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Abstract

ASSOCIATION BETWEEN POVERTY AND ACCESS TO MENTAL HEALTH
TREATMENT AMONG CHILDREN, AGES 3-17, IN THE UNITED STATES,

(NSCH 2017)

By

Mattou Mokri

29 July 2019

INTRODUCTION: Mental health disorders affect an individual's emotional, psychological, and social well-being and affects 13-20% of adolescents between the age of 13 to 18. Majority of term mental illnesses start in childhood and adolescent years, with 50% of all lifetime cases starting around age 14 years. Treatment at early ages means decreased risk of long-term problems linked to mental disorders like alcohol and drug abuse. Children living in poverty have a higher risk factor for mental disorders and may also have limited access to quality mental health care.

AIM: This study aims to examine the relationship between access to mental healthcare and whether a child lives in an impoverished household using data from the 2017 National Survey of Children's Health (NSCH).

METHODS: The NSCH is a cross-sectional survey that collects information on the physical and emotional health; parent and neighborhood characteristics of a nationally representative sample of children aged 0-17 years. A total of 58,510 participants were interviewed in the 2017 wave of the survey. Descriptive statistics and logistic regression analysis were used to examine the associations between poverty, mental health treatment, and access to health insurance.

RESULTS: There were a total of 2723 total children averaging 11 years were included in this analysis, 14.4% of which did not have access to mental health. Approximately 52% of children were male, and majority were white (77.3%). Roughly 15% of the children lived in poor households with income below the 100% federal poverty level (FPL). Seeking a mental health professional for treatment was significantly associated with race, education of caretaker, insurance status, and federal poverty level. After adjusting for all factors, children who lived in households below 100% FPL were significantly more likely to report not having access to mental healthcare that was needed (OR=2.235, 95% CI:1.564, 3.192).

DISCUSSION: The results suggest that there is a strong association between child poverty and lack of access to needed mental health. There is a need for interventions to improve access to mental health care services for children from poor households in order to prevent further complications, and other long-term health problems including caretaker education and decreased stigma surrounding the topic of childhood mental illness. Further research can also help identify other factors that impact childhood mental disorders and disparities in access to treatment among underrepresented populations as well as create a more generalizable study through the use of other survey methods and a more diverse group of children.

THE ASSOCIATION BETWEEN POVERTY AND ACCESS TO MENTAL HEALTH
TREATMENT AMONG CHILDREN, AGES 3-17, IN THE UNITED STATES, (NSCH 2017)

by

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B.S., UNIVERSITY of WEST GEORGIA

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of Georgia State University in Partial Fulfillment

of the

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APPROVAL PAGE

The Association Between Poverty and Access to Mental Health Treatment

Among Children, Ages 3-17, in the United States, (NSCH 2017)

by

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Author's Statement Page

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Mattou Mokri

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Chapter 1: Introduction

1.1 Introduction

Mental health is a significant public health problem in the United States. One in every five children between the age 13 to 18 years suffer from a mental health condition⁴ with childhood and adolescent years being the foundation for long term mental illnesses and 70% of all cases starting before the age of 25⁴. Different characteristics such as emotional, psychological, and social well-being can affect one's mental health^{12, 8}. In children, mental health problems can also be a precursor to substance abuse, criminal-like behavior, and other risky activities²¹. Therefore, it is vital to treat the disorders when children are still young and in their early onset stages. Risk of mental disorders is heightened in underprivileged children, especially those living in impoverished households.

Poverty is an important predictor of poor health outcomes among children. According to McLeod and Shanahan (1993), poor children tend to experience more psychological distress when compared to their not poor counterparts. However, they also note the lack of information on the associations between the two¹⁸. Additionally, the Center for Disease Control and Prevention's (CDC) 2005-2011 Mental Health Surveillance Among Children report stated that studies of adults do suggest an association between depression and lower social class, but findings from samples that focus on children and adolescents are not as consistent².

1.2 Study Purpose

The purpose of this study is to determine if there is an association between lack of access to mental healthcare and child's poverty defined as a child living in household below the 100% federal poverty level threshold. Isolation, poor access to care, no resources and no opportunities for behavioral and social development are all problems that many children in poverty face.

According to the CDC, these poverty-bound issues often lead to mental, behavioral, and developmental disorders like anxiety, learning problems, and even ADHD¹⁴. There is a gap in research when it comes to children, mental health care access, and poverty, with many scholarly articles focusing more on the issues related to diagnosis rather than access to care.

1.3 Research Question

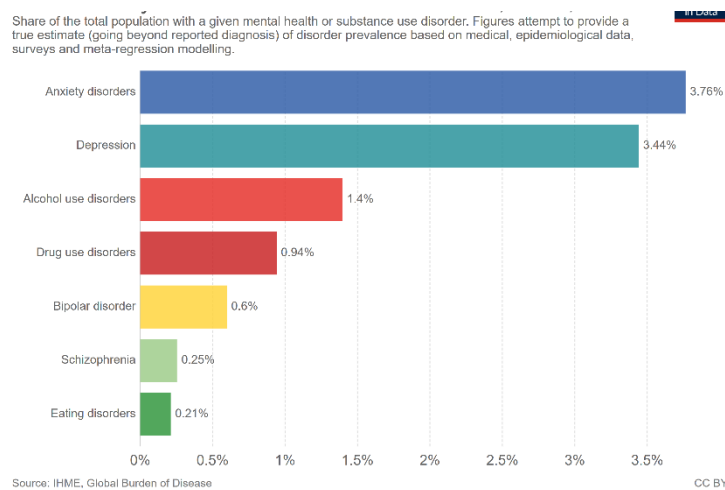
1. Is there an association between income level of child's household and access to mental health care in children age 17 years and younger?
2. What is the effect of sociodemographic factors (race, education level of parents, and health insurance status) on the association between income level of child's household and access to mental healthcare in children age 17 years and younger?

Chapter 2: Literature Review

2.1 Mental Health

Emotional, psychological and social well-being as well as a person's ability to cope with everyday life all play a part in one's mental health^{12, 8}. Medilexicon's Medical Dictionary defines mental health as the actual absence of behavioral and mental disorders⁷. Mental health includes many different disorders and conditions including depression, anxiety, eating disorders, and schizophrenia are just a few of the more well-known illnesses that fall under the general umbrella of mental health disorders, as shown in figure 1. Mental illness not only affects the way one goes about daily life but also can severely attribute to physical health²⁰. Physical complications include weakness of the immune system, lead to heart disease, and overall weakness and tiredness. Signs and symptoms of some of these illnesses include mood changes, withdrawal and detachment, substance abuse, heightened stress as well as the inability to cope with the stresses⁹.

Figure 1: Prevalence by Mental and Substance Use Disorder, Global 2017



In 2017, The Substance Abuse and Mental Health Services Administration's annual national report described a total of 46.6 million adults with mental illness, and about 11.2 million of those adults were found to have a serious mental illness. Although SAMHSA did not report on mental illness of the adolescent population, they did report youth depressive episodes. SAMHSA defines major depressive episodes (MDE) as depression that causes impairment in daily life. SAMHSA reported that 3.2 million youth age 12-17 suffered from an MDE. Even though 1 in 5 adults experience some form of mental illness in their lifetime, only 41% of adults in the U.S. with a mental health condition receive any form of mental health services²⁵.

2.2 Mental Disorders Among Children

According to the National Alliance on Mental Illness, 13-20% of adolescents aged 13 to 18 suffer from some form of mental health condition. Childhood and adolescent years are the foundation for long term mental illnesses, with 50% of all lifetime cases starting around age 14 with an average of a ten-year gap between onset and actual interventions⁴. Although adults and children suffer from the same disorders, the way they are affected is typically different. Children are more likely to have a change in the way they learn as well as their behavior and the way they go about their day to day activities². The early onset, prevalence, and way it affects children makes mental disorders among children an important public health matter²¹.

The signs and symptoms of childhood mental disorders change as children grow but are often recognized through actions, speech, and emotions¹¹. Symptoms must also meet the criteria of the Diagnostic and Statistical Manual, which is updated every so often²⁸. Early recognition can lead to management and even full treatment of the disorder¹¹.

Suggested preventive methods and interventions often begin before diagnosis. Programs and policies that engage children at young ages and promote growth, allocate resources, as well as eliminate risk and increase the strength of children are the foundation of primary prevention.

Interventions include school and community-based competencies that frequently test children and family resources to provide a more well-equipped home. These interventions provide a positive atmosphere for children ¹⁹.

2.3 Mental Health and Poverty

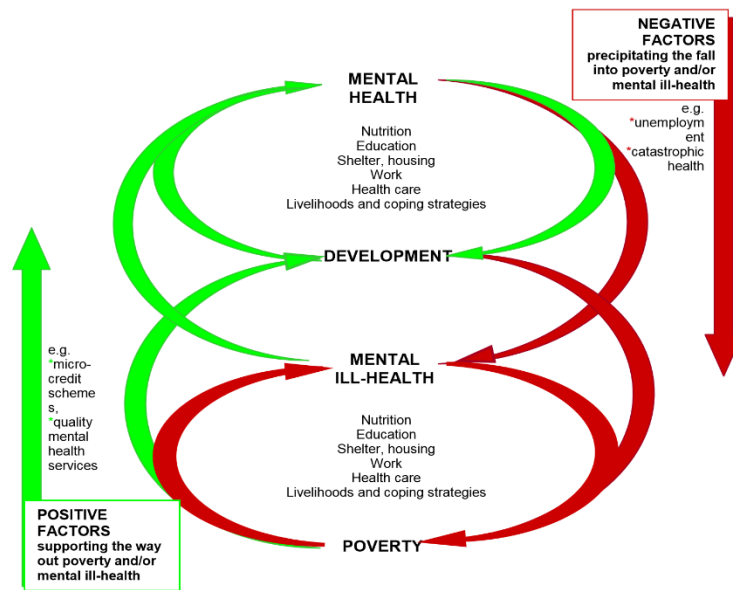
In the United States, poverty is measured by comparing household incomes to minimum amount of income necessary to cover basic needs. The threshold is set at a standard 100%, meaning a household is at the minimum income, anything percent that falls below this is identified as living in poverty¹⁷. Impoverished children tend to experience more psychological distress when compared to their more affluent counterparts, however, the correlation between the two is not backed by research. This is primarily due to the outlook on poverty at a single point in time as well as the lack of examination of other demographics like racial differences¹⁸. This verdict of inconsistent findings is also backed by the CDC's 2005-2011 Mental Health Surveillance Among Children report which claims that studies concerning adults do suggest an association between depression and lower social class. Nevertheless, findings from samples that focus on children and adolescents are not as consistent. Some studies report a lack of association between anxiety disorders and social class while others report a significant association for the most impoverished groups²¹.

Hodgkinson et al (2017) write that children 17 years of age and younger are excessively affected by poverty, making up 33% of all peoples in the United States living in poverty. Among the children living in poverty and needing mental health care, less than 15% of them receive any services and an even smaller percentage continue with treatments after they are provided for them. This means that they have an increased risk for mental health problems and least likely to

receive quality mental health care. Authors of the study also claim that there is no significant evidence when reporting on problems between those living in poverty versus those who do not¹⁶.

Although not directed at children, the World Health Organization finds that mental health and poverty are closely interrelated. They attribute this association to studies done over the course of the last 20 years and the findings that indicate common mental disorders are twice as frequent among the poor when compared to the rich. Other associated factors link strong mental disorders to people suffering from hunger, individuals living in crowded housing, low education, and unemployment⁸. Figure 2 shows the overlapping link between mental health and poverty.

Figure 2: The Cycles and Factors linking Mental Health and Poverty ⁸



2.4 The Importance of Treatment

Youth and adolescent years are the prime window for treatment and mental health promotion⁴. According to the National Alliance on Mental Illness timing of obtaining treatment is very important, the earlier you get treated the better the long-term outcome is for multiple

factors including education and employment. Treatments include but are not limited to therapies, medication and rehabilitation¹⁵.

Treatments in children can be especially complex so the initial diagnosis step is imperative. This is due in part to nature of children, often experiencing short term episodes of behavior changes and anxiety due to development and society. Diagnosis by doctors starts with examination of the history of both children and their adult care taker as well as analysis via the DSM, Diagnostic and Statistical Manual of Mental Disorders. It is important that after a diagnostic is given, that the individual is followed periodically to see if this indeed is a short-term behavioral problem or long-term psychiatric illness. Treatment is often disregarded by parents due to stigma that surrounds mental disorders, but no treatment can lead to adulthood issues like substance abuse and may even lead to suicide³. Treatment of mental health disorders does, often, lead to recovery, especially in the younger populations. Treatments include psychotherapy, medication, peer support, case management, hospitalization, and more extensive alternative forms of medicine⁵.

Chapter 3: Methods

3.1 Study Design

This analysis uses data from the 2017 National Survey of Children's Health (NSCH). NSCH is a cross sectional telephone survey that collects information on physical and emotional health of children in the United State aged 0 to17 years as well as health-related parent information and questions regarding neighborhoods, quality of care, family interaction, and school experiences²⁶. Participation was voluntary and a total of 58,510 children were included in the survey, which was collected using random digital dial and then stratified by households with children in them²⁶. The survey is broken down into 2 phases, the initial screener and the follow-up topical questions. For this analysis, only Topical data was used, which included both screener information and follow up questions. Of the total surveyed children (58,510), a total of 21,599 participants completed the topical portion of the NSCH survey. This analysis omitted participants under the age of 4 and those who answered 'no but not needed' to the mental health question, leaving 2,723 participants in this study.

3.2 Access to Mental Health Treatment, Poverty and Other Covariates

Access to mental health treatment in this study is defined by the variable "having seen mental health specialist". Participants were asked if their child has received any treatment or counseling from a mental health specialist including psychiatrists, psychologists, psychiatric nurses, and clinical social workers. Possible answer choices to this question were 'yes child has', 'no child has not but needed to', or 'no child has not but did not need to'. For this of this study, only the 'yes' response and the 'no but need' were kept.

Federal poverty level was used to determine if the child is living in an impoverished home. NSCH uses percentages as per the federal poverty level guidelines to determine this.

Levels were stratified as 0-99%, 100-199%, 200-399% and 400% and above. All those between 0-99% were considered as living in poverty¹⁰.

Other variables included in this analysis are race, insurance coverage, and education level of one of the parents or guardians in the household. For race, the detailed variable was used which asked what the race of the child is, and answer choices included ‘white’, ‘black of African American’, ‘American Indian or Alaska Native’, ‘Asian’, ‘Native Hawaiian and Other Pacific Islander’, some ‘other’. Other than ‘white’, ‘black’, or ‘Asian’, all other categories were recoded to be ‘other’. For insurance, participants were asked if the child was currently covered by any sort of insurance or health coverage plan and answered as a ‘yes’ or ‘no’. Education level among reported adults was broken down into ‘less than high school’, ‘high school’, or ‘more than high school’ education. The adult in which education level was reported on is identified by the NSCH as the primary care taker of the surveyed child. If the child lives with an adult who suffers with a mental health disorder is also. Answer choices were limited to ‘yes’ or ‘no’. All children under the age of 3 were excluded from the analysis on the basis that treatment in the US is not yet suitable for children that young³⁰.

3.3 Statistical Data Analysis

Descriptive statistics for the independent, dependent, and covariate variables are presented through frequencies and percentages. Chi-square tests were used to check for association between variables. All p-values less than 0.05 are considered statistically significant.

Logistic regression was used to examine bivariate relationships between having seen a mental health professional and each of the other variables used in the analysis that were considered statistically significant. The unadjusted odds ratios and 95% confidence intervals were reported and presented in Table 2. An adjusted odds ratio was also performed to determine

multivariate relationships and analyze the weight of the variables on each other, this is presented in table 3. All analysis was performed using the SAS software, version 9.4.

Chapter 4: Results

4.1 Descriptive Statistics

Among the total participants included in this study (n=2723) 14.14% of children did not have access to mental health and 82.37% did have access. The average age of all surveyed children was 11 years old. Sex distribution remained about the same between those with access and those without access, with total distribution of sexes being 52% male and 48% female. Around 77.3% of the sample identified as white, 7.6% as black, 2.6% as Asian, and 12.4% as other. Almost 15% of the sampled children live in poverty (*see Table 1*).

Of the 2723 total participants, 13.1% of whites, 34.0% of blacks, 23.1% of Asians, and 16.5% of other ethnic groups did not receive treatment but needed it. Race tested statistically significant ($p < .0001$) for its association with not having seen mental health professional but needed it. For adult care taker education, 21.3% of those with less than a high school education, 18.23% of those with a high school education, and 79.48% of those with more than a high school education did not have access to mental health treatment for their child that was needed. Education also tested statistically significant for association ($p = .0312$). Among those insured, 14.0% did not have access while 27.5% of children who did not have insurance did not have access to treatment. Insurance coverage was statistically significant between those who are insured and those who are not ($p = .0002$). Among children living with an adult with a mental illness, 15.2% did not have access to care compared to 14.05% of children not living with an adult who suffers from a mental illness. However, this did not test statistically significant ($p = .4440$). Lastly, 19.8% of children living below the 100% federal poverty level did not have access to mental health treatment compared to 9.7% of those living above the 400% FPL threshold did not receive treatment that was needed. This was statistically significant ($p < .0001$).

Table 1: Descriptive Statistics of Persons by Having Access to Mental Health Specialist

Participant Characteristics	Yes N=2243 (%)	No, But Needed N=385 (%)	Total N=2723	P-value
Race				
White	1766 (86.87)	267 (13.13)	2033 (77.36)	<.0001*
Black or AA	152 (76.00)	48 (34.00)	200 (7.61)	
Asian	53 (76.81)	16 (23.19)	69 (2.63)	
Other	272 (83.44)	54 (16.56)	326 (12.40)	
Missing	95			
Education				
Less than HS	48 (78.69)	13 (21.31)	61 (2.32)	.0312*
High School	296 (81.77)	66 (18.23)	362 (13.77)	
More than HS	1899 (86.12)	306 (79.48)	2205 (83.90)	
Missing	95			
Insured				
Yes	2166 (85.95)	354 (14.05)	2520 (96.26)	.0002*
No	71 (72.45)	27 (27.55)	98 (3.74)	
Missing	105			
Live With Mentally Ill Adult				
Yes	538 (84.72)	97 (15.28)	635 (24.97)	.4440
No	1640 (85.95)	268 (14.05)	1908 (75.03)	
Missing	180			
FPL				
0-99%	316 (80.20)	78 (19.80)	394 (14.99)	<.0001*
100-199%	346 (81.60)	78 (18.40)	424 (16.13)	
200-399%	617 (83.15)	126 (16.85)	742 (28.23)	
>400%	964 (90.26)	104 (9.74)	1068 (40.64)	
Missing	95			

*p-value based on chi-square test
row percentages used for all statistics

AA – African American; FPL – Federal Poverty Level; HS- High School

4.2 Bivariate Relationships between Access to Mental Health and Other Characteristics

Children from households with income below 100% federal poverty level were more than two times as likely to not have access to mental health treatment they needed when compared to those with income greater than 400% of the FPL (OR = 2.158, 95% CI: 1.503, 3.098). Children from households with income at other federal poverty levels, 100-199% (OR=2.001 95% CI: 1.457, 2.789) and 200-399% (OR= 1.837 95%CI: 1.237, 2.423) were also significantly more likely to not having seen a professional but needing to when compared to those from households with income above 400% FPL (*See table 2*).

African American children were 1.5 times as likely to not have access to mental healthcare they needed when compared to white children (OR=1.528, 95% CI: 1.044, 2.234).

Asian children had a greater disparity and were 2 times as likely to not access to mental healthcare they needed when compared to white children (OR=2.046, 95% CI: 1.100, 3.805)

. A bivariate relationship was also found among those were not insured, with noninsured children being 2 times as likely to not have access to mental healthcare they needed when compared to insured children (OR=2.012, 95% CI:1.241, 3.263). No relationship was found with parent education level. (*See table 2*)

Table 2: Bivariate Association between Not Having Access to Mental Health Professional and other Participant Characteristics (Unadjusted Odds Ratios)

Participant Characteristics	No, But Needed cOR (95% CI)
Race	
White	REF
Black or AA	1.528 (1.044, 2.234)**
Asian	2.046 (1.100, 3.805)**
Other	1.006 (0.776, 1.302)
Education	
Less than HS	1.037 (0.542, 1.983)
High School	1.021 (0.745, 1.399)
More than HS	REF

Insured	
Yes	REF
No	2.012 (1.241, 3.263)**
FPL	
0-99%	2.158 (1.503, 3.098)**
100-199%	2.001 (1.457, 2.789)**
200-399%	1.837 (1.237, 2.423)**
>400%	REF

REF – reference group; CI – confidence interval; cOR – crude odds ratio; AA – African American; HS – high school; FPL – Federal poverty level

** statistically significant

4.3 Multivariate Relationships between Access to Mental Health and Other Characteristics

After controlling for insurance coverage, adult education, race, and living with mentally ill adult, the association between children living in poverty and access to mental health care remained the same. Children from households with income below 100% FPL were still more than two times as likely to not have access to mental healthcare when needed when compared with those with income greater than 400% of the FPL (OR=2.235, 95% CI: 1.564, 3.192). The takeaway is that both unadjusted and adjusted showed profound statistical significance in seeking a mental health professional and the federal poverty level of the child’s household. (*See table 3*)

Table 3: Multivariate Association between Not Having Access to Mental Health Professional and All Other Participant Characteristics (Adjusted Odds Ratios)

Participant Characteristics	No, But Needed aOR (95% CI)
Race	
White	REF
Black or AA	1.520 (1.039, 2.225)**
Asian	2.166 (1.169, 4.016)**
Other	1.204 (0.759, 1.272)
Education	
Less than HS	1.003 (0.511, 1.970)
High School	1.009 (0.728, 1.400)
More than HS	REF

Insured	
Yes	REF
No	2.095 (1.295, 3.389)**
FPL	
0-99%	2.235 (1.564, 3.192)**
100-199%	2.006 (1.426, 2.822)**
200-399%	1.893 (1.414, 2.534)**
>400%	REF

REF – reference group; CI – confidence interval; aOR – adjusted odds ratio; AA – African American; HS – high school; FPL – Federal poverty level

** statistically significant

Chapter 5: Discussion

5.1 Overall Findings

This analysis aimed to examine and further understand the relationship between children living below the federal poverty level and their access to a mental health professional / treatment that may be needed in children between the ages of 3-17. Furthermore, it aimed to see if any other factors including education of parent, race, household history of mental illness and insurance status had any effect on the association. Running statistical analysis on the National Survey for Children's Health data showed statistical significance between seeking mental health professionals and all other covariates.

Mental health disparities don't just target the poor. There are visible disparities in both access and treatment of mental health disorders in minority racial groups, especially the African American population^{17, 23}. Unfortunately, the sample used for the analysis was not ethnically diverse and therefore not generalizable to the US population. However, results from the bivariate and multivariate analysis supported this as those who identified as black or African American children were more than 1.5 times as likely to not receive mental health care they needed when compared to children of white background.

Education level of parents in this study mediates a gap between health literacy and poverty. Education level is often identified as a factor that associates to attitudes towards treatments²⁸. In a study done, every increased level of education, individuals were 15% more likely to see a psychiatrist²⁴. However, this study did not support the idea that education level of a parent might enable the mental health treatment of a child. So even though education level did not show statistical significance after the bivariate analysis, there is still research that depicts the correlation.

Insurance coverage shapes the health of U.S. citizens through indirect customs. It is reported that adults without health insurance are less likely to receive screening and/or preventive services as well as less likely to receive them at recommended frequencies, per the United States Preventive Services Task Force when compared to insured adults¹³. Taking this into account, noninsured children are 2 times as likely to not have access to mental healthcare they needed when compared to insured children (OR=2.012, 95% CI:1.241, 3.263). This significance is consistent with most literature regarding the lack of health obtained when individuals are not covered by any form of insurance.

The strongest association that was linked to not having access to mental healthcare but needing it was poverty. Those who live in poor conditions are not only deprived of money but resources and information as well. Poverty can be ascribed to be both a consequence as well as cause of poor mental health²². Among the children living in poverty and needing mental health care, less than 15% of them receive any services and an even smaller percentage continue with treatments after they are provided for them¹⁶. Although not generalizable due to sample size and other limitations of the study, statistical significance of the analysis is still consistent with literature and past studies.

It was important to see how these variables work alongside each other. Many previous literatures assimilate associations between race and insurance coverage, poverty and race, poverty and education and so on and so forth. The American Psychological Association found that blacks with higher education were less likely to seek mental health services, especially if they have already had previous treatments. This is due in part to medical segregation, blacks, regardless of income or education, often obtain lower quality of care when compared to whites and Asians¹.

5.2 Strengths and Weakness

Strengths of this analysis center around the use of a government run, nationally symbolic data collection tool. Randomization of the telephone process also insures that all areas across the United States are represented. The focus on both the child and care taker's health also provides dimension to the analysis.

The preliminary weakness of this analysis is the use of the NSCH and its self-reported methods. With stigma around mental health and this being a telephone-based survey, there is some response bias that needs to be accounted for. The question that was asked also concerned seeking mental health professionals in the last 12 months, not accounting for prior visits in the early stages for adolescents and not considering if treatment was followed when help was sought for. The biggest limitation of this data set was the very small sample size of those who needed help but did not get it (n=385). This could account for a very large sample error when running logistic regression on variables. Some variables included in the NSCH data would have been ideal to include like age of mother, mental health diagnosis, and access to basic needs like food and shelter. However, these variables had thousands of missing data points and would not have been useful in this analysis.

5.3 Public Health Implications

Results suggest that in a sample of children needing mental healthcare, those living in poverty are more likely to not access it when compared to those living above the federal poverty level. However, the population used in the NSCH data is not diverse in race and poverty level. This is attributable to the use of phone survey limiting who is reached. It is imperative to employ survey tools that can reach more diverse groups of children and their caretakers.

For access to mental health in particular, interventions for children should be readily available outside of a clinical setting. Workers with knowledge on mental healthcare should be

imbedded in the community so that regardless of poverty level, all children can have some form of access to mental health prevention tools and quick interventions. Public health action can also relieve some of the stigma surrounding childhood mental disorders. Awareness and education in schools and via pediatricians can create a safe space for dialogue between caretakers, children, and specialists / teachers / doctors.

5.4 Conclusion

In conclusion, the results suggest a strong relationship between childhood poverty and access to mental health care when it is needed. The association between these two factors increased with increasing levels of federal poverty level. There is a need for public health interventions that will address disparities in access to mental healthcare among children from households with income below the federal poverty threshold. Additionally, more rigorous studies larger or more representative national samples can be used to further examine this public health issue.

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