 2021 values to those reported in 2018/2019 (as New Jersey-specific 2020 NSDUH data is not publicly available), thus limiting the value of this comparison.

Nationally, the Centers of Disease Control and Prevention (CDC) reported[96] that weekly suicide attempt-related ER visits for those aged between 12-17 years decreased between March 29-April 25, 2020, but increased between July 26-August 22, 2020 (22.3% increase) and February 21 – March 20, 2021 (39.1% increase) (all comparisons made relative to the same periods in 2019/early 2020). This increase was much greater for females (50.6% increase in summer 2020 relative to summer 2019) than males (3.7% increase within

[95] **Analysis of data obtained via**: Substance Abuse and Mental Health Services Administration (SAMHSA). National Survey on Drug Use and Mental Health (NSDUH) – State Reports. Accessed online at: https://www.samhsa.gov/data/nsduh/state-reports

[96] **Source**: Centers for Disease Control and Prevention (2021). Emergency Department Visits for Suspected Suicide Attempts Among Persons Aged 12–25 Years Before and During the COVID-19 Pandemic — United States, January 2019–May 2021. Accessed online at: https://stacks.cdc.gov/view/cdc/117824

the same period). For those aged between 18-25 years, the number of suicide attempt-related ER visits in the pandemic period of late March 2020/early 2021 did not significantly differ from comparable pre-pandemic time-period numbers.

Internationally, a meta-analysis[97] reviewing studies of ER admissions data from 10 countries[98] indicated increases in suicide attempt-, suicidal-ideation-, and self-harm-related ER visits for those aged 18 years or younger during the first year of the pandemic. Consistent with New Jersey and United States data, these increases were much greater in female than male children/adolescents.

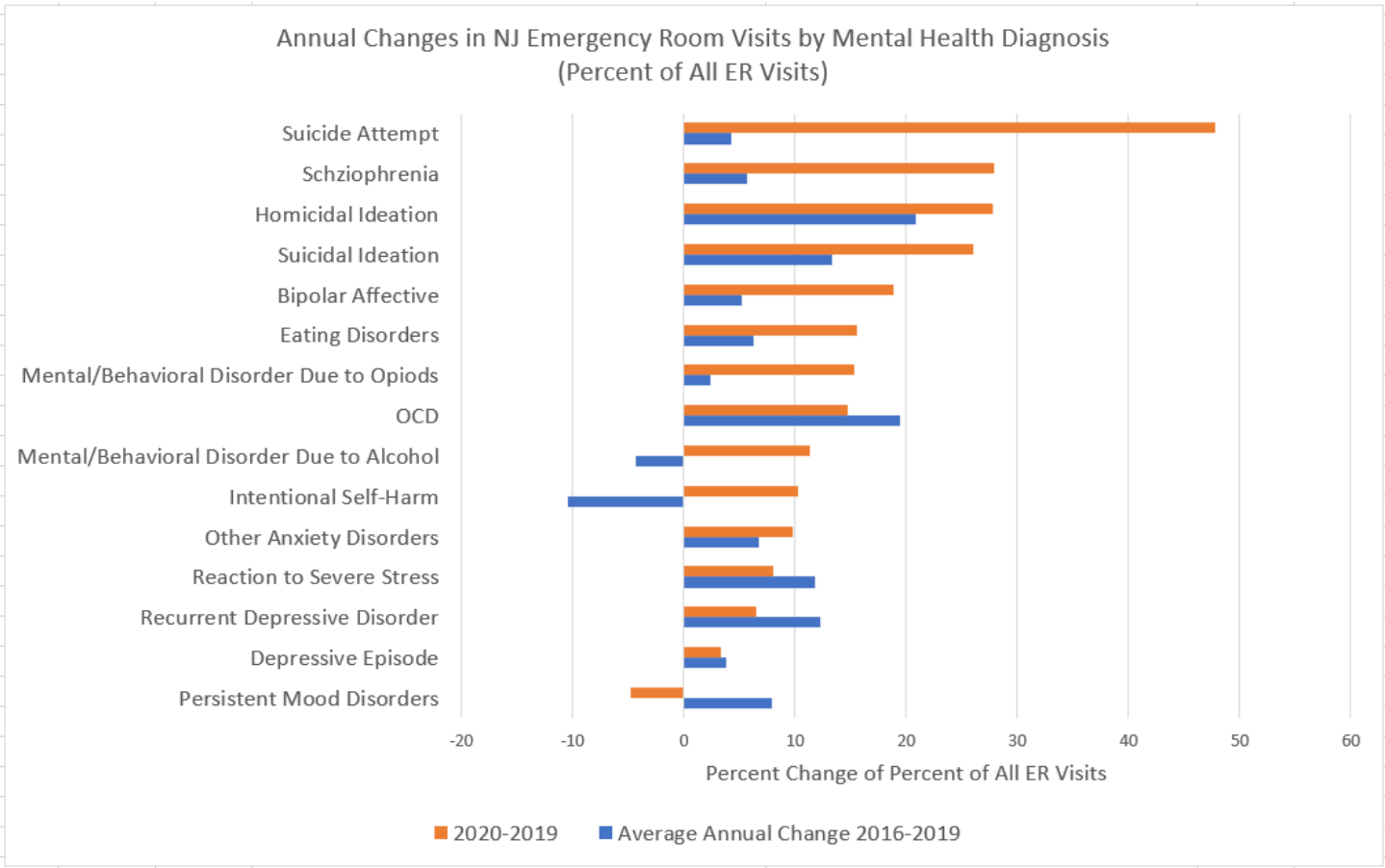
Overall, the total number of ER visits in New Jersey related to the 15 mental health/behavioral disorders that we assessed (other than suicide attempts) decreased in 2020 relative to 2019. However, since there was a 27.3% decrease in the total number of all New Jersey ER visits in 2020, it stands to question whether the decrease in mental health/behavioral disorder-related ER visits observed in 2020 was proportional to the overall decrease in total visits. Therefore, we additionally assessed the number of ER visits related to mental health/behavioral disorders as a percentage of all ER visits (**Figure 61**). Other than ER visits related to Persistent Mood Disorders, the percentage of all ER visits that were related to various mental health/behavioral disorders increased in 2020 relative to 2019. For some of these types of diagnoses, the change in this percentage observed in 2020 (relative to 2019) was greater than the average annual change observed between 2016-2019 (intentional self-harm, suicide attempts, suicidal ideation, mental disorders due to alcohol and opioids, eating disorders, schizophrenia and bipolar disorder). For other types of diagnoses, the increase in this percentage observed in 2020 (relative to 2019) was close to or less than the average annual change observed between 2016-2019 (homicidal ideation, severe reaction to stress, obsessive-compulsive disorder (OCD), other anxiety disorders, recurrent depressive disorder, depressive episodes). Thus, even though there was an overall decrease

[97] **Source**: Madigan, S., Korczak, D.J. Vaillancourt, T., Racine, N., Hopkins, W.G. Pador, P. et al. (2023). Comparison of pediatric emergency department visits for attempted suicide, self-harm, and suicidal ideation before and during the COVID-19 pandemic: a systematic review and meta-analysis. *The Lancet Psychiatry, 10(5),* 342-351.

[98] The ten countries were England, Scotland, Ireland, Austria, Italy, Hungary, Serbia, Turkey, Oman, and the United Arab Emirates

in the total number of ER visits related to these mental health disorders, many mental health disorders represented a larger proportion of the conditions treated in hospital ERs than they had in pre-pandemic years. This indicates that mental health disorder-related visitations to hospital ERs decreased at lower rates than ER visitations related to other medical problems during the pandemic.

Figure 61



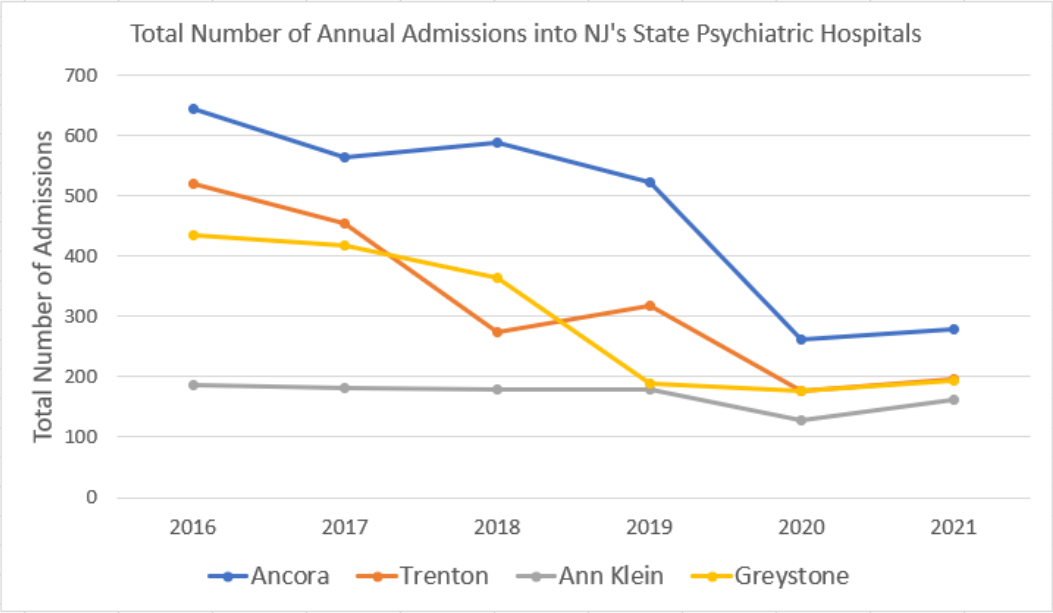
Mental Health Treatment by State Psychiatric Hospitals and the "Deinstitutionalization" Movement

Between the years 2016-2021, there were four state psychiatric hospitals operating in New Jersey: Ancora, Trenton, Ann Klein and Greystone. In this section, we will present observations made based on assessments of admissions data reported by these institutions[99] (**Figure 62**). Admissions to these hospitals, in

[99] **Analysis of data obtained via**: State of New Jersey Department of Human Services – Division of Mental Health and Addiction Services (2022). State Hospital Reports. Accessed online at: https://www.state.nj.us/humanservices/dmhas/publications/hospital/

total, decreased by 31.6% in 2020 relative to 2019. Greater reductions in the number of admissions in 2020 were observed for Ancora (38.6% decrease) and Greystone (36.4% decrease) than for Trenton (20.7% decrease) and Ann Klein (17.6% decrease). Relative to 2020, a 11.6% increase in admissions across all four of these hospitals was observed in 2021, but the number of 2021 admissions in these hospitals was still 31.4% lower than what it was in 2019.

Figure 62



The decrease in New Jersey state psychiatric hospital admissions observed in 2020 and 2021 was a continuation of a trend of declining annual admissions observed between 2016-2019, as the number of total admissions across these four institutions declined every year within this time period with an average annual decrease of 12.2%. However, the 31.6% decrease in admissions observed in 2020 (relative to 2019) was approximately 2.6 times greater than the average annual decrease of 12.2% that was observed between 2016-2019, indicating that the pandemic accelerated the decline in admissions relative to what would have been expected by trends observed in the four years prior to the beginning of the pandemic.

How can the decline of admissions to state psychiatric hospitals in New Jersey be explained? In 2020, declines in admissions may be attributable, at least partially, to physical distancing measures taken to limit the

spread of and reduce deaths caused by COVID-19. However, the general decline of admissions to state psychiatric hospitals has been a long-term trend that has been observed both in the state and, more broadly, in the United States.

State and county psychiatric hospital populations in the United States have been declining for decades. In 1970, the national population of patients in such institutions was 369,969. By 2014, this decreased 89.2% to 39,907. This decline coincided with increases in client populations in other types of mental health treatment facilities, including as private psychiatric hospitals (160% increase during this period; 28,461 patients in 2014), general hospitals with a dedicated psychiatric unit (76.6% increase during this period; 31,453 patients in 2014), residential treatment centers (218% increase in this period; 42,930 patients in 2014) and other inpatient and/or residential facilities (171% increase in this period; 20,439 patients in 2014)[100]. However, the increase in the number of patients served in these specific alternative treatment facilities between 1970-2014 only represents a total of 73,497 more patients treated in 2014 (relative to 1970). In contrast, there were 330,062 fewer patients treated in state and county psychiatric hospitals in 2014 relative to 1970. Thus, the increases in patients treated by these alternative treatment facilities did not make up for the decreases in patients served in county/state psychiatric hospitals (although, it is unclear what other types of mental health treatment facilities were not assessed in this study and how many more patients were treated within them in 2014 relative to 1970).

The long-term national decline in state/county psychiatric hospital admissions has been termed the "deinstitutionalization movement", which began in the 1950s[101]. This movement's aim was to transfer the treatment of many patients from 24-hour inpatient settings to community-based outpatient settings with the assistance of prescription antidepressant and antipsychotic drugs. This movement led to a decrease in federal funding of mental health care for inpatient and residential forms of mental health treatment. In 1986, 41% of

[100] **Source**: Lutterman, T., Shaw, R., Fisher, W. & Manderscheid, R. (2017). Trend in Psychiatric Inpatient Capacity, United States and Each State, 1970 – 2014. *National Association of State Mental health Program Directors.* Article accessed online at: https://www.nasmhpd.org/sites/default/files/TACPaper.2.Psychiatric-Inpatient-Capacity_508C.pdf

[101] **Source**: The PEW Charitable Trusts & MacArthur Foundation (2015). Mental Health and the Role of States. Accessed online at: https://www.pewtrusts.org/-/media/assets/2015/06/mentalhealthandroleofstatesreport.pdf

federal funds allocated for mental health care were dedicated to care at inpatient facilities and 22% of such funds were dedicated to care at residential facilities. By 2009, these percentages dropped to 17% and 15%, respectively. In contrast, in 1986, 8% of federal spending on mental health care was dedicated to supporting the prescription of psychiatric drugs and 24% of such funding was dedicated to supporting outpatient forms of treatment. By 2009, these percentages increased to 28% and 32%, respectively.

According to one review[102], the "deinstitutionalization movement" was initiated partially due to growing public awareness of the poor conditions found in many large psychiatric hospitals in the mid-1900's and the development of prescription drugs that more safely treated mood and psychotic disorders and supported patients' ability to functionally manage their symptoms outside of psychiatric hospitals. This movement led to two federal acts that reduced national spending on inpatient psychiatric care. First, the federal Community Mental Health Act of 1963 committed the federal government to financially supporting the establishment of community-based mental health treatment centers to reduce the number of individuals treated in long-term inpatient settings, deprioritizing the funding of inpatient treatment. Two years later, the federal government created Medicaid in 1965, which is a program that provides health insurance to millions of low-income individuals and families and is the largest single payer for mental health services in the United States[103, 104]. Medicaid served a non-elderly population of almost 14 million Americans in 2020, and it has been estimated that approximately 40% of this population has a mental health or substance abuse disorder[105]. In 2015, Medicaid was used to cover 21% of adults with mental illness and 17% of adults with substance abuse disorder in the United States. In 2014, 25% of all national spending on mental health services and 21% of all national

[102] Ibid
[103] **Source**: Medicaid.Gov – Medicaid. Accessed online at: https://www.medicaid.gov/medicaid/index.html
[104] **Source**: Medicaid.Gov – Behavioral Health Services. Accessed online at: https://www.medicaid.gov/medicaid/benefits/behavioral-health-services/index.html
[105] **Source**: Guth, M., Saunders, H., Corallo, B. & Moreno, S. (2023). Medicaid Coverage of Behavioral Health Services in 2022: Findings from a Survey of State Medicaid Programs. *Kaiser Family Foundation*. Accessed online at: https://www.kff.org/medicaid/issue-brief/medicaid-coverage-of-behavioral-health-services-in-2022-findings-from-a-survey-of-state-medicaid-programs/

spending on substance use disorder services in the nation was covered by Medicaid[106]. Thus, Medicaid is one of the most important sources of funding for mental health care in the nation, especially for those with low-income.

One provision of Medicaid is known as the Institutions for Mental Disease (IMD) exclusion policy (still in practice today in a modified form). This policy prohibits the use of Medicaid funds from being used to pay for long-term care in large inpatient mental health care treatment facilities that have more than 16 beds, providing an incentive for such long-term inpatient treatment facilities to reduce the number of available beds. The National Alliance on Mental Health[107] has argued that the IMD exclusion policy is discriminatory, as it is the only Medicaid policy that excludes payment for a specific form of treated illness. In response to these concerns, the Medicaid program has in recent years offered states the option to apply for a waiver that would allow Medicaid funds to be used to fund short-term stays at inpatient treatment facilities with 16 or more beds. Thus, federal funding support for large inpatient psychiatric treatment facilities has declined over the decades, shifting the burden of funding mental health care for those typically served by such institutions to states and expensive private health insurance. This may have played a major role in the declining patient populations in New Jersey, and more broadly in the United States at large, inpatient psychiatric hospitals.

There is a divide among experts concerning the benefits and costs of the "deinstitutionalization movement"[108]. Experts in favor of this movement have argued that outpatient care is cheaper than long-term inpatient care, more beds are available for the most severely ill patients and some patients are less likely to be kept in care at such long-term inpatient facilities for inappropriately long periods of time. In contrast, experts in favor of increasing support and utilization of long-term inpatient facilities argue that reducing the number of

[106] **Source**: Zur, J., Musumeci, M. & Garfield, R. (2017). Medicaid's Role in Financing Behavioral Health Services for Low-Income Individuals. Kaiser Family Foundation. Accessed online at: https://www.kff.org/medicaid/issue-brief/medicaids-role-in-financing-behavioral-health-services-for-low-income-individuals/

[107] **Source**: National Alliance on Mental Illness (accessed 2023). Medicaid IMD Exclusion. Online article accessed at: https://www.nami.org/Advocacy/Policy-Priorities/Improving-Health/Medicaid-IMD-Exclusion

[108] **Source**: Mundt, A.P., Langerfeldt, S.D., Serri, E.R., Siebenforcher, M. & Priebe, S. (2021). Expert Arguments for Trends of Psychiatric Bed Numbers: A Systematic Review of Qualitative Data. *Frontiers in Psychiatry, 12*, 1-26.

beds in such facilities increases the cost of care, as care for many severely mentally ill individuals is shifted to general hospitals. This shift to general hospitalization, it is argued, contributes to overcrowding in emergency rooms and patients seeking care at these facilities experience longer wait times for treatment. Further, it is argued that severely mentally ill individuals are commonly discharged too quickly from such general hospital settings.

The perspective that this "deinstitutionalization movement" may shift the burdens of care of severely mentally ill individuals from specialized psychiatric hospitals to general hospital emergency rooms is consistent with observations made via the analysis of New Jersey Emergency Room visitation data[109]. For those aged between 25-44 years, the number of ER visits related to schizophrenia[110] increased every year between 2016 and 2020 Relative to the prior year, there was a 6.0% increase in 2017, a further 10.8% increase in 2018, a further 3.5% increase in 2019 and a further 2.8% increase in 2020. Schizophrenia-related ER visits in New Jersey did not increase in 2020 (relative to 2019) for other age groups, but these other age groups were observed to have annual increases in the number of schizophrenia-related ER visits every year between 2016-2019. The observation that 25–44-year-olds were the only group to see a 2020 increase in schizophrenia-related ER visits coincides with the approximate range of ages associated with the initial onset of this psychotic disorder[111]. Thus, although one cannot know for certain what is causing the annual increases in schizophrenia-related visits in emergency rooms, one may speculate that this could be partially related to declining state psychiatric hospital admissions. At the very least, one can confidently assert that emergency rooms are increasingly becoming burdened with the care of such severely mentally ill individuals while state psychiatric hospitals are treating fewer and fewer patients each year.

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[109] **Analysis of data obtained via**: New Jersey State Health Assessment Data (NJSHAD) – New Jersey Emergency Department Visit Data: 2016-2021 - Count. Accessed online at: https://www-doh.state.nj.us/doh-shad/query/builder/ub/UB10AllED/Count.html

[110] The ICD-10 code used to classify schizophrenia diagnoses was F20

[111] **Source**: Sham, P.C., MacLean, C.J. & Kendler, K.S. (1994). A typological model of schizophrenia based on age at onset, sex and familial morbidity. *Acta Psychiatrica Scandinavica, 89*, 135-141.

This may be problematic from the perspective that severely mentally ill individuals do not receive the best care in general hospitals, as many general hospitals are not optimized for and do not have the capacity for the effective treatment of mental illness. "Boarding" is a common occurrence in overcrowded hospital emergency rooms. This is a term used to reference incidents when emergency rooms that are operating beyond capacity have incoming patients wait for hours or days to receive appropriate care. Nationally, mentally ill patients have been estimated to be 2.63 to 8.66 times more likely to be "boarded" than patients for other medical conditions. Further, it is common that mentally ill patients do not receive any care at all during the "boarding" period. This is particularly problematic for those experiencing psychotic disorders, as the long, unsupervised wait time in what are often loud and crowded emergency department wait rooms can exacerbate the symptoms an individual came into the hospital to be treated for[112].

Beyond overburdening general hospital emergency rooms, another consequence of decreased funding and resources allocated for inpatient/residential mental health treatment is overcrowding of such facilities. According to an analysis of data collected and reported by the Substance Abuse and Mental Health Service Administration's (SAMHSA) National Mental Health Services Survey (NMHSS)[113], the number of beds available for mental health treatment in hospital inpatient or residential mental health treatment facilities consistently decreased in the United States between the years 2010 and 2021 in the United States while simultaneously seeing annual increases in the number of clients treated during this same period (with the only exception to this being the observed decrease in the number of clients treated in 2020 relative to 2019) (**Figure 63a**). The simultaneous decrease in available beds and increase in clients treated has resulted in overcrowding, as evident by assessing bed-utilization rates. The bed-utilization rate is a variable that computes the number of clients treated as a percentage of the number of available beds. According to one estimate, the optimum bed

[112] **Source**: Nordstrom, K., Berlin, J.S., Nash, S.S., Shah, S.B., Schmelzer, N.A. & Worley, L.L.M. (2019). Boarding of Mentally Ill Patients in Emergency Departments: American Psychiatric Association Resource Document. *Western Journal of Emergency Medicine, 20*, 690-695.

[113] **Analysis of data obtained via**: Substance Abuse and Mental Health Services Administration (2022). National Mental Health and Services Survey. Accessed online at: https://www.samhsa.gov/data/data-we-collect/n-mhss-national-mental-health-services-survey

utilization rate in psychiatric treatment facilities should be 85% or lower in order to "protect both patients and staff from untoward incidents arising from busyness"[114]. As can be seen in **Figure 63b**, the United States bed-utilization rates in hospital inpatient and non-hospital residential mental health treatment facilities have consistently increased between the years 2010 and 2021, with the one exception being decreases observed in 2020 (relative to 2018). In each year between 2018-2021, the bed utilization rate exceeded 85%. In 2018 and 2021, the bed utilization rates exceeded 100%, indicating that more clients were treated than there were available beds designated for mental health care[115]. This overcrowding was particularly problematic in 2021, with the total bed utilization rate at these inpatient/residential treatment facilities being 147.8%. **Table 3** displays bed utilization rates for different types of facilities in the United States. As one can see, the specific types of treatment facilities where bed utilization rates exceeded 100% in 2021 were public psychiatric hospitals[116] (bed utilization rate was 158.4% for hospital inpatient facilities and 128.2% for non-hospital residential facilities) and state hospitals (bed utilization rate was 203.3% for hospital inpatient facilities and 276.0% for non-hospital residential facilities).

[114] **Source**: Jones, R.P. (2013). Optimum bed occupancy in psychiatric hospitals. *Psychiatry-Line*, 1-5.

[115] According to SAMHSA, facilities whose number of clients served exceed the number of available beds assign clients to other beds in the facility that have not been designated for mental health care. Speculatively, this results in the consequence of there being less beds available overall in the facility to treat non-mental health conditions.

[116] According to SAMHSA, **psychiatric hospitals** are facilities licensed and operated as either state/public psychiatric hospitals or state-licensed private psychiatric hospitals that primarily provide 24-hour inpatient care to persons with mental illness. They may also provide 24-hour residential care and/or less than-24-hour care (i.e., outpatient, partial hospitalization/day treatment), but these additional service settings are not requirements

Figure 63a

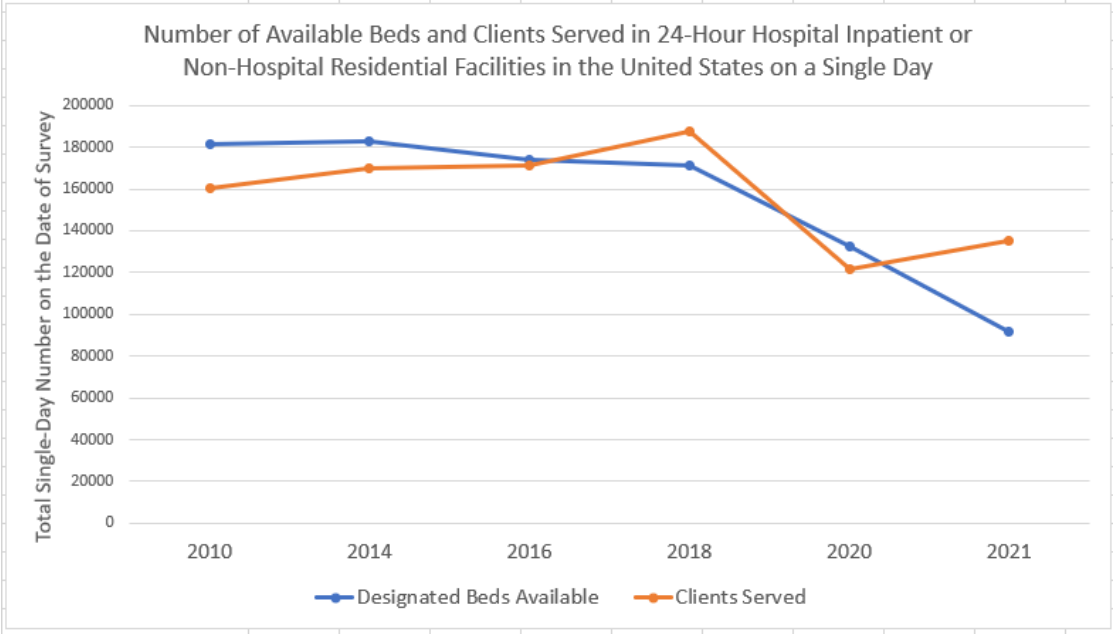

Number of Available Beds and Clients Served in 24-Hour Hospital Inpatient or Non-Hospital Residential Facilities in the United States on a Single Day
Total Single-Day Number on the Date of Survey
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
2010
2014
2016
2018
2020
2021
Designated Beds Available
Clients Served

Figure 63b

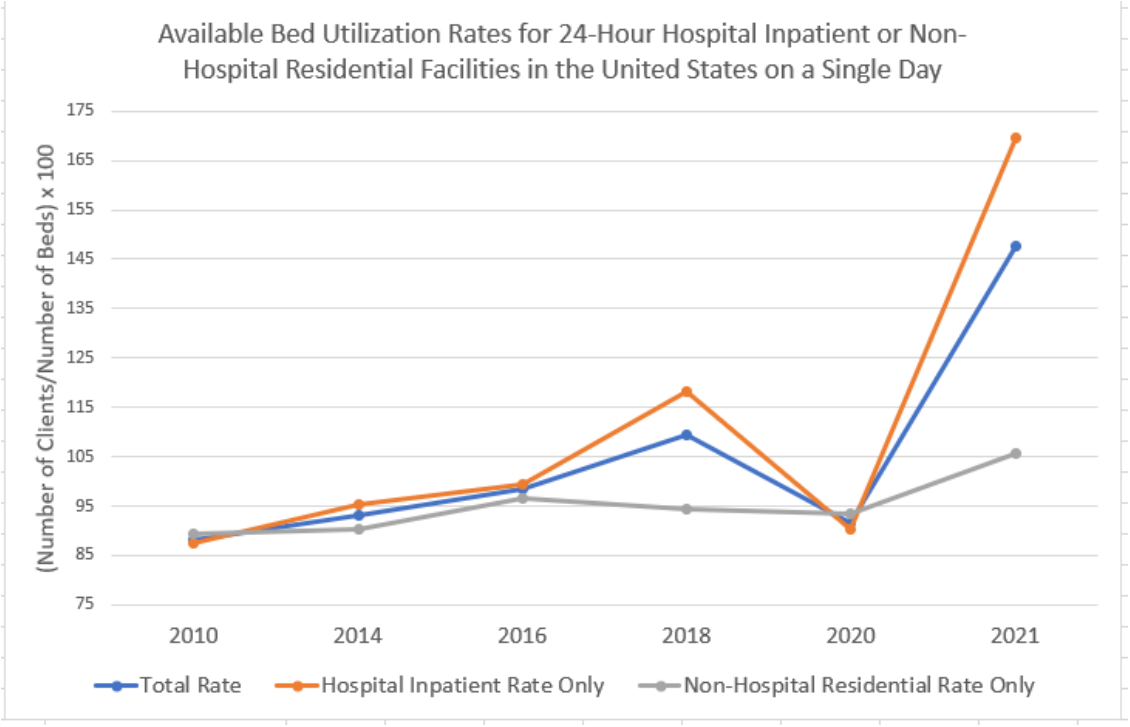


Table 3

	2021 Utilization Rate Percentage (Clients/Beds) by Setting *United States*	
	Hospital Inpatient Utilization Rate	**Non-Hospital Residential Utilization Rate**
Total	55.2%	29.7%
Psychiatric Hospital (Public)	158.4%	128.2%
Psychiatric Hospital (Private)	69.9%	50.6%
General Hospitals	29.2%	18.3%
State Hospitals	203.3%	276.0%
RTCs for Children	50.7%	34.4%
RTCs for Adults	31.2%	17.7%
Other Types of RTCs	10.5%	41.2%
Veterans Affairs Medical Centers	20.8%	45.0%
Community Mental Health Centers	22.2%	23.7%
Day Treatment Facilities	69.2%	29.8%
Outpatient Mental Health Facilities	29.2%	33.1%
Multi-Setting Mental Health Facilities	35.5%	30.7%
Others	60.6%	33.1%

In New Jersey, overcrowding at inpatient/residential mental health treatment facilities is not as problematic as in the broader United States. **Figure 64a** shows that, like the United States, the number of available beds designated for mental health care has consistently decreased between 2010 and 2021. However, the number of clients treated has remained stable or decreased during this time period, in contrast to the increasing number of clients treated that were observed in the broader United States. In relation to bed utilization rates, the total bed utilization rate for inpatient/residential treatment facilities increased consistently between 2010 and 2018, decreased in 2020, and increased again in 2021 to reach a slightly lower rate than what was observed in 2018 (**Figure 64b**). For every year assessed other than 2020, the bed utilization rate was at or exceeded the recommended maximum rate of 85%, with the total rate exceeding 100% in 2018 and the non-hospital residential-specific rate exceeding 100% in 2021 (rate = 114%).

Figure 64a

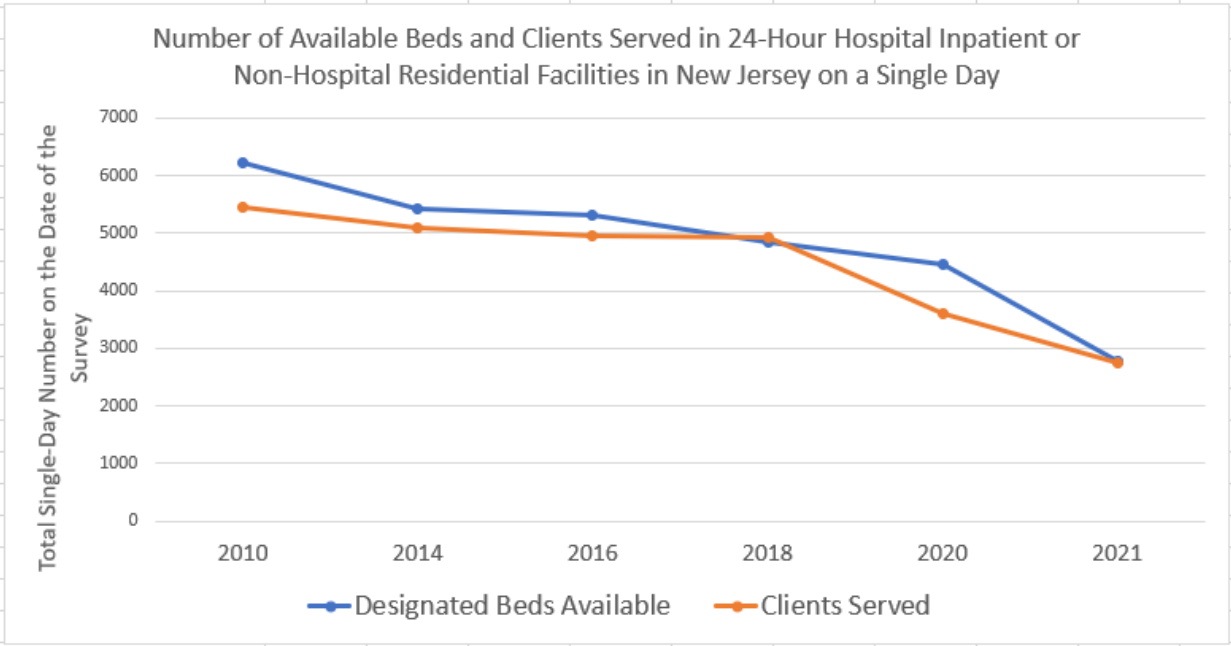
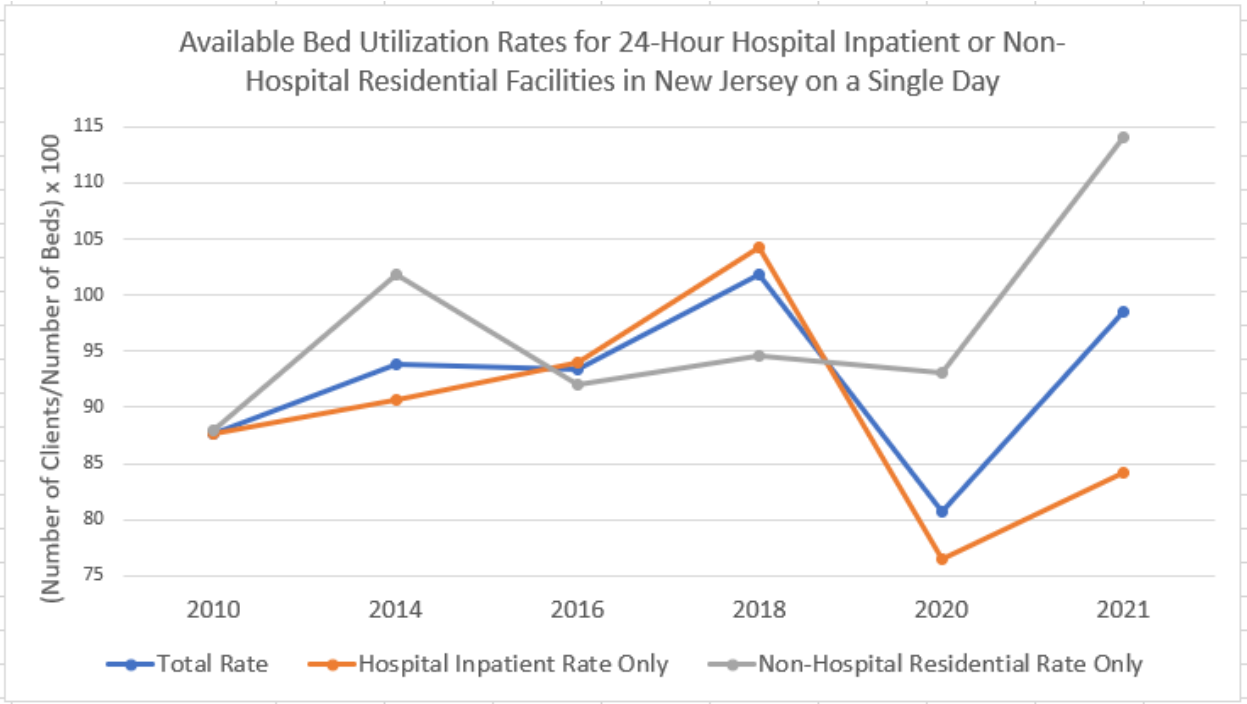


Figure 64b



Substance Abuse Treatment

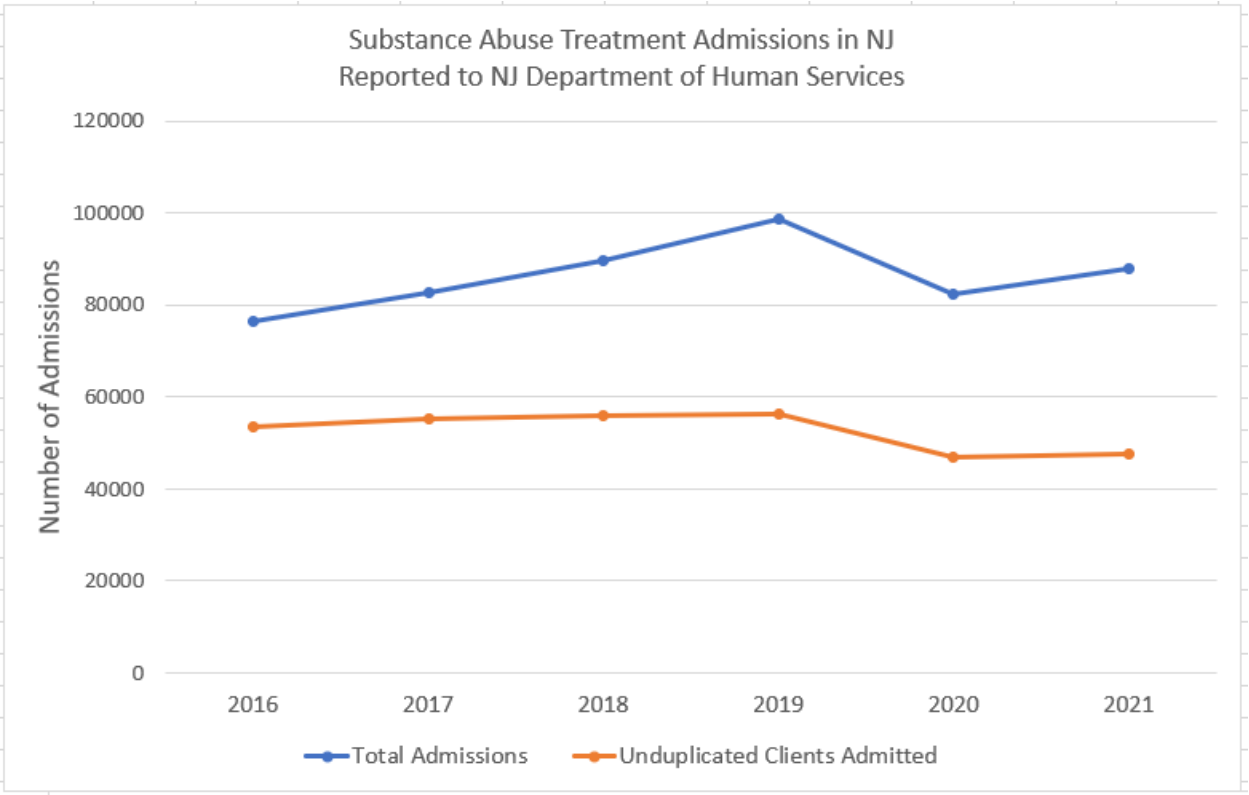
In this section, we present findings concerning treatment for substance abuse problems that are based on analyses of admissions data reported to New Jersey's Department of Human Services Division of Mental Health and Addiction Services by substance abuse treatment providers via the New Jersey Substance Abuse Monitoring System (NJSAMS)[117].

As is displayed in **Figure 65**, the number of total admissions into substance abuse treatment programs decreased by 16.7% in 2020 (relative to 2019) despite consistent annual increases in the number of such admissions being observed each year between 2016-2019 (a similar pattern was observed when analyzing

[117] **Analysis of data obtained via**: New Jersey Department of Human Services, Division of Mental Health and Addiction Services (2022). Substance Abuse Overview Statewide Reports. Accessed online at: https://www.state.nj.us/humanservices/dmhas/publications/statistical/

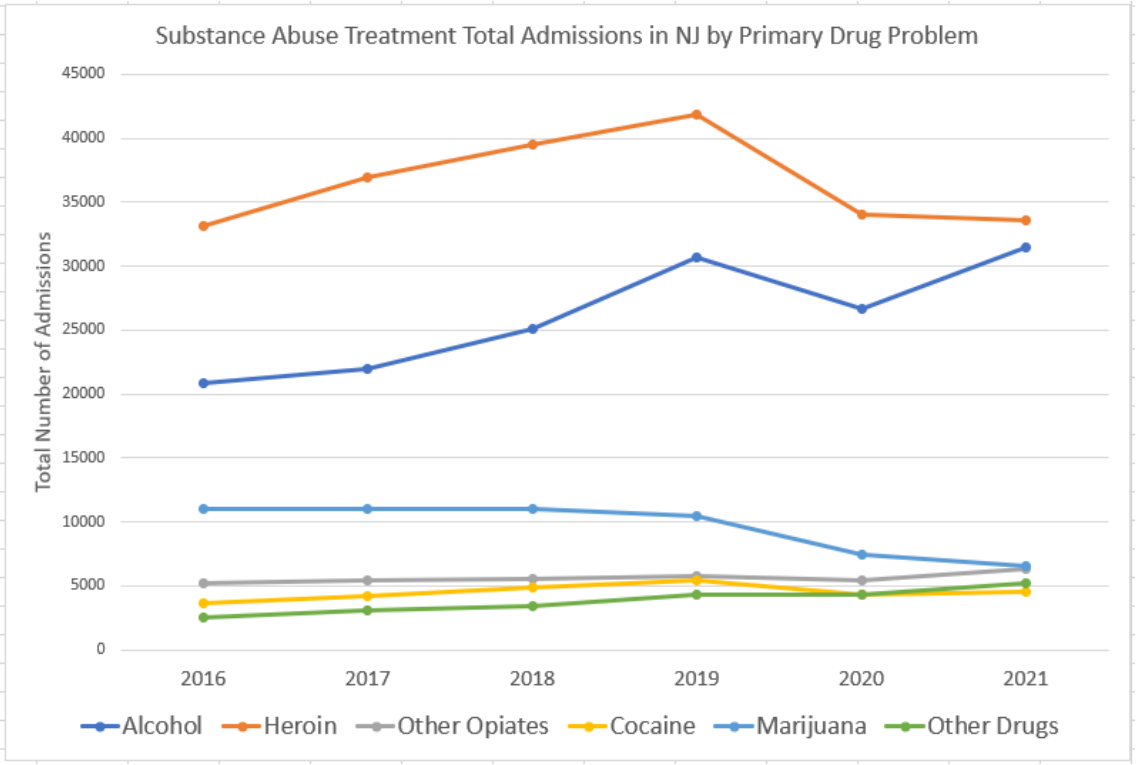
admissions according to unduplicated client counts). Relative to 2020, the number of admissions increased in 2021 by 6.7%, but the number of admissions in 2021 were still lower than they had been in 2019.

Figure 65



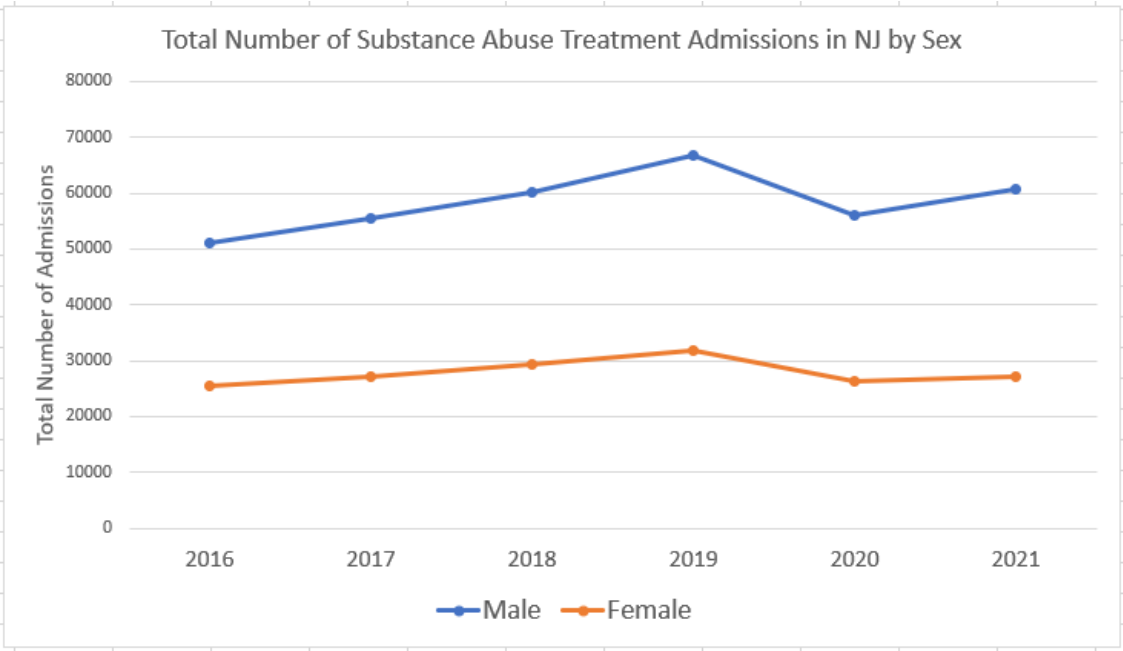
Between the years 2016-2021, the most common types of drugs clients entered treatment for were heroin, alcohol, and marijuana (**Figure 66**). Admissions totals for alcohol- and heroin-use treatment decreased in 2020 (relative to 2019) by 13.0% and 18.7%, respectively, despite consistent annual increases between the years 2016-2019. In 2021 (relative to 2020), admissions for alcohol-use treatment increased by 18.0% (but were still lower than the number of admissions in 2019) but decreased by 1.2% for heroin-use treatment. With respect to treatment for marijuana use, admissions totals decreased in 2020 (relative to 2019) by 29.5% and by a further 11.3% in 2021 (relative to 2020) despite a relatively stable number of admissions for the use of this drug between the years 2016-2019.

Figure 66



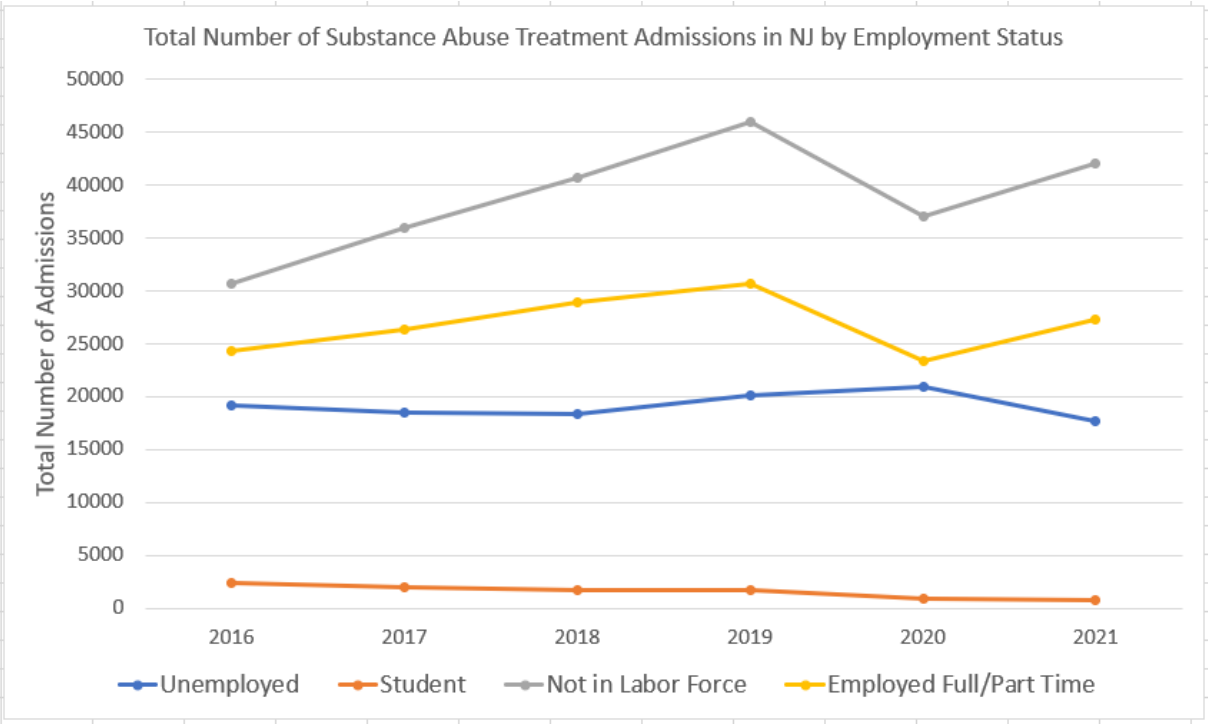
Consistently between 2016-2021, more males sought substance abuse treatment than females, and both sexes were observed to have similar reductions in the number of 2020 admissions (relative to 2019; male admissions decreased by 16.1% and female admissions decreased by 17.6%) (**Figure 67**).

Figure 67



Substance abuse treatment admissions varied by employment status (**Figure 68**). Between 2016-2021, individuals reporting that they "are not in the labor force" were most commonly admitted into substance treatment programs, followed, in order, by those who were employed full/part time and by those who reported being "unemployed". Interestingly, those reporting being unemployed were the only employment group who were observed to have a 2020 (relative to 2019) increase in the number of substance abuse treatment admissions (3.7% increase), whereas the number of admissions decreased in 2020 for those "not in the labor force" by 19.4%, for those employed full/part-time by 24.0%, and for students by 45.3%.

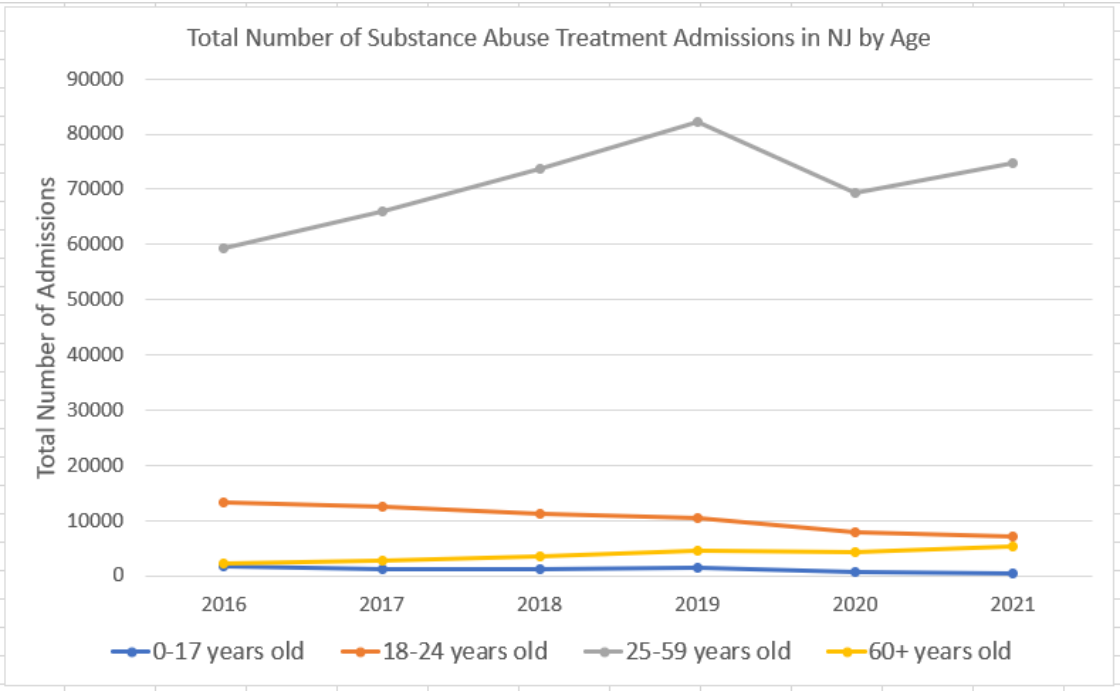
Figure 68



With respect to age differences, the most common age range of individuals admitted into substance abuse treatment was 25-59 years (**Figure 69**). However, due to the unbalanced size of the age ranges represented by the four age groups depicted in **Figure 69**, it is not fair to directly compare the number of admissions between these age groups, as each group represents different sized populations in New Jersey. However, one observation worth highlighting is that the number of admissions in 2020 (relative to 2019)

decreased for every age group by varying amounts, with larger decreases observed for the two younger age groups (47.9% decrease for 0-17-year-olds and 24.4% decrease for 18-24-year-olds) than the two older age groups (15.6% decrease for the 25-59-year-olds and 6.4% decrease for the 60+-year-olds). The 2020 decrease in admissions totals stood out particularly for the 25-59-year-olds and 60+-year-olds, as these two age groups were associated with consistent annual increases in the number of admissions between the years 2016-2019 (average annual increases between 2016-2019 being 11.6% for 25-59-year-olds and 24.3% for 60+-year-olds). In contrast, total admissions for 18-24-year-olds consistently decreased between 2016-2019 at an average annual rate of 7.8% before decreasing 24.4% in 2020. A similar pattern was observed for 0-17-year-olds (an average 2016-2019 annual decrease in admissions of 4.9% before the 47.9% decrease in 2020).

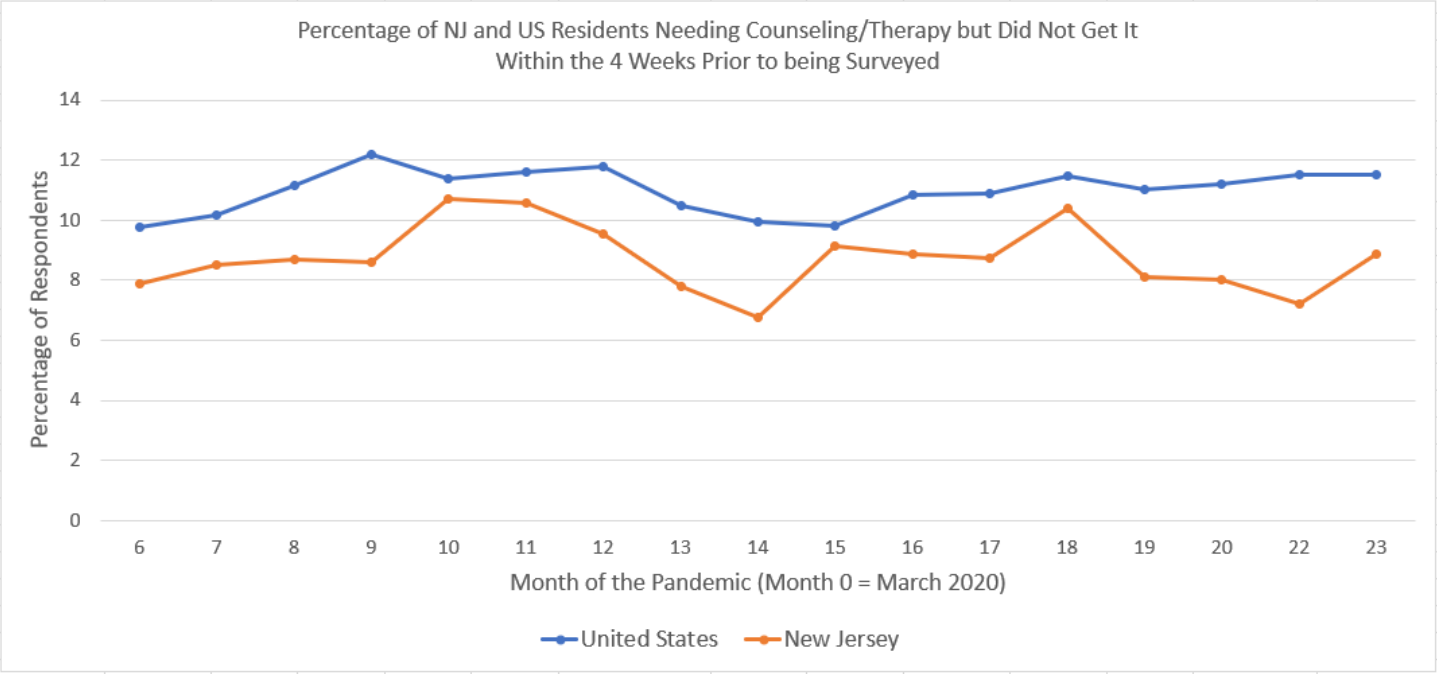
Figure 69



In sum, in the context of increased drug-related deaths in New Jersey in 2020 and 2021 (see **Figure 29**), the number of individuals who were treated for substance abuse problems decreased during the pandemic relative to 2019 for most groups analyzed in this section.

According to the CDC Household Pulse Survey[118], the percentage of New Jersey residents who wanted or needed counseling or therapy but did not receive it within the four weeks prior to being surveyed ranged from 6.8%-10.7% over the course of the 6th to 23rd month of the pandemic (or between September 2020 and April 2022) (**Figure 70**). If these values are representative across the state, that equates to a total of 492,456 – 774,894 individuals in New Jersey needing therapy but not receiving it during this period[119]. These percentages were consistently below the average national percentages, which ranged from 9.8%-12.2% between the 6th and 23rd month of the pandemic.

Figure 70



Nationally, the average percentage of individuals not obtaining needed counseling or therapy varied by age, race, and sex (New Jersey values for specific demographic groups are not publicly available). As depicted

[118] **Analysis of data obtained via**: Centers of Disease Control and Prevention - Household Pulse Survey. Accessed online at: https://www.cdc.gov/nchs/covid19/pulse/mental-health-care.htm

[119] These estimates are based on calculating 6.7% and 10.7% of the 7.242 million population of New Jersey residents aged 18 or older, as indicated by the 2020 U.S. Census. This population statistic was obtained online at: https://www.census.gov/quickfacts/NewJersey

in **Table 4**, the average percentage of individuals needing counseling/therapy but not receiving between the 6th and 23rd month of the pandemic progressively increased the younger the age of the respondents, with an average of 19.8% of 18-29-year-olds reporting this compared to only 3.4% of those aged 80 or older.

Table 4

Overall Mean (SD) Percent of US Residents Needing Counseling/Therapy but Not Receiving It	
Age Group	**Mean (SD) Percentage Between 6th-23rd Month of the Pandemic**
18-29 Years	19.8% (1.6)
30 - 39 Years	15.5% (1.2)
40 - 49 Years	11.8% (1.0)
50 - 59 Years	9.1% (0.9)
60 - 69 Years	5.8% (0.5)
70 - 79 Years	3.3% (0.4)
80 Years or Older	3.4% (1.4)

With respect to race (**Table 5**), individuals reporting being "Other/Multi-Race" had the greatest percentage of respondents indicating that they did not receive needed counseling or therapy (16.4%), while Asians had the lowest percentage of such individuals (6.7%) between the 6th and 23rd month of the pandemic. Similar percentages were observed between White, Black and Hispanic/Latino respondents (average percentages ranging among these three groups between 10.6%-11.9%).

Table 5

Overall Mean (SD) Percent of US Residents Needing Counseling/Therapy but Not Receiving It	
Race Group	**Mean (SD) Percentage Between 6th-23rd Month of the Pandemic**
Hispanic or Latino	11.9% (1.4)
White	10.6% (0.8)
Black	11.5% (1.2)
Asian	6.7% (1.4)
Other/Multi-Race	16.4% (1.4)

With respect to sex (**Table 6**), a higher average percentage of females reported not obtaining needed counseling or therapy between the 6th and 23rd months of the pandemic (13.3% average) compared to males (8.2%).

Table 6

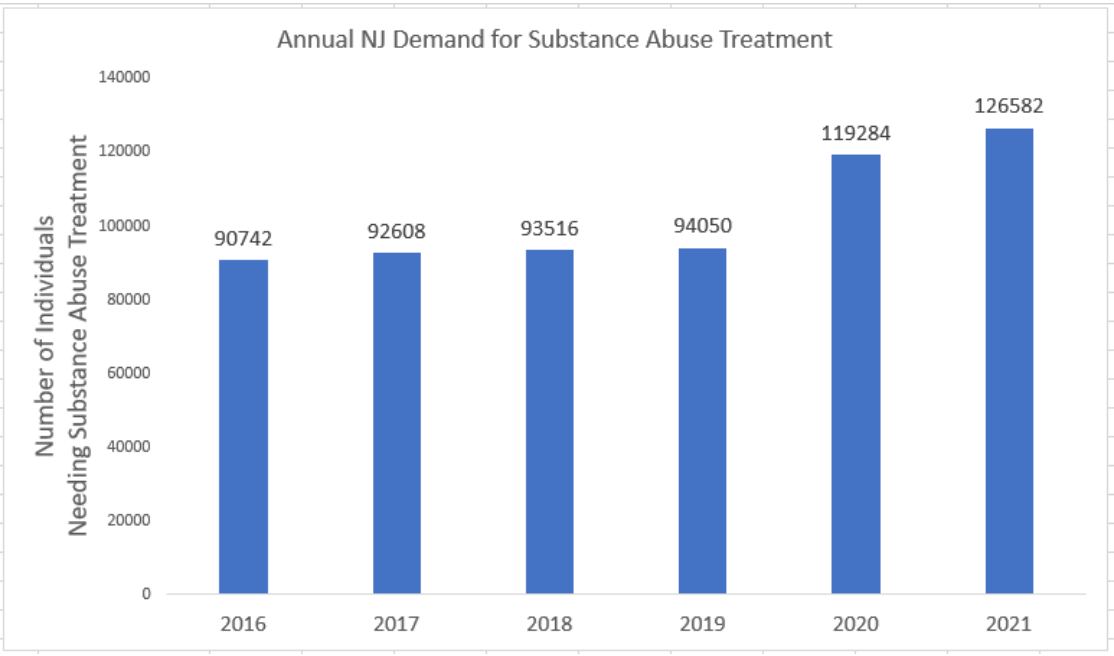
Overall Mean (SD) Percent of US Residents Needing Counseling/Therapy but Not Receiving It	
Sex Group	**Mean (SD) Percentage Between 6th-23rd Month of the Pandemic**
Male	8.2% (0.9)
Female	13.3% (0.9)

In sum, there seems to have been a substantial percentage of New Jersey and United States residents who needed counseling or therapy but did not receive it (at least within the month prior to being surveyed) during the pandemic. However, it is currently unclear what the reasons were that prevented these individuals from getting the treatment they felt they needed. Possibilities include not seeking treatment because of prohibitive costs due to a lack of any or adequate health insurance, avoiding seeking in-person treatment due to a fear of contracting and/or spreading the COVID-19 virus, not having adequate internet/mobile services that would enable telehealth-based mental health treatment (or not having adequate knowledge on how to use such technology in order to obtain such services), shortages of mental health practitioners in an individual's local community, waitlists for treatment being too long, perceived stigmas associated with seeking mental health care and/or a general lack of motivation to go through the process of obtaining mental health care.

With regards to substance abuse treatment, estimates of unmet demand have been provided by the New Jersey Department of Human Services Division of Mental Health and Addiction Services[120]. As depicted in **Figure 71**, total demand for substance abuse treatment consistently increased each year between 2016-2019 at an average annual rate of 1.2%. In 2020 (relative to 2019), the degree of demand increased by 26.8%, and then by a further 6.1% in 2021 (relative to 2020).

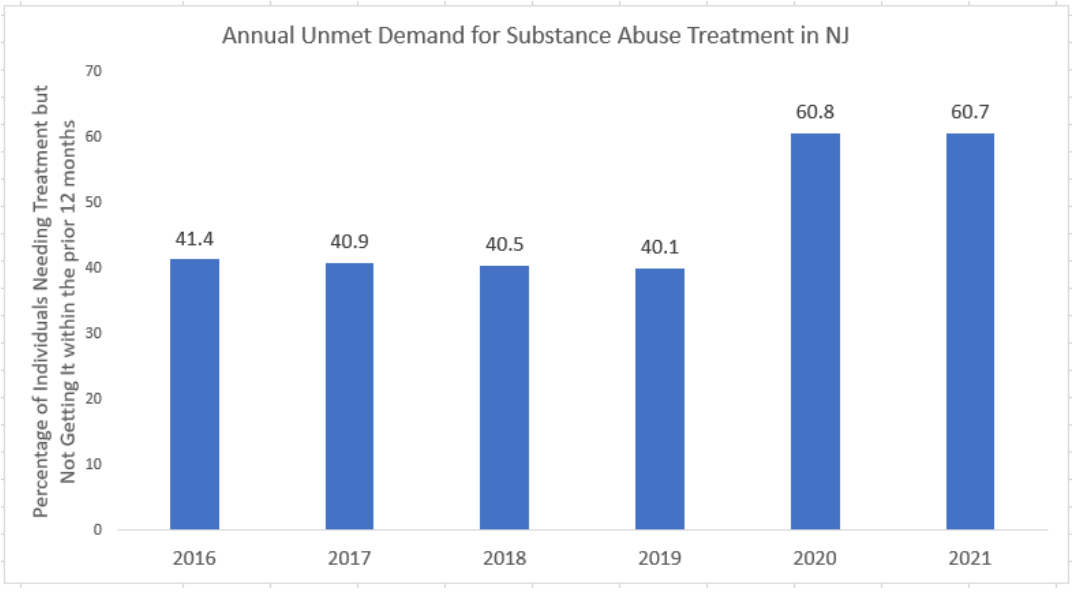
[120] **Analysis of data obtained via**: New Jersey Department of Human Services, Division of Mental Health and Addiction Services (2022). Substance Abuse Overview Statewide Reports. Accessed online at: https://www.state.nj.us/humanservices/dmhas/publications/statistical/

Figure 71



As displayed in **Figure 72**, of the total demand for substance abuse treatment indicated in **Figure 71**, the estimated percentage of that demand that was not met ranged from 40.1% - 41.4% between the years 2016-2019. In 2020 and 2021, this percentage increased to 61%. This equates to an unmet demand for substance abuse treatment for an estimated 72,524 individuals in 2020 and 76,835 individuals in 2021.

Figure 72



The degree of unmet demand for substance abuse treatment in 2021 and the degree to which it increased in 2020 (relative to 2019) varied by New Jersey county. **Figure 73** represents the degree to which the percentage of unmet demand for substance abuse treatment changed from 2019 to 2020. Seventeen of the state's 21 counties saw an increase in the percentage of unmet demand during this time period, with increases in these counties ranging from 12.7% to 149.6% (the average 2019-2020 increase in these counties was 86.2% +/- 35.6%). The top five counties that saw the largest of such increases were Cumberland (149.6% increase), Mercer (121.9%), Salem (120.3%), Atlantic (110.0%) and Monmouth counties (108.4%). The four counties that saw a decrease in the unmet demand percentage from 2019 to 2020 were Middlesex (63.5% decrease), Morris (58.6% decrease), Hunterdon (57.6% decrease) and Union (18.7% decrease), all four of which are located in the northern half of the state. In fact, the average degree that the unmet demand percentage changed from 2019 to 2020 was much larger in the southern half of the state's eight counties[121] (average change was an 86.2% increase) than in the northern half of the state's 13 counties (average change was a 35.6% increase).

[121] Southern New Jersey defined as Burlington, Ocean, Camden, Gloucester, Salem, Atlantic, Cumberland and Cape May counties

Figure 73

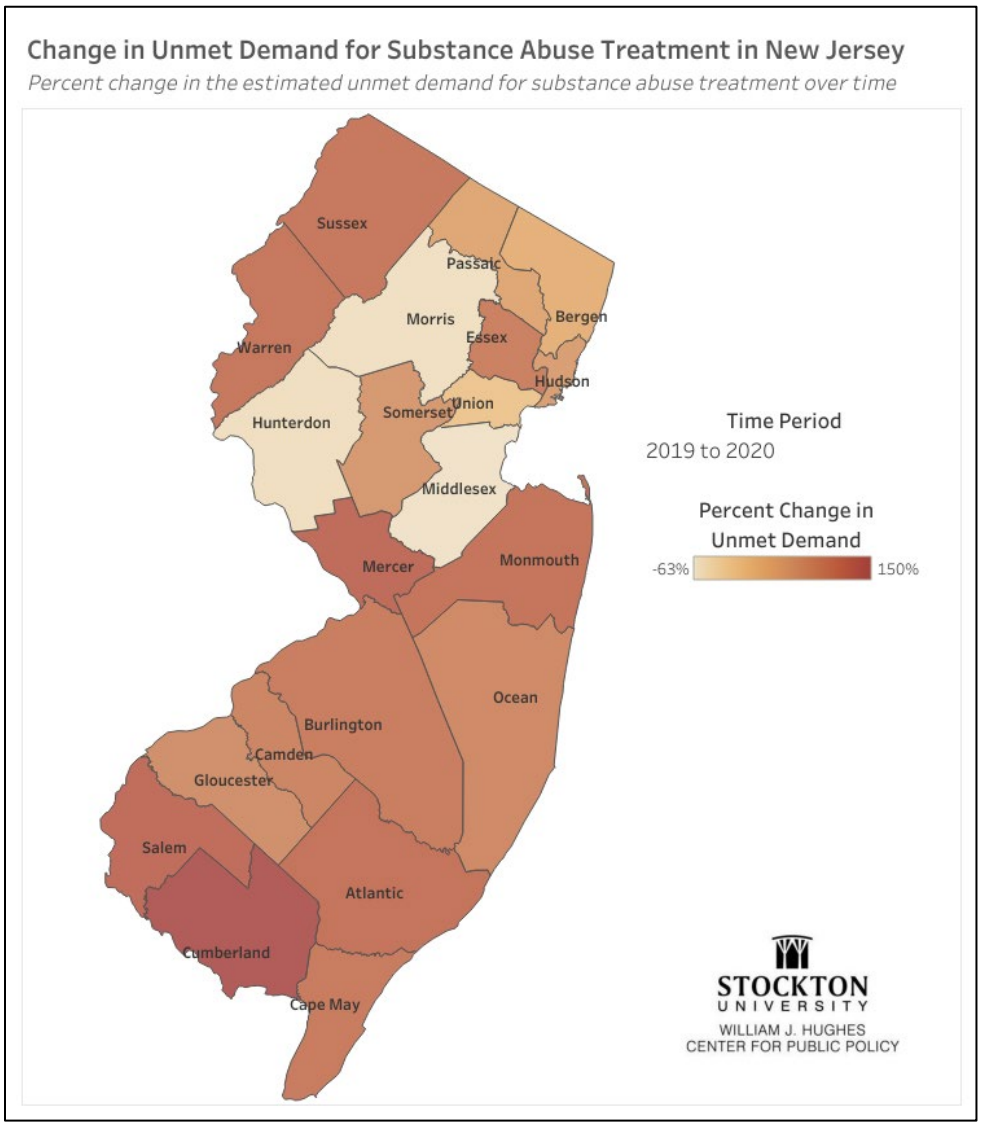
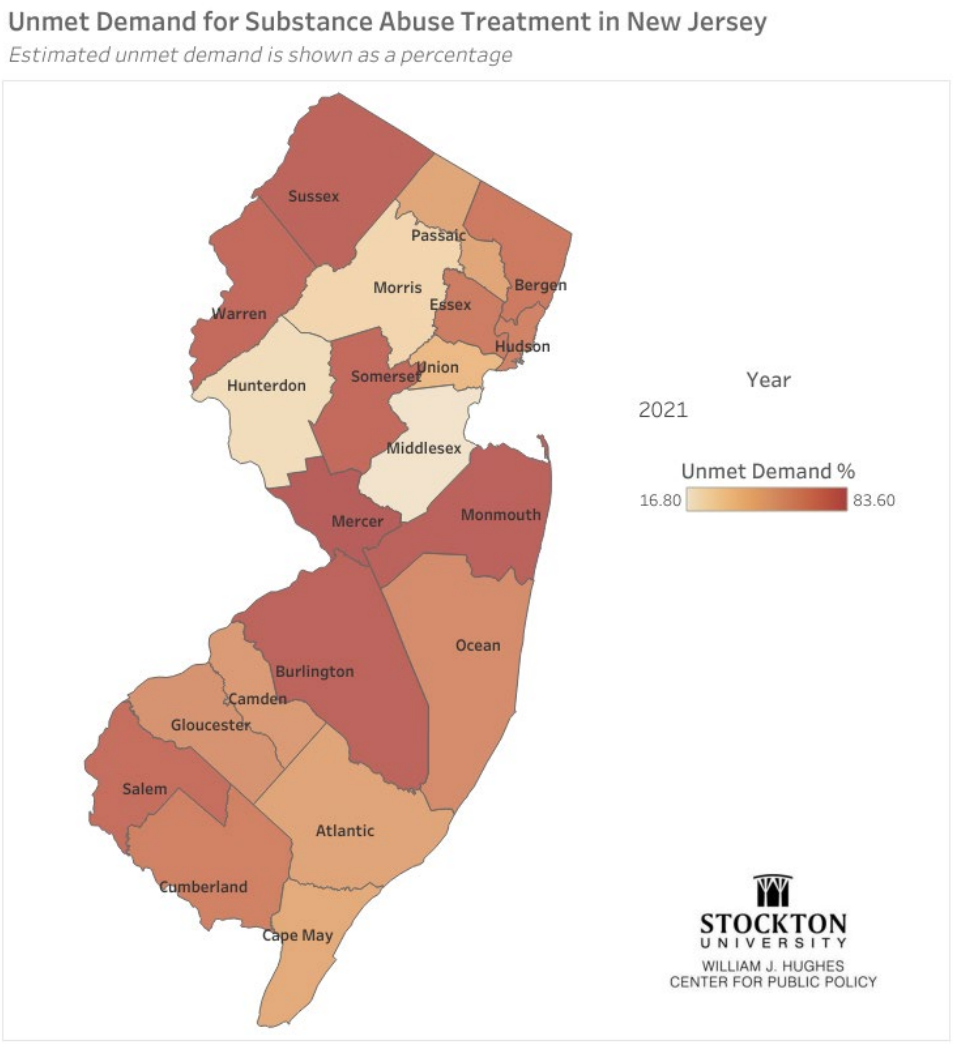


Figure 74 displays the estimated percentage of unmet demand for substance abuse for 2021. The percentage of unmet demand varied from 16.8% (Middlesex county) to 83.6% (Mercer county) with an average of 58.7% +/- 20.8%. The top five counties with the largest percentage of unmet demand were Mercer (83.6%), Monmouth (81.5%), Burlington (80.3%), Sussex (80.2%) and Warren/Somerset (tied at 76.6-76.7%) counties. The five counties with the smallest percentage of unmet demand were Middlesex (16.8%), Hunterdon (20.3%), Morris (23.1%), Union (37.6%) and Cape May (45.5%) counties. The average percentage of unmet demand did not substantially differ between the eight counties of Southern New Jersey (average = 60.8% +/- 12.2%) and the

13 counties of Northern New Jersey (average = 57.4% +/- 25.0%), even if the unmet demand percentages for the Northern New Jersey counties was more variable than those for the Southern New Jersey counties.

Figure 74



In sum thus far, we have observed a substantial degree of unmet need for mental health and substance abuse treatment. One of the reasons for this unmet need may be partially related to shortages in mental health and substance abuse treatment professionals working in the state. In 2022, New Jersey had 275.9 mental health care professionals[122] per 100,000 individuals in the population, which ranked 29th among the states (the national

[122] Defined as the number of psychiatrists, psychologists, licensed clinical social workers, counselors, marriage and family therapists and advanced practice nurses specializing in mental health care

rate was 305 per 100,000 in the population)[123]. Further, according to a survey of 20 mental health and substance abuse treatment facilities in New Jersey[124], there was an observed 31.4% total job vacancy rate for positions recruiting mental health care professionals with various types of degrees (Table 7). This included job vacancy rates of 24.5% for Psychiatrists, 43.3% for Licensed Professional Counselors (LPCs), 20.3% for Licensed Associate Counselors (LAC), 24.1% for Licensed Clinical Alcohol and Drug Counselors (LCADCs), 55% for Certified Alcohol and Drug Counselors, and 45.9% for Licensed Clinical Social Workers (LCSWs).

Table 7[125]

NJAMHAA

Vacancy Survey Results

From 20 provider agencies (Nov. 2022)				
	# Vacant	Total # Positions		
Psychiatrist	13	53		24.5%
APN	24	52		46.2%
RN	28	72		38.9%
LPN	8	14		57.1%
LCADC	20	83		24.1%
CADC	11	20		55.0%
LCSW	140	305		45.9%
LSW	42	195		21.5%
MSW	35	231		15.2%
LPC	26	60		43.3%
LAC	16	79		20.3%
Other BA	321	1012		31.7%
	684	2176		31.4%

[123] **Source**: America's Health Rankings.Org (2023). America's Health Rankings analysis of U.S. HHS, Centers for Medicare & Medicaid Services, National Plan and Provider Enumeration System, United Health Foundation. Accessed online at: https://www.americashealthrankings.org/explore/measures/MHP

[124] **Source**: New Jersey Association of Mental Health and Addiction Agencies, Inc. (2022). Vacancy Survey Results. Online site accessed from: https://www.njamha.org/links/VacancySurveyResultsNov2022.pdf

[125] **Table Legend**: APN = Advanced Practice Nurse; RN = Registered Nurse; LPN = Licensed Practical Nurse; LCADC = Licensed Clinical Alcohol and Drug Counselor; CADC = Certified Alcohol and Drug Counselor; LCSW = Licensed Clinical Social Worker; LSW = Licensed Social Worker; MSW = Master of Social Work; LPC = Licensed Professional Counselor; LAC = Licensed Associate Counselor

There are also shortages of school counselors in both the state and, more broadly, in the United States[126]. As displayed in **Figure 75**, the number of school counselors in New Jersey increased 8.1% between 2014 and 2021. The two years observed to have the largest annual increases in the number of counselors were 2019 (2.8% increase) and 2020 (3.6% increase). The overall 8.1% increase in the number of school counselors compares to an only 0.3% increase in the number of students in the state within this time period, indicating that the state has decreased the number of students per school counselor within this time period. However, this increase in the number of counselors may not have been enough. The American School Counselor Association (ASCA) recommends a ratio of, at most, 250 students per school counselor. While New Jersey's counselor-to-student ratio has consistently been lower than the national ratio between 2014-2021, and New Jersey's counselor-to-student ratio has decreased each year between 2018-2021, New Jersey's ratio is still higher than the ASCA recommended ratio, with the best ratio in this time period being observed in 2021 at a value of 337:1 counselors per student, which was the 16th lowest ratio in the nation in 2021 among states[127]. Further, in 2019, there were 731 students per school psychologist (the National Association of School Psychologists (NASP) recommends a maximum ratio of 500:1) and 655 students per school social worker (the National Association of Social Workers (NASW) recommends a maximum ratio of 250:1)[128].

These total statewide figures mask variability in the degree of mental health treatment professional shortages in schools, as one report indicated that, based on 2021-2022 figures, 21% of the state's 2,314 schools (or, 486 schools) did not have a school counselor on site[129]. Thus, despite consistent increases in the number of mental health professionals operating in New Jersey schools over the last decade, the state is still falling short of

[126] **Analysis of data obtained via**: American School Counselor Association & U.S. Department of Education's National Center for Education Statistics (2023). School Counseling Ratios. Accessed online at: https://www.njsca.org/ratios
[127] **Source**: Liebhaber, L. (2022). Most States Have A School Counselor Shortage. Here's Where They're Needed The Most. *Charlie Health*. Accessed online at: https://www.charliehealth.com/research/most-states-have-a-school-counselor-shortage
[128] **Source**: Hopeful Futures Campaign (2023). New Jersey. Accessed online at: https://hopefulfutures.us/action-new-jersey/
[129] **Source**: Kelley, T. (2023). N.J. legislators hear possible solutions to school mental health crisis. New Jersey.com. Accessed online at: https://www.nj.com/education/2023/03/nj-legislators-hear-possible-solutions-to-school-mental-health-crisis.html

the recommended number of school counselors, psychologists and social workers as recommended by national professional organizations.

Figure 75

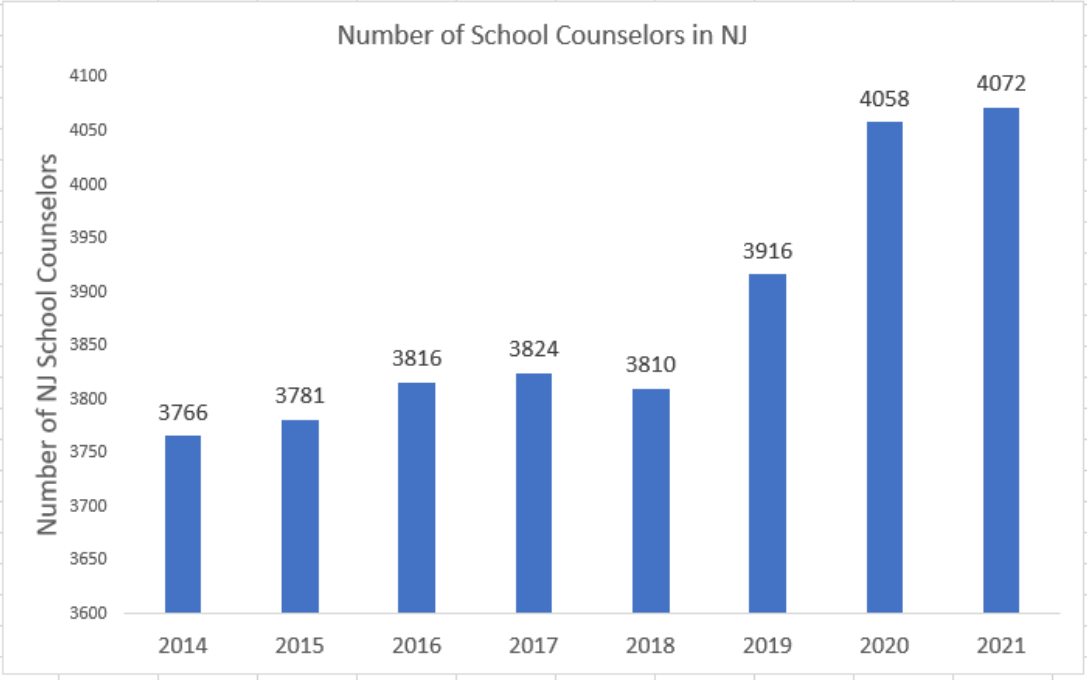
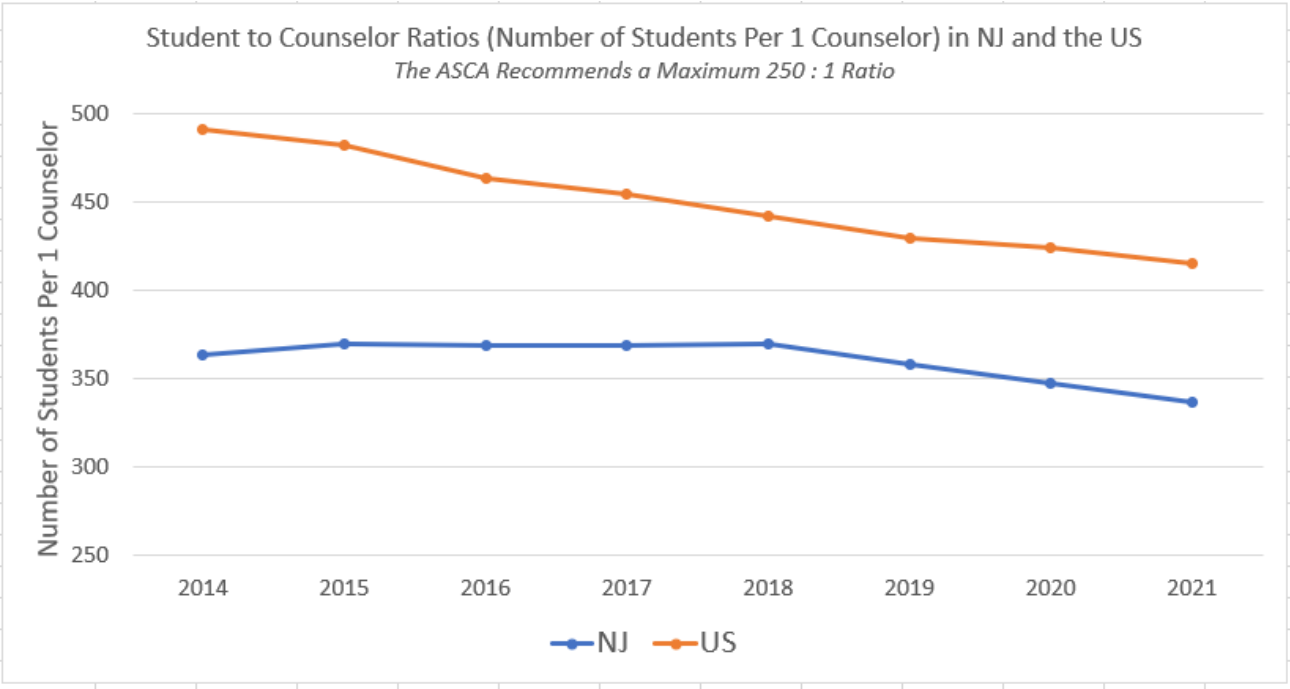


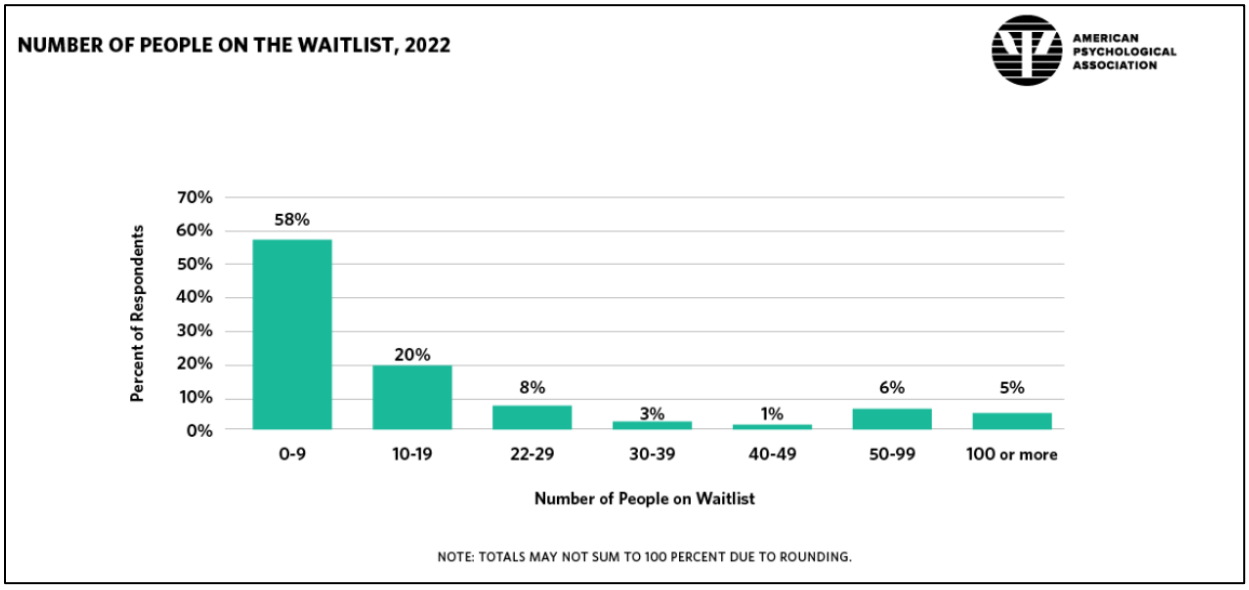
Figure 76



Nationally, the shortage of mental health care professionals does not seem to be a pandemic-specific issue, as national shortages in the number of mental health care professionals were observed and projected to persist into the future in years prior to the pandemic. In 2018, it was projected that a steady growth in the population combined with the soon-to-be expected retirement of more than half of the psychiatrists would result in a national shortage of psychiatrists of between 14,280 and 31,091 by 2024 (based on the assumption that 2018 conditions remain constant until 2024)[130].

Shortages of mental health professionals in the United States has led to practicing mental health professionals being faced with more demand than they can serve. According to a 2022 national survey of mental health practitioners conducted by the American Psychological Association (APA)[131], 60% of psychologists indicated that they were not accepting new patients. 43% of surveyed practitioners indicated that they had between 10 -100 or more potential clients on their waitlist (**Figure 77**). Among those professionals indicating that they had a waitlist, 72% of them reported that their waitlists have increased in size since the beginning of the pandemic.

Figure 77



[130] **Source**: Satiani, A., Niedermier, J., Satiani, B. & Svendsen, D.P. (2018). Projected Workforce of Psychiatrists in the United States: A Population Analysis. *Psychiatric Services, 69(6),* 710-713.

[131] **Source**: American Psychological Association (2022). Psychologists struggle to meet demand amid mental health crisis. 2022 COVID-19 Practitioner Impact Study. Accessed online at: https://www.apa.org/pubs/reports/practitioner/2022-covid-psychologist-workload

Long waitlists for mental health care have also been observed in New Jersey. According to a 2022 survey of 93 New Jersey outpatient mental health treatment facilities[132], 25% of the contacted facilities indicated that they were not accepting new patients. 60% of the contacted facilities indicated that they were accepting new patients, but the average wait times for treatment in these facilities ranged from 3.2 - 9.8 weeks, with longer average wait times reported for facilities in Northern New Jersey (average wait time is 8.9 weeks) than in Central New Jersey (average wait time is 6.1 weeks) and Southern New Jersey (average wait is 3.5 weeks). One may speculate that long wait times between requesting and receiving care could result in exacerbation of symptoms individuals seek treatment for and/or may discourage obtaining the care they need.

Summary

Approximately one in five New Jersey residents reported feeling the need to obtain mental health care during the pandemic. Depending on the source evaluated, anywhere between 9% - 16% of New Jersey residents reported obtaining mental health treatment during the pandemic, with those aged between 18-49-year-olds reporting obtaining treatment more so than older adults and White residents reporting obtaining treatment more frequently than racial minority groups. In contrast, between 7%-10% of New Jersey residents reported wanting or needing counseling or therapy, but not obtaining it during the pandemic. Nationally, this was more commonly experienced by younger (compared to older), female (compared to male) and Other/Mixed Race (compared to other race) residents.

Counseling/therapy was the most common form of mental health treatment obtained by New Jersey residents. Seven out of 10 New Jersey residents who indicated obtaining mental health care during the pandemic indicated they received this treatment via telehealth services. Telehealth forms of mental health treatment became much more common in the state, with more facilities offering telehealth options and a greater share of medical telehealth services being used to treat mental health, primarily for anxiety, depression and

[132] **Source**: Mental Health Association in New Jersey, Inc. (2022). Wait Times for Outpatient Mental Health Treatment in New Jersey. Accessed online at: https://www.mhanj.org/content/uploads/2022/08/Wait-Time-Study-March-15-2022.pdf

adjustment disorders. The majority of those who obtained telehealth-based mental health care indicated that the quality of telehealth mental health treatment was comparable to or better than in-person mental health treatment, indicating that the increasing use of telehealth services is a promising development in the field of mental health care that can continue into the future despite COVID-19 restrictions for in-person care being reduced, if not eliminated, by this time. This may be a particularly valuable development in the field of mental health care for prospective clients who live in rural regions without local mental health treatment facilities in close proximity and individuals who have mobility difficulties. However, almost one-fifth of the individuals reporting having received telehealth forms of mental health treatment indicated that their experience with telehealth treatment was worse than their experiences with in-person forms of treatment. Thus, more research, development and telehealth-specific forms of training are needed to ensure that most individuals receiving telehealth forms of mental health treatment are being cared for with comparable degrees of quality as in-person forms of treatment.

Despite observations indicating increases in problematic alcohol and drug use and drug-related deaths during the pandemic (as reported in Section 2), it was observed that the number of individuals entering treatment for substance abuse decreased during the pandemic years relative to pre-pandemic years. It was also estimated that approximately six out of 10 individuals in the state needing substance abuse treatment did not obtain it during the pandemic (compared to four out of 10 individuals not obtaining needed substance abuse treatment in pre-pandemic years).

Based on admissions data, mental health treatment provided by hospital emergency rooms and state psychiatric hospitals decreased in 2020 relative to 2019. The only exception to this was an increase in the number of hospital emergency room visits related to attempted suicides, particularly for middle- and advanced-aged, female, Black and Other Race populations.

Finally, we observed evidence of there being shortages in the number of mental health care professionals working in the state, which may be making it more difficult to receive or preventing individuals from obtaining needed mental health treatment. In addition to being a broad observation, this was specifically evident in K-12

schools, as the ratio of the number of school-based mental health care professionals to students exceeds rates recommended by national professional organizations. Further, there are approximately one in five schools in the state without a school counselor employed on-site. Such shortages in the mental health care workforce have overburdened practicing professionals, with one-fourth of mental health treatment facilities in the state reporting not accepting new patients and six out of 10 of treatment facilities maintaining waitlists requiring new patients to wait, on average, between 3-10 weeks for needed treatment.

In the next and concluding section of this report, we will discuss policy recommendations to improve the state of mental health and mental health treatment in New Jersey. Further, we will discuss important limitations of the research presented in this report.

Section 4: Policy Recommendations and Limitations

The findings presented in Sections 2 and 3 of this report indicate that in New Jersey and, more broadly, in the United States, the pandemic was associated with more common experiences of mental health problems coinciding with reduced access to mental health care. With respect to the latter issue, the pandemic seemed to be related to instances of reduced access to mental health care (e.g. indicated by reduced rates of admissions in substance abuse treatment programs; reduced instances of mental health treatment in hospital emergency rooms) whereas other reductions in access to mental health care seemed to not be specifically related to the pandemic as such reductions were continuations of trends of reduced treatment observed in years prior to the pandemic (e.g. reduced admissions to state psychiatric hospitals and reductions in the number of beds available at long-term inpatient/residential mental health treatment facilities).

Given such observations, we recommend that the New Jersey state and federal governments invest further in the mental and behavioral health care systems in order to reduce the prevalence of mental illness and substance abuse and to make it easier for residents to obtain needed treatment. Investments should be made to:

- fund research that aims to understand the causes of the increased prevalence in mental health and substance use disorders and the methods by which the rates of these disorders can be reduced,
- expand the mental health and substance abuse treatment workforce to reduce the shortages that have been observed in the number of psychiatrists, psychologists, social workers, and substance abuse counselors working in the state and to reduce the workloads of and waitlists maintained by those mental health care professionals that are currently working in the state,
- expand the mental health treatment system operating in K-12 schools to decrease the number of school counselors/psychologists/social workers per student ratios, which are currently higher than what has been recommended by national professional organizations. This expansion needs to be made to reduce, and ultimately eliminate, the number of schools that operate in New Jersey without employed on-site school counselors, as is currently the case for 21% of schools in the state,

- develop methods to better detect instances of child abuse and neglect in situations when students are not attending school in-person and to fund research aimed at determining whether annual reductions in the number of cases of child maltreatment that have been reported to Child Protective Service agencies over the years is an indication of fewer instances of maltreatment or increased incidents of failing to detect actual cases of maltreatment,
- fund research aimed at determining the best practices for delivering mental health care via telehealth methods and invest in specialized training for mental health care professionals aimed at ensuring high-quality care via this form of treatment. Further, while most telehealth-delivered mental health care has focused on treating anxiety and depression, further research could investigate the feasibility of expanding telehealth-delivered mental health treatment for other, and perhaps more severe, forms of mental illness and substance abuse disorders,
- fund and expand legal access to "harm-reduction" programs intended to decrease the number of drug-related deaths and communicable diseases via the: (a) medical supervision of the use of dangerous drugs so that medics can administer life-saving treatment when overdoses occur, (b) distribution of overdose reversal kits that drug-users can take home, (c) testing of drugs to ensure that there are not any unknown impurities or alternative substances like fentanyl mixed into the substances being consumed, (d) distribution of clean needles (in order to reduce viral/bacterial infections due to the use of unclean needles for syringe-injected drugs), (e) promote outreach for drug-addicted individuals in order to provide education about safe(r) drug-use practices and encourage needed treatment and (f) provide vaccinations against diseases that are commonly contracted via the use of injectable drugs[133]. Prior

[133] **Source**: Substance Abuse and Mental Health Services Administration. Harm Reduction. Accessed online at: https://www.samhsa.gov/find-help/harm-reduction

research has indicated that harm-reduction programs like safe-injection sites and clean needle exchange programs reduce drug-related deaths and disease infections[134,135], and

- provide more funding and resources to long-term inpatient and residential facilities to increase access to optimal care for severely mentally ill populations and reduce the burden of treating severe mental illness that have been placed on general hospital emergency departments and the criminal justice system, which may not be optimized to provide adequate and timely care for those with such severe mental illness.

Limitations

As informative as these analyses have been, there are important limitations that should be considered when drawing conclusions and guiding future research and policy debate/development based on the empirical evidence we presented in this report.

The first major limitation concerns all of the analyses we presented that assessed annual changes in mental health- and mental health treatment-related variables. Except for the data obtained via the CDC's Household Pulse Survey, the publicly available datasets we worked with presented annual (as opposed to monthly or daily) totals and percentages of the variables we worked with. While useful for broadly comparing pre-pandemic vs. pandemic years, there are limitations to comparing 2020/2021/2022 totals/percentages to those of pre-pandemic years (most commonly assessed between 2016-2019 in our analyses). First, the year 2020 included almost three months of time before the pandemic was officially declared and began disrupting the life of New Jersey, U.S., and global populations. How combining measures pertaining to ~3 months of a pre-

[134] **Source:** Finke, J. & Chan, J. (2022). The Case for Supervised Injection Sites in the United States. *American Family Physician, 105(5),* 454-455.
[135] **Source**: Ruiz, M. et al. (2019). Using Interrupted Time Series Analysis to Measure the Impact of Legalized Syringe Exchange on HIV Diagnoses in Baltimore and Philadelphia. *Journal of Acquired Immune Deficiency Syndromes, 82(2),* 148-154.

pandemic period (Jan-March 2020) with measures for the remainder of the year affected the analyses comparing 2020 to 2019 (and earlier years) is currently unclear.

Further, assessing annual totals/percentages in 2020, 2021 and 2022 may have masked more short-term, transient effects that could have occurred with respect to the mental health and mental health treatment of New Jersey and United States residents. In 2020, the early months of the pandemic, compared to later months, were a time of great uncertainty and fear given the lack of knowledge about the COVID-19 virus and the duration of how long social lockdown orders would remain in effect. Later in the year, some lockdown orders were lifted, and more was known about the virus itself. By December 2020, the first COVID-19 vaccinations were administered. This timeline of events may have resulted in certain pandemic-related changes only occurring within a few weeks or months at the beginning of the pandemic rather than being characteristic of changes occurring over the course of the entire year. Another example of this pertains to 2021. At the beginning of 2021, many restrictions of social gatherings were still in place. For example, students began 2021 attending school remotely in many state districts (with the state government beginning to encourage the return of in-person instruction in March[136]) and large indoor and outdoor social gatherings were prohibited until June[137]. Further, COVID-19 vaccination rates increased over the course of the year in the state. It was only on April 19, 2021 that all New Jersey residents were eligible to receive the vaccine[138]. By March 18, 2021, only 13% of the New Jersey population was fully vaccinated and 26% of the New Jersey population had received at least one dose of the vaccine. By the last day of the year, these rates increased to 70% and 84%, respectively[139]. Given that prior research has indicated that lower levels of anxiety and depression have been observed, on average, in vaccinated

[136] **Source**: Clark, A. (2021, March 17). 'Now is the time' for schools to reopen, Murphy says as pressure mounts. New Jersey.com. Accessed online at: https://www.nj.com/education/2021/03/now-is-the-time-for-schools-to-reopen-murphy-says-as-pressure-mounts.html

[137] **Source**: The State of New Jersey (2023). Has New Jersey lifted restrictions? New Jersey COVID-19 Information Hub. Accessed online at: https://covid19.nj.gov/faqs/nj-information/reopening-guidance-and-restrictions/has-new-jersey-lifted-restrictions

[138] **Source**: Pietsch (2021, April 5). Those 16 or older in New Jersey will be eligible for a vaccine on April 19, the governor says. *New York Times*. Accessed online at: https://www.nytimes.com/2021/04/05/nyregion/new-jersey-covid-vaccine-eligible.html

[139] **Source**: USA Facts (2023). New Jersey Coronavirus Vaccination Progress. Accessed online at: https://usafacts.org/visualizations/covid-vaccine-tracker-states/state/new-jersey

compared to non-vaccinated individuals[140], it suggests the possibility that any pandemic-related effects on mental health and mental health treatment in 2021 could have changed over the course of the year, something that would not have been observable given the available annual data found in most of the datasets we worked with. In sum, while our analyses were useful to get a broad sense of how the pandemic may have changed mental health and mental health treatment in 2020 and beyond, our research, for the most part, is not able to provide insights on any potential transient effects that occurred on monthly or daily time scales.

Additionally, our assessments of annual changes in mental health- and mental health treatment-relevant variables were cross-sectional in design. Consequently, we cannot confidently draw causal conclusions pertaining to any of the observed changes between pre-pandemic versus pandemic years. As to whether the pandemic itself caused any of the changes we observed to occur in 2020/2021 relative to pre-pandemic years cannot be known based on these assessments. Further, the cross-sectional design of these analyses did not allow for any assessments of change occurring within-subjects, and thus, it cannot be known from our analyses how individuals differed from themselves between pre-pandemic versus pandemic time periods.

Another major limitation is in the way that the prevalence of mental health disorders was measured and recorded by the datasets we used to generate our findings. The two primary methods were self-report surveys and treatment records, which together may not provide a thorough assessment of the actual experience of mental health problems occurring in the state and beyond. Self-report measures are limited in that researchers must place faith in the veracity of respondents' reports. Privacy concerns and/or stigmas associated with classifying an individual as having a mental health disorder may discourage some individuals from truthfully disclosing to a stranger (e.g., a researcher) that they experience symptoms of mental illness. Further, for many survey studies, respondents may vary from each other in the criteria they use to characterize their mental health and their memory of mental health-related experiences (something that is particularly relevant to the analysis of

[140] **Source**: Chen, S., Aruldass, A.R. & Cardinal, R.N. (2022). Mental health outcomes after SARS-CoV-2 vaccination in the United States: A national cross-sectional study. *Journal of Affective Disorders, 298*, 396-399.

the Hughes Center Poll, which asked individuals in March-April 2023 to remember and describe experiences that they had both prior to and during the entire pandemic).

Treatment records improve on the limitations of self-report-based assessments in the sense that mental health care professionals are the ones responsible for evaluating and reporting incidences of mental health disorders, which provides a more standardized and reliable approach for measuring and recording instances of mental illness. However, analyses of treatment records are limited in that not everyone who experiences mental health problems obtains treatment, and thus, such individuals are not reflected in datasets based on this type of assessment. Thus, treatment records do not allow for an accurate assessment of actual prevalence rates of mental health problems.

When it comes to assessments of national or worldwide prevalence rates of mental illness, another limitation pertains to state- and country-based variability in reporting rates and/or diagnostic criteria for many mental health and mental health treatment-oriented variables. Thus, the calculation and analysis of national and global averages may not be completely representative of reality. Averages being computed based on values representing non-standardized measurements and/or unequal response rates across states/nations likely biased national and global average values in unknown ways.

The final major limitation we would like to address is the lack of attention paid to some important populations when assessing how mental health and mental health treatment varied between different groups. We were limited to the demographic variables measured, recorded, and made publicly available in the datasets we analyzed for this report. In these datasets, some important demographic information was not measured in a way that would support our ability to track changes prior to versus during the pandemic. Two examples of such demographic variables are sexual orientation and gender identity. Analyses we performed on the national sample of the CDC Household Pulse Survey (**Table 8**) indicate that gay, lesbian, and bisexual individuals (compared to straight individuals) and that transgender individuals (compared to cisgender individuals) have substantially higher rates of experiencing symptoms of generalized anxiety disorder and major depressive

disorder[141] and have substantially higher rates of needing, but not obtaining, counseling/therapy[142]. However, the data presented in **Table 8** only reflects responses to surveys collected between mid-2021 and mid-2023 and, therefore, does not support an ability to assess whether there were any differences related to sexual orientation and/or gender identity in how the rates of depression, anxiety and not obtaining needed counseling/therapy changed in 2020-2023 relative to pre-pandemic years. Further, the CDC Household Pulse survey only publicly provides statistics pertaining to demographic-group differences for the national sample, not for the state-specific samples. These two demographic variables were not included in any of the other public datasets we analyzed, and thus, why the experiences of these important populations were neglected in this report.

Table 8[143]

		Mean (SD) Percent in the United States		
		% with Generalized Anxiety Disorder Symptoms	% with Major Depressive Disorder Symptoms	% Needing Counseling/Therapy but Not Obtaining It
Sexual Orientation	Straight	25.6% (1.4)	20.0% (1.0)	9.5% (0.2)
	Gay/Lesbian	39.8% (4.1)	33.3% (3.5)	20.5% (2.2)
	Bisexual	55.0% (2.5)	45.5% (2.9)	31.0% (2.5)
Gender Identity	Cisgender Female	31.2% (1.3)	23.1% (0.9)	13.4% (0.4)
	Cisgender Male	23.7% (1.5)	20.4% (1.2)	8.2% (0.4)
	Transgender	64.4% (7.5)	57.9% (5.5)	39.4% (6.1)

[141] **Analysis of data obtained via**: Centers of Disease Control and Prevention - Household Pulse Survey. Accessed online at: https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

[142] **Analysis of data obtained via**: Centers of Disease Control and Prevention - Household Pulse Survey. Accessed online at: https://www.cdc.gov/nchs/covid19/pulse/mental-health-care.htm

[143] Mean (SD) values pertaining to percentages of individuals experiencing symptoms of Generalized Anxiety Disorder and Major Depressive Disorder within the prior 4 weeks of being surveyed are based on the average percentages reported across 24 independent samples whose data was collected between 7/21/2021 – 5/8/2023 via the CDC Household Pulse Survey. The Mean (SD) values pertaining to the percentages of individuals who reported needing/wanting counseling/therapy but not obtaining it within the prior 4 weeks of being survey are based on the average percentages across independent 12 samples who data was collected between 7/21/2021 – 5/9/2022 via the CDC Household Pulse Survey

Additionally, even for demographic variables that were included in the public datasets and Hughes Center poll that we analyzed, some specific groups were sampled in relatively small groups that limited our ability to make what we could trust to be reliable group comparisons. This mostly occurred for many datasets that collected race-based demographic information. It was common in these datasets that racial minority groups were represented far less than white individuals and composed mostly small-sized groups. While we attempted to control for this as much as possible by calculating rates and percentages of each racial group relative to their group (which is a standard and important practice when comparing percentages and rates between different demographic groups), the relatively small sample sizes of racial minority groups in many of these datasets raise questions pertaining to the degree to which the racial minority samples are representative of their larger populations. It is unlikely that a small number of individuals can adequately and reliably represent the tremendously varied experiences pertaining to mental health and mental health treatment had by the general populations these samples were recruited from. The impact this had on the reliability of our race-group comparisons found throughout this report is unclear.

Final Remarks

Despite the limitations addressed above, our analyses indicate that much about mental health and mental health treatment changed in 2020 and 2021 relative to prior, pre-pandemic years. While it is currently unclear to what extent the pandemic itself contributed to these changes, it is our hope that by documenting these changes, researchers and public policymakers can use this information to guide future research and policy development in order to improve the mental health of New Jersey residents and improve their access to needed mental health treatment.

Appendix A: *Methodology of the March-April 2023 Poll Administered by the Stockton Polling Institute of the William J. Hughes Center for Public Policy at Stockton University*

The poll was sponsored and conducted by the Stockton Polling Institute of the William J. Hughes Center for Public Policy at Stockton University. Data collection took place from March 20 to April 3, 2023. A probability-based random sample of 663 New Jersey residents ages 18 and older were interviewed. The poll was conducted via telephone by live interviewers in English. The survey instrument was developed by Hughes Center faculty fellow, Dr. Justin Ostrofsky, Anna Caputo, Matthew Crilley and Keith Jennings. The questionnaire can be found at Stockton.edu/HughesCenter.

Of the full sample, 63 respondents (10%) were reached via live call to a landline, 487 respondents (73%) were reached via live call to a cellphone number, and 113 respondents (17%) were reached via SMS text message to a cellphone number, known as text-to-web. The live calls were conducted by an external vendor, Opinion Services based in Absecon, New Jersey. The respondents who received a text message were sent a message by Stockton Polling Institute staff made up of Stockton students from the University's Galloway campus. The text message included a link to take the survey online.

New Jersey landline and cell samples were generated via random-digit-dialing and provided by Marketing Systems Group. Listed and unlisted have an equal probability of selection. Within-household selection is done by asking for the youngest adult. Adults without a telephone are excluded from the sample.

Weighting was done to balance the sample demographics to be representative of the target population. Data are weighted using iterative proportional fitting, also known as raking or rim weighting. RIM weights were based on U.S. Census Bureau American Community Survey 2021 data for New Jersey on variables of age, race, education level, and sex. The poll's margin of sampling error is +/- 3.8 percentage points at a 95% confidence level. The margin of sampling error is higher for subsets. Sampling error does not account for other potential sources of bias in polls such as measurement error or non-response.