**Final Research Paper**

Megan Pearson

Colorado State University- Global Campus

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Dr. Jamia Mills

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**Abstract**

The measure of health in children, both physical and mental, is a cornerstone in determining their vitality. There is growing concern around the state of physical, mental, and behavioral health in today’s children around the world. While there are many theories to which factors might negatively impact a child’s health, research still needs to be conducted to measure which variables can exacerbate the health concerns and to what extent? To kick off this study, a dataset was selected from the CDC repository. This dataset contained survey results from United States children across many different demographic backgrounds, geographic locations, and socioeconomic statuses. Within the dataset, a quantitative measurement represented the percent of the population who confirmed experiencing or having various mental or physical health ailments.

Results from the analysis of this dataset do not show a strong correlation between variables that negatively impact physical health with those that negatively impact mental health. The only variable consistent in its higher population estimates for both health concerns was the pre-existing presence of a disability in a child. After identifying the top five largest estimates for physical and mental health in children, it was determined that demographically classified factors held the most negative influence on their health. Although the COVID-19 pandemic may have played an influential role, the trend of mental health in children is still increasing over time. This research showcases the growing struggles of US children with mental health disorders and how important factors such as disability status and family structure can worsen the situation. Increased mental health illness can lead to decreased quality of life. Using SAS data analysis techniques and evaluating other research studies performed during the pandemic, the urgency to act now for improving the mental health of children cannot be understated. By diving further into the factors that exacerbate mental illness and identifying true root causes, steps can be taken to mitigate risk and improve quality of life in children.

**Introduction**

Maintaining good physical health is linked to longer life expectancy and good overall quality of life. There has been a growing interest and further research performed on the importance of mental health but much of the population does not have the same understanding of the definition of mental health as physical health. Eaude (2009) offers the explanation of health as not simply portraying the absence of illness but rather an individual’s reduced probability in succumbing to illness or being able to recover quickly and bounce back. This definition applies to both physical and mental health for both adults and children. In an effort to spread awareness around maintaining good health in children, this research study aims to highlight significant variables that either positively or negatively affect the mental and/or physical health of children.

To begin this project, a dataset from the Centers for Disease Control and Prevention was selected. The dataset is titled Children Summary Statistics and contains quantitative data obtained from numerous families over the course of 5 years. Any patterns, trends, or correlations discovered from these results can be used to combat concerns around a child’s risk to their physical or mental health. This research study begins with outlining the proposal and objectives before proceeding to the hypotheses and descriptive statistics.

**Proposal**

In an article by Yang (2015), the author discusses the prevalence of mental health disorders in both children and adults. Physical health ailments are treated with appointments, medications, or programs such as physical therapy to overcome (or mitigate risk of) illness. However, when it comes to the topic of mental health, significantly less research and effort is conducted on reducing or treating mental health occurrences in children. The issues experienced by youth will carry over into adulthood and have the potential to impact other factors besides health such as legal, financial, and social problems (Yang, 2015).

For this analysis, the goal is identifying and understanding any correlations or patterns related to a child’s behavioral, mental, and physical health. The problem to address is learning more about the true cause of mental and physical illness in children with the first step being highlighting which factors might hold the most negative impact. Utilizing results from this dataset can help set the tone for future studies and projects aimed at mitigating mental and physical health risk in children. Once the objectives are outlined, the study overview will encompass details of the analysis plan.

**Objectives**

The primary reason for analysis of the CDC Children’s summary dataset is to better understand the variables that negatively impact or exacerbate a child’s poor physical or mental health. By gaining a better understanding of these external factors, precautionary measures can be taken by parents and caregivers to help prevent decline. Identification of these correlating factors will set the course for designing plans to help improve the overall health status of children. If strong correlations can be identified between overlapping variables that negatively impact both physical and mental health, this will reduce the level of effort needed to mitigate risk of poor overall health in children.

In an article by Shi, Li, Fang, Zhang, and Wang (2020), the authors stress the importance of the first three years of a child’s life is in relation to their development. With data collected during a series of well visits, Shi et al. (2020) used a cluster-randomized and controlled trial to prove their hypothesis to be correct. Parents and caregivers who receive additional parenting information such a physical and mental health resources during well visits with a pediatrician have children who scored higher on development skill tests. Through an opposing research study, authors Pisolkar, Dena, Green, Palmer-Clarke, Hinz, and Muhajarine (2024) highlighted the negative impacts of the pandemic on a child’s mental health and well-being in addition to their academics. Worsening psycho-behavioral health symptoms were largely attributed to increased screen time and decreased regular physical activity for children. This research study, also falling in the same timeline as the COVID-19 pandemic, will focus on similar mental and physical health aspects of a child’s life.

**Overview of Study**

Numerous families were included in the National Health Interview Survey. Data was collected from these responses and compiled to create the DQS NHIS Children Summary Statistics dataset utilized for this research study. This survey consisted of mental and physical health questions and was organized by different subcategories from various demographic, geographic, and socioeconomic classifications. Information found in this dataset narrows the focus to highlight physical and mental health statuses of US children under the age of 18. Within this research study, the dataset was filtered and divided into two smaller datasets to analyze mental and physical health statistics separately and compared later on.

The separate datasets were uploaded into SAS and analyzed through various techniques, tables, and graphs. Findings showcased variables with higher estimates in the dataset fell under the demographic classification. Of these variables that appeared to have the most negative impact to a child’s mental health included having a pre-existing disability, not having working parents, or the child living with at least 1 related or unrelated adult. Additionally, when analyzing trends over time, mental health concerns have continued to rise during this 2019-2023 time period while physical health concerns have remained steady with neither increase nor decline.

**Research Questions and Hypotheses**

Three different classification categories comprise the dataset and encompass different groups/subgroups related to the child. For demographic characteristics, the survey includes attributes such as race, family structure, or age. Factors that categorize individuals based on their location such as by urbanicity or region qualify as geographic classification. Statuses such as education level, employment, and poverty level are examples of socioeconomic characteristics. Understandably, questions geared towards education level and employment standing refer to the parents or guardians of the child. Related to socioeconomic factors, a research study by Apter, Reisine, Affleck, Barrows, and ZuWallack (1999) found a strong correlation between asthma patients with higher educational achievements also having higher quality of life and better mental health. Taking inspiration from this study, the first research question inquires about classifications of variables.

**Research Question 1**

* Are demographic, geographic, or socioeconomic factors the most impactful when it comes to physical and mental health?
  + Ha- socioeconomic factors have the highest negative impact on a child’s physical and mental health
  + Ho- it is not socioeconomic factors that have the highest negative impact on a child’s physical and mental health

For any time series dataset, it is important to consider external events that occurred during that time and could play a part in data trends. The CDC Children’s Summary Statistics occurred from 2019 through 2023 which is nearly perfectly timed with the overlap of the COVID-19 pandemic. During that time, researchers Lassale, Gaye, Hamer, Gale, and Betty (2020) were conducting a survey focused on the impact to the United Kingdom’s socioeconomic factors and mental health from ethnic disparities in hospitalizations caused by COVID-19. Through logistic regression techniques, they found numerous ethnic disparities. Their analysis suggested targeted prevention advice and vaccine availability was severely lacking for certain demographics and socioeconomic statuses. The second research question tried to find variables that overlap when it comes to a child’s physical and mental health conditions.

**Research Question 2:**

* Is there a strong correlation between variables (subgroups) that negatively impact a child’s physical health with those that negatively impact a child’s mental health?
  + Ha- there is a strong correlation between variables that negatively impact a child’s physical health with those that negatively impact a child’s mental health.
  + Ho- There is little to no correlation between variables that negatively impact a child’s physical health with those that negatively impact a child’s mental health.

Taking the global pandemic into account, data around which way US children’s mental and physical health statuses are trending could be understandably skewed. At the time of the CDC Children’s dataset publication in 2024, shortly after the data time series end of 2023, much of the world had lifted their restrictions and life was beginning to return to the conditions prior to the pandemic. Keeping the negative impact to physical and mental health status caused by the pandemic in mind, the third question asks which way the mental health status data is trending.

**Research Question 3:**

* Are mental and behavioral health concerns increasing or decreasing?
  + Ha- On average, mental and behavioral health concerns are increasing over time.
  + Ho- On average, mental and behavioral health concerns are not increasing over time.

**Literature Review**

For the research questions from this study, the first question asks which classification represents the highest estimates from CDC Children’s Summary Statistics variables. Out of the three different classification groups, it was demographically categorized subgroups that generally had the highest population estimates for negative physical and mental health concerns. Through another study performed during the COVID-19 pandemic timeline, Kobayashi, Saenz-Escarcega, Fulk, and Agusto (2023) discovered correlations between geographic information and political affiliation as it relates to participants mental health. Strong correlations between poor mental health and republican leaning states were found using clustering algorithms and dynamic connectomes. The CDC dataset contained geographic information such as urbanicity, social vulnerability, and region but none of these subgroups produced strong correlations with poor mental health for this research study.

A broad term for a mental or physical impairment denoting limitations in someone’s abilities to perform certain task is referred to as having a “disability”. Due to the vast range of interpretation and definition of a disability, this makes studies around impact to or from persons with a disability challenging. Within the CDC Children’s Summary Statistics dataset, the question regarding whether or not the child has a disability does not specify whether the disability is physical, mental, or even multimorbidity. To combat some of these research challenges, authors Lal, Tremblay, Starcevic, Mauger-Lavigne, and Anaby (2022) focused specifically on patients with newly diagnosed physical disabilities of asthma, diabetes, epilepsy, food allergies, or juvenile arthritis. A consistent correlation was found between children with newly diagnosed physical ailments and mental health disorders. These patients were now considered as having multimorbidity which is the presence of both a physical and mental health disability (Lal et al., 2022). These findings were consistent with the descriptive statistics findings for the CDC Children’s Summary Dataset. Children with a pre-existing disability were more likely to experience a greater decline in physical or mental health than those without a reported disability.

Pisolkar et al. (2024), discovered the extreme negative mental health impact to children, particularly those who were school aged, during the pandemic. The virtual learning environments lead to reduced physical activity, increased screen time, and poor sleep or eating habits. Studying the citizens of Saskatchewan, Canada, students showed notable mental health declines, particularly those with pre-existing mental health conditions likely caused by isolation and fear. These mental health declines are consistent with the data trend lines for mental health within the CDC Children’s dataset. Mental health consequences could be due to lack of available mental health resources for children (Pisolkar et al., 2024). To follow up this study, related research could be performed to determine how mental health resource accessibility changed after the first few years of the pandemic.

The mental disorders and challenges experienced in childhood do not disappear when the child becomes an adult. Many of these symptoms can carry over into adulthood and impact the way an individual responds to their environment, tackles tough decision making, and interacts with others. In an article by Yang (2015), the author highlights misconceptions around childhood mental health disorders and stresses the negative impacts that can occur as adults if not properly addressed. Dr. William Copeland, a professor of psychiatry at Duke University and lead author of the study adds that some childhood mental illness does not meet the threshold for diagnosis but will still impact them down the road. By using this study of factors impacting a child’s mental health, earlier identification of mental health signs could help parents and guardians recognize mild mental illness and proctor steps to mitigate negative impact experienced by the child as they grow into adulthood.

In an article discussing correlations between mental health and family structure, authors Grüning Parache, Vogel, Meigen, Kiess, and Poulain (2024) used R and linear regression models to perform their analyses. The data suggests family structure, particularly those with single parents (or the inclusion of 1 stepparent) has a major influence on a child’s well-being. Furthermore, the authors discovered that family structures impact on a child’s mental health was consistent across various socioeconomic statuses. This is consistent with findings from the CDC Children’s dataset on the impact of family structure for poorer mental health in children. Higher population estimates were observed for mental health concerns in families with demographic classification “at least 1 related adult or unrelated adult” and “single parent, ever married”. These findings emphasize the importance of a child feeling like they have proper family support in their childhood for improved mental health outcome.

One of the hypotheses for this project is increased mental health diagnoses in children over the course of the study time period. However, the COVID-19 pandemic also occurred at the same time as this research which could impact the results. An article by Tkacz and Brady (2021) revealed a rising trend in number of diagnoses in the world of mental illness from 2012-2018. Using diagnosis codes found on medical claims within the MarketScan Commercial Research Database, these authors focused on the following areas of mental health diagnoses: alcohol/substance abuse, depression, eating disorders, bipolar, schizophrenia, anxiety, developmental disorders, conduct disorders, and attention deficit/hyperactivity disorder (ADHD). Tkacz and Brady’s (2021) findings align with the increased mental health concerns found in the CDC Children’s summary insinuating that mental illness has been on the rise since 2012 and continues to increase through 2023. Another point made in the research study was the knowledge most mental illness in children is underdiagnosed, which could mean there are many more children who experience mental health disorders than are being treated (Tkacz and Brady, 2021).

The significance of increased parental involvement in a child’s life has been shown to improve a child’s health and early childhood development (ECD) skills. In a study performed by Shi, Li, Fang, Zhang, and Wang (2020), a cluster-randomized controlled trial was held on twenty families in urban communities around China. Families from the test group were provided with additional parenting intervention material during physician appointments which contained care instructions and development activity suggestions for the children while the parents of the control group did not receive this additional material. Results showed similar development outcomes but significantly higher communication and find motor skills. While the CDC study was limited in what types of parenting material the families were offered for their children, family structure was a significant factor in the mental and physical health of a child. Shi et al (2020) suggestion to incorporate additional parenting material for developmental skills to families by their physicians could bring more awareness to these critical health concerns in today’s children.

**Research Design**

**Methodology**

The subject of mental health continues to grow in popularity. For this project, the increasing interest for both mental and physical health studies open many possibilities for available resources. Using a trusted resource for accurate and broad reaching population data, the Centers for Disease Control and Prevention offers a large repository of datasets around mental and physical health. After selecting the CDC Children’s Summary Statistics dataset, performing data cleaning, filtering, and organizing, all three datasets were uploaded into SAS to perform descriptive statistics.

**Methods**

Through several tables, graphs, and formulas in SAS, descriptive statistic results can be seen in the figures below. The CDC Children’s Summary Statistics dataset contains 5,030 records from an 18-question survey given to numerous US families around the country from varying demographic, geographic, and socioeconomic backgrounds. To filter down the dataset and focus on key mental and physical health characteristics, the data is broken into two new tables as follows:

***Mental/Behavioral Health Topics***

* Daily feelings of worry, nervousness, or anxiety among children
* Ever having a learning disability
* Ever having attention-deficit/hyperactivity disorder
* Receive services for mental health problems among children
* Receiving special education or early intervention services

***Physical Health Topics***

* Ever having asthma
* Fair or poor health status in children
* Missing 11 or more school days due to illness or injury
* Receipt of influenza vaccination among children
* Two or more hospital emergency department visits among children

For the select mental and physical health topics, these tables will be evaluated to identify which variables appear to hold to most significance in the population. Once identified, the top variables between physical and mental health will be compared to determine if there is any correlation.

**Figure 1**

*Pie Chart showcasing the breakdown of characteristic variables in the combined dataset*

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**Figure 2**

*Box plot displaying averages and outlier estimate values by group*

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**Figure 3**

*Summary Statistics for Mental Health Dataset*

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**Figure 4**

*Table containing topics and values for the top 5 mean averages by subgroup and topic placed in an excel table*

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**Figure 5**

*Results of PROC UNIVARIATE*

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In situations where only one column of true quantitative data exists, the solutions to compare this estimate with a characteristic value is by using the PROC UNIVARIATE formula in SAS Studio. This formula performed an analysis with variable “Estimate” and classified by “SubGroup”. The amount of data retrieved from this query was vast but an example of one result can be seen in Figure 5. The formula used is below.

proc univariate data=MP\_EPM2.capstone\_combined;

class SUBGROUP;

var ESTIMATE;

run;

**Figure 6**

*Series Plot for estimate averages among mental/behavioral health symptoms*

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**Figure 7**

*Series Plot for estimate averages among physical health symptoms*

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**Limitations**

There are several potential limitations when it comes to analysis of results from the CDC Children’s Summary Statistics dataset. As discussed earlier in this research study, this time series component of this dataset is from 2019-2023. During this time, the global COVID-19 pandemic had a significant negative impact on the lives of families all over the world. Within the data tables and graphs above, there is a clear shift in responses during the height of the pandemic in 2020. This could negatively influence the reliability of the data findings.

Identifying the correlating factors from the data will not mean they are the cause for poor mental or physical health. Correlation does not equal causation. Significant variables will need to be further evaluated to determine where and why this factor appears to have significance. For example, as seen in Figure 4, there is a higher estimate of children with mental health conditions from families where neither parent is employed. That does not mean that if both parents lose their jobs, their child will be diagnosed with anxiety or require special education support in school. However, could there be a cause within this significant variable playing into a child’s mental health? Are the parents stressed about how to pay bills without jobs which is worrying the child? Are the parents not able to purchase insurance through an employer and cannot afford ADHD medication? These are more areas to consider when performing the study conclusion.

**Ethical Considerations**

When it comes to the discussion of ethical considerations for data, the involvement of children within this dataset is the first question that comes to mind. If participants are under eighteen years of age, a parent or guardian will need to consent in order for the child to participate in surveys or assessments. Additionally, as it relates to the child’s age is also their comprehension of the survey question, study, or intent. One of the more common scenarios that benefits from having input from children are emergency situations where surveys and assessments are immediately launched to gather information designed to aid in the creation of appropriate policies and relief efforts. However, according to Bennouna, Mansourian, and Stark (2017), there are physical or psychosocial risks to children who are requested to participate in surveys after experiencing traumatic or disaster events. While a global pandemic qualifies as an emergency event, was it more damaging to subject children to research studies when they were still trying to process their own experiences?

Several of the attributes under the demographic classification of the survey inquired about a current or history of having a child with a disability. Conducting surveys of participants with disabilities adds another layer of ethical consideration. Similar to the emergency situations involving children, strong cases need to be made for permission to conduct surveys involving those with disabilities. It must be assured that there will be minimal (if any) risk to the participant and their responses will create value that will prove inherently beneficial for like individuals (Haines, 2017). In situations where the disability impacts the participants intellectual ability to comprehend or respond themselves, a parent or caretaker must sign on the contributor’s behalf.

With the involvement of a time series component of a dataset, there is the question of predictive analytics and ethical considerations coming from patient health information. Lawrie, Fletcher-Watson, Whalley, and McIntosh (2019) identify ethical questions that must be addressed prior to obtaining the data. Do the participants, or parents/guardians of the participants, want to know the likelihood of negative physical or mental health impact to their child based on meeting certain criteria? Many studies incorporate predictive analytics into their research study. In these situations where findings could indicate significant risk to the participant, would it be harmful or beneficial to relay back to that individual and who is responsible for making that decision?

**Findings**

Of the questions researched in this study, the alternative hypothesis was rejected in two of the three theories. The primary objective for these questions was to evaluate the similarities between different variables that negatively impacted mental/behavioral and physical health. From the data analysis, the findings varied in the information they revealed about these variables.

**Research Question 1**

The first research question wanted to know which of the three classifications had variables that most impacted physical and mental health: demographic, socioeconomic, or geographic. It was hypothesized that socioeconomic factors such as income/employment status or education levels would hold the most influence over a child’s health. However, in this scenario, the findings (found in Figures 2 and 4) showed that having a disability, a demographic classification, was the variable that most affected a child’s physical and mental health. Following the disability variable, other demographically classified factors such as ‘living with at least 1 related or 1 unrelated adult’ and ‘single parent, ever married’ were significant aspects of a child’s life that negatively impacted mental health specifically.

Demographic classification proved to be the most impactful variable for both mental and physical health with socioeconomic variables having fewer but still significant estimated influence on a child’s health. Variables such as ‘no working parents’ and ‘below the 100% poverty line’ (for physical health) did not come as a surprise with the cost of healthcare. Having less of an impact compared to demographic and socioeconomic characteristics, geographic classification groups such as metropolitan statistical area and urbanicity held some significance for a child’s physical health for the subgroup ‘received flu vaccine’. These values were lower than children from other geographic locations. Some questions that evolved from this study is how the findings may change if different socioeconomic or geographic questions were asked. Such as in the study performed by Kobayashi et al. (2023), what is the possible political affiliation/geographic location significance when it comes to vaccines or Medicaid?

**Research Question 2**

Research question 2 was the primary question for the basis of this study. Is a strong correlation present between variables (subgroups) that negatively impact the physical health of a child with those that impact the mental health of a child. To evaluate this, two different datasets were created from the original dataset to analyze physical and mental health factors separately. Similar to research question 1, the table seen in Figure 4 showcases the population estimates for physical and mental health questions from the original CDC Children’s Summary Statistics dataset. Again, with similar results to question 1, the null hypothesis is proven to be true, and the alternative hypothesis is rejected. The presence of a disability within a child is the top influencing factor for a child’s mental and physical health. However, that is where the strong correlation between the two stops.

After the disability variable, the only other overlapping factor between a child’s mental and physical health was having ‘no working parents’. This can be seen in Figures 4, 5, and 8. While evaluating the results of the PROC UNIVARIATE formula in SAS (Figure 5), a new line in the code allowed the histogram from Figure 8 to be added and analyzed. Note that Figure 8 formula uses the combined dataset (both mental and physical health observations) to analyze each factor. The new code appears as follows:

proc univariate data=mp\_epm2.capstone\_combined;

class SUBGROUP;

var ESTIMATE;

HISTOGRAM ESTIMATE/Normal;

run;

**Figure 8**

*Histogram with normal distribution curve for subgroup = no working parents of combined physical and mental health average estimates*

A screen shot of a graph

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The PROC UNIVARIATE formula displays important summary statistics (Figure 5) such as mean (14.16), standard deviation (10.19), and variance (103.82). Additionally, the p Value for this variable is <.0001 which represents statistical significance in the dataset. Figure 8 shows a normal curve in relation to the right skewed data within the histogram. This positive skew results in a higher estimate due to the long tail to the right.

This is consistent with findings performed in a study by Nick Drydakis (2023) titled “Economic Recession, Parental Unemployment and Adolescents’ Health-Related Quality of Life and Mental Health Outcomes in Greece”. In this research on impact to children aged 15-18 from time periods 2011-2013 and again for the same participants in 2017-2019, Drydakis analyzed the impact to adolescents during a severe economic regression when the unemployment rate reached 17%. They hypothesized that parental unemployment would impact at least three critical areas of a child’s mental and physical health: increase financial struggles, reduce care for children, and decrease health investments. The findings confirmed decreased health-related quality of life for these adolescents as well as increased adverse mental health symptoms.

**Research Question 3**

For research question 3, the inquiry was around whether mental/behavioral health concerns were increasing or decreasing over time. The hypothesis was on average, mental health concerns are increasing over time. In this particular dataset, the findings rejected the null hypothesis and proved that mental and behavioral health issues are steadily increasing within the five-year study period. The graphs in Figures 6 and 7 shows the average estimates for mental health and physical health from 2019 to 2023. Within Figure 7, the general trend of physical health concerns is unchanged and remains steady. However, Figure 6 shows that a gradual upward trend for average estimates of all mental health results over five years.

Although this dataset was obtained in the midst of a pandemic, the overall increasing mental health concerns is consistent with findings from a study performed from 2012-2018 by researchers Joseph Tkacz and Brenna L. Brady. This retrospective study on data from MarketScan Commercial Claims and Encounters Database provided Tkacz and Brady (2021) with demographic, diagnostic, and cost information for children in the US. Their findings reveal significant increases in mental health disorders such as attention deficit/hyperactivity (ADHD), anxiety, and depression. Furthermore, families with children having these diagnoses are faced with much greater medical costs. This likely impacts children from households with single or little income.

**Conclusion**

The goal of this study was to identify whether a strong correlation existed between variables that negatively impacted a child’s mental and physical health. If numerous subgroups could be identified, attempts to positively influence a child’s health conditions could be improved by narrowing the level of effort needed. By consolidating the scope of research and focus, more resources could be made available to families in the US and change the course of a child’s health. From the results of the analysis, there was only one variable that consistently resulted in higher average population estimates for children with physical and mental health concerns: having a disability. However, there were no other truly significant correlated variables for poor physical and mental health in children.

Despite not having a strong overlap in the same factors negatively influencing physical and mental health in children, some great takeaways were still discovered within the dataset regarding mental health. Unfortunately, the average population estimate for mental and behavioral disorders is trending up. Thankfully, from this dataset, much of the classification for factors negatively impacting mental heath disorders stems from a child’s demographics and particularly in the group family structure. Based on these findings, there are certain recommendations for moving forward with further research and available actions to address.

**Recommendations**

Where should research go from this point? Considering the average estimation for physical health concerns has not changed much over the past five years while alternatively, mental health concerns in children are increasing, research efforts should be targeting mental health studies. The CDC Children’s Summary Statistics dataset is a small snapshot in time for a fragment of the population. For example, not all demographics were accounted for. Recommendations for moving forward would include repeating this study with a broader list of participants across various demographics, geographic locations, and socioeconomic statuses. Additionally, the survey should include different questions around mental health and likely incorporate both quantitative and qualitative data. Further research into mental health will help identify the true cause.

Correlation does not imply causation. Just because certain variables may have a strong significance with mental health does not mean it is the cause of a mental disorder. For example, having a disability does not mean a child will have daily feelings of worry or anxiety, but they could come from a similar cause. In addition to identifying true causal factors, continued research will also help develop ways to mitigate mental health impact and risk.

Identification of statistical significance within variables can then be used to help discover true cause of mental health illness or risk. Once this has been accomplished, the next step is developing a course of actionable steps to combat the threat of mental illness onset. Raising awareness about the signs and treatment for mental health disorders is the first step in reducing the negative impact on US children. The more resources and research that can be allocated to this cause will ensure a brighter future for the next generation.

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