University of Cincinnati

Date: 11/2/2020

I, Shawna M. Southwick, hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Health Education.

It is entitled:

Mental Health, Health Care Access, Parenting Support, and Perceived Neighborhood Safety Differences by Location, and Demographics among Caregivers and Children in a Midwest Tri-State Area

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38001

Mental Health, Health Care Access, Parenting Support, and Perceived Neighborhood Safety Differences by Location and Demographics among Caregivers and Children in a Midwest Tri-State Area

A dissertation submitted to the Graduate School of the University of Cincinnati in partial fulfillment of requirements for the Degree of

DOCTOR OF PHILOSOPHY IN HEALTH EDUCATION

In the College of Education, Criminal Justice and Human Services

School of Human Services

Health Promotion and Education Program

By

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ABSTRACT

AN ABSTRACT OF THE DISSERTATION FOR THE DOCTOR OF PHILOSOPHY DEGREE IN HEALTH PROMOTION AND EDUCATION, PRESENTED ON November 2, 2020 AT THE UNIVERSITY OF CINCINNATI, CINCINNATI, OH.

TITLE: Mental Health, Health Care Access, Parenting Support, and Perceived Neighborhood Safety Differences by Location and Demographics among Caregivers and Children in a Midwest Tri-State Area

DOCTORAL COMMITTEE: Liliana Rojas-Guyler, PhD, CHES (chair), Tina Stanton-Chapman, PhD, Amy L. Bernard, PhD, MCHES, Bradley R. A. Wilson, PhD.

Study One:

Purpose. Identify differences in child mental health factors, perceived neighborhood safety, and child health care access by demographic characteristics. **Methods.** Secondary data analysis of the 2017 Interact for Health Child Well Being Survey. Primary caregivers (n = 2,757) responded to questions about children. A random-digit dial structured questionnaire was utilized. **Results.** Caregivers reported that less than two-in-ten children (14.5%, n = 398) had good emotional health, 4.1% (n = 112) had *depression*, and 9.1% (n = 250) *anxiety*. Depression was higher among *White*, *female*, and *11-17 years*, and *African American* children *below 100% FPL*. *White* children, age *11-17 years* were diagnosed with anxiety more than *African American* or *Other*. Most caregivers felt their child was *always safe* (62.5%, n = 1,719) with 1.0% (n = 27)

feeling their child was *never-safe* in their neighborhood. Caregiver's reported 98.5% (*n* = 2,705) had *health insurance*, 98.8% (*n* = 2,723) had a *medical home*, 88.3% (*n* = 2,426) received *preventive care* services while 11.7% (*n* = 322) did not. Statistical analyses revealed several differences. **Conclusions.** White, suburban, higher income, or children from married families received diagnosis and treatment for depression and anxiety more than low income, urban, or minority children found to have lower mental health scores. Increased screening for mental health disorders among vulnerable populations needs to be addressed as a priority.

Study Two:

Purpose. Identify differences in child caregiver physical health status, mental health status, level of parent emotional support, and perceived levels of neighborhood safety. **Methods.** Data (*n* = 2,757) from the 2017 Child Well Being Survey were utilized. **Results.** Nearly 7 in 10 caregivers reported their physical health as *very good* or *good* (68.1%, *n* = 1,878). A majority of caregivers reported their mental health as *very good* or *good* (62.2%, *n* = 1,707) and 93.3% (*n* = 2,571) had someone to provide day-to-day parenting emotional support. A majority of caregivers reported neighborhood safety as *always* or *usually safe* (93.9%, *n* = 2,587). Caregivers who were *65 or older*, *female*, *African American*, *unmarried*, *unemployed*, *high school graduates* (or lower), a *guardian* or *other relation* to the child, lived in a *1-adult household*, *below 200% FPL*, or in *urban* or *rural* areas; had lower *physical health* and *mental health* status scores. Neighborhood safety was reported less among caregivers who were *unmarried*, *female*, *African American*, *Hispanic*, *high school graduates* (or less), in *single-adult households*, *below 200% FPL*, or in *urban* settings. Parenting emotional support was lower among those *ages 45-65*, *African American, Hispanic, not married, not employed*, less than *high school education*, in *1 or*

3+ adult households, or living below *200% FLP*. **Conclusions.** Increased levels of perceived parenting socio-emotional support appeared to positively influence caregiver physical and mental health outcomes and perceived neighborhood safety. Additionally, results support efforts to address support as a mediator of caregiver mental and physical health, especially among low-income, urban, and minority caregivers at risk for adverse outcomes.

ACKNOWLEDGMENTS

First and foremost, I want to give a sincere thank you to Dr. Liliana Rojas-Guyler for her courage, compassion, and commitment to a supportive team approach throughout the stages of this project. In the years we have worked together, her wisdom, insight, and integrity have had an impact far beyond the classroom; for that, I am eternally grateful.

Heartfelt gratitude goes out to Dr. Tina Stanton-Chapman for her ongoing support, guidance, and the opportunity to combine health education with early childhood education through a doctoral fellowship. You provided the missing piece to my professional purpose and fueled the passion that will shape my future work to help create a community of healthier, more well-adjusted children.

I also want to sincerely thank Dr. Amy Bernard and Dr. Brad Wilson for accepting the call to be a part of my dissertation committee. Your experience, input, and direction have been invaluable.

A special thank you to Interact for Health for having the Child Well Being survey data available for use and making this important population data a priority.

To all the friends, family, and friends who became family that never stopped cheering me on throughout this process. You've carried me on your shoulders and in your hearts, and I am beyond blessed to have each and every one of you in my corner. Your unwavering faith in me has been pivotal.

Finally, to my father, Steve Southwick. Thank you for holding up your end of our graduation deal and teaching me the value of persistence and resilience. I am thankful we are both here to see this day come to fruition. And for my mother, Linda Southwick, who is not here to witness this milestone, I know she has had a heavenly hand in my achievements. I can only hope my grace, grit, and growth have made you both proud.

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MANUSCRIPT ONE

Differences in Mental Health, Health Care Access Factors, and Geographical Location among Children in a Midwestern Tri-state Area

Introduction

Anxiety and depression represent two of the most predominant mental health disorders that affect children (World Health Organization [WHO], 2019). Health insurance inadequacy and lack of preventive care access contribute to undiagnosed, unaddressed, and increasing anxiety and depression rates among school-aged children with a myriad of negative consequences potentially extending into adulthood (Kruger, Jutte, Franzini, Elo, & Hayward, 2015). Mental health disorders are a substantial public health concern for several reasons including early onset, rising prevalence, and the associated negative long-term impact on a child's life (Kutcher & Venn, 2008). Neighborhood location and household socioeconomic status (SES) have important implications regarding a child's overall health and well-being, and have been found to have a significant influence over their behavioral outcomes (Singh & Ghandour, 2012). Understanding how geographical and neighborhood factors are associated with mental health outcomes among children can help bridge existing gaps in health education services for children and their families. Therefore, this study aims to investigate the association of mental health factors, health care access, and demographic characteristics among a representative sample of children in a Midwestern Tri-state region.

Child Mental Health

'Mental health disorders' among children are described as, 'serious changes in the way a child typically learns, behaves, or handle their emotions, causing distress and problems getting through the day' (Centers for Disease Control & Prevention [CDC], 2019). Mental health disorders denote the most shared cause of disability in children in the United States (U.S.), affecting roughly 15-20% of school-aged children (Kutcher & Venn, 2008). The CDC reports

that in the U.S. one in six children ages 2-8 years (17.4%) has a diagnosed mental health disorder (2019).

Depression is characterized by 'persistent sad or irritable mood,' affecting 3.2% of children aged 3-17 years (Xhu, Haegle, & Healy, 2019). It is not uncommon for children with depression to also have other mental health diagnosis at the same time (CDC, 2019). The CDC reports that approximately three in four children (78.3%), ages 3-17 years, also have a co-occurring anxiety disorder (2019). Anxiety is described as 'excessive fear or worry,' with a reported 7.1% of U.S. children, ages 3-17 years, having this diagnosis (Xhu, Haegle, & Healy, 2019). Often presenting by age 11, anxiety disorders have been described as the most prevalent mental health issues among children, negatively impacting social and academic function as well as their overall health and well-being (Reardon, Spence, Hesse, Shakir, & Creswell, 2018).

Health Care Access

According to Kutcher and Venn (2008), 70% of mental health disorders present before age 25; thus, early identification, intervention, and adequate treatment are critical components to improving social, behavioral, educational, functional and overall health outcomes among U. S. school-aged children. In the absence of early diagnosis and appropriate services, the most socially vulnerable children face an increased risk of continued anxiety and depression throughout their lifespan (Vaccaro, Zarini, & Huffman, 2019).

Effective intervention in the early stages of mental health disorders, and throughout, has been shown to rapidly improve both mental health and functioning of youth, possibly mitigating how much chronic depression and anxiety can negatively impact one's outcomes, including outcomes in interpersonal relationships, educational success, gainful employment and overall health outcomes (Parker, et al, 2016).

The literature supports that counseling (or psychotherapy) is effective in treating depression and anxiety disorders and suggests it may offer some sustained effects over time (Cuijpers et al., 2013). All children, especially within vulnerable populations, should be screened for these diagnoses and offered treatment as these conditions can significantly affect academic success and numerous domains of psychosocial functioning (Bornheimer, Acri, Gopalan, & McKay, 2018). Many children living within the poverty level are not screened or adequately treated for their mental health conditions and CDC (2019) data suggest poverty level and age negatively impact the odds of a child receiving treatment for anxiety and depression. Approximately 20% of U.S. children have a mental health condition substantial enough to necessitate treatment; however, 80% never access services or complete mental health treatment (Borhheimer, Acri, Gopalan, & McKay, 2018). Bornheimer and colleagues (2018) state this barrier to services is more prevalent among at risk children living in poverty with numerous neighborhood stressors and limited resources.

According to Starfield and Shi (2004), a 'medical home' is considered a source of primary care which offers more equity in healthcare across population subgroups and a reduction in overall health disparities. Having a regular source of care was found to be the most important factor related to receiving preventive care services and improving health outcomes, even after considering financial status, the effect of demographics, and continuity of care needs (Starfield & Shi, 2004). Preventive health care services have been found to enable people to lead longer, healthier lives since using them proactively reduces the incidence and prevalence of illness and disability in all demographics; however, it is often only utilized by higher income, married families (Holden, Chen, & Dagher, 2015).

Demographic Determinants of Health

Access to preventive care, insurance adequacy, and neighborhood adequacy all disproportionally affect minority children from poor households (Vaccaro, Zarini, & Huffman, 2019). Low SES, rural, White children with inadequate health insurance appear to receive less preventive care services than do urban, racial/ethnic minority children of the same status (Holden, Chen, & Dagher, 2015). Holden and colleagues (2015) believe this may be explained by a greater density of racial and ethnic minorities in urban areas with a larger concentration of health care services that offer effective interventions less commonly found in moderately dense, rural areas.

Higher neighborhood income has been associated with better health outcomes (even above individual resources) while lower income neighborhoods have been associated with poorer health outcomes (Robinette, Charles, & Gruenewald, 2017). The effect of poor neighborhood conditions on child health and behavior is profound and this association disproportionally affects low SES, urban, minority youth; even when controlling for household SES (Singh & Ghandour, 2012).

Researchers have identified that children living in less favorable social conditions have a 3.1% increased risk of Serious Behavioral Problems (SBP) which is four times higher among minorities living in disadvantaged areas (Singh & Ghandour, 2012). A meta-analysis looking at differences in prevalence rates of common mental health disorders by urban versus rural areas reported that urban environments were associated with an increased prevalence of psychopathology, such as anxiety disorders and mood disorders (Peen, et al., 2010).

Aims of study

There are two aims in this study. The first aim is to describe *mental health factors* (ever told child has depression and/or anxiety, perceived mental health status, perceived safety) and *health care access characteristics* (insurance status, preventive care in prior 12 months, received mental health care in prior 12 months, having a usual and appropriate source of care). The second aim serves to identify differences in *mental health factors* (depression/anxiety diagnosis, perceived mental health status) and *health care access characteristics* (having a medical home, delaying physical and/or mental health care) by *demographics* (sex, age, race, ethnicity, poverty status, and rural/urban/suburban location). To address the aims of the study the following research questions are posited:

Research Questions

1. What proportion of children have anxiety and/or depression diagnoses?
2. What is the mental health status of children as reported by caregivers?
3. What proportion of caregivers perceive the children are safe in their communities?
4. What proportion of children have health insurance?
5. What proportion of children received preventive care in the prior year?
6. What proportion of children delayed health care in the prior year and what type of care was delayed?
7. Are there differences in lifetime anxiety and depression diagnoses by demographic characteristics such as age, sex, race, ethnicity, poverty status or location?
8. Are there differences in perceived child mental health status by demographic characteristics such as age, sex, race, ethnicity, poverty status or location?

9. Are there differences in health care access (such as having a medical home, delaying physical or mental health care) by demographic characteristics such as age, sex, race, ethnicity, poverty status or location?

Methods

Study Design

This study was a secondary data analysis of a cross-sectional sample of respondents to the 2017 Child Well Being Survey. The random sample was representative of the region.

Procedures

The Child Well-Being Survey (CWBS) was funded by Cincinnati Children's and Interact for Health (IH), a community health non-profit organization, with support from the United Way of Greater Cincinnati (Interact for Health, 2019a). Phone survey interviews were conducted via landline phones (1,056 calls) and cell phones (1,701 calls) during the period of March 5, 2017 and August 9, 2017 by the Institute for Policy Research at the University of Cincinnati. All data collection was completed by trained personnel (Interact for Health, 2019b). The dataset was made available to researchers upon request by the Interact for Health Program Officer. All primary data collection procedures were reviewed by the Institutional Review Board (IRB) at the University of Cincinnati. This secondary data analysis was submitted for IRB review following proposal approval by committee (See Appendix A).

Participants

A random sample of 2,757 primary caregivers aged 18 or older who lived in the Greater Cincinnati area were selected, interviewed by phone and asked questions about a child selected from the household (child with the closest birthday to the date of the survey). The CWBS sought

'primary caregivers' (defined as the adult in the household who has the most knowledge of the target child's health and health care). The random digit dial phone survey reached Greater Cincinnati area residents residing in the 22 counties that make up what is called the tri-state region (Ohio, Kentucky, and Indiana). The counties that comprise this region include: Butler, Clinton, Adams, Brown, Warren, Clermont, Highland, Boone, Campbell, Grant, Kenton, Bracken, Carroll, Owen, Pendleton, Franklin, Ripley, and Switzerland (Interact for Health, 2018). The region was stratified into five geographical sub-regions to ensure representativeness: The City of Cincinnati, Hamilton County (outside of the city of Cincinnati), Ohio Suburban Counties (Butler, Clermont, and Warren), Northern Kentucky counties (Boone, Kenton, and Campbell), and the rural counties of Ohio, Kentucky, and Indiana (included in the Greater Cincinnati/Northern Kentucky region).

Instrumentation

A 76–item survey was developed by Interact for Health to assess the well-being of children in the Greater Cincinnati region. A selection of 16 items from the original survey were chosen in order to answer the research questions of the present study. Specifically, the following topics were examined: child mental health, health care access characteristics, and child demographics.

Child Mental Health

Child mental health status was measured by assessing: a) depression diagnosis; b) anxiety diagnosis; c) perceived mental health status; and d) perceived safety of child in the community. Specifically, participants were asked if they had ever been told the child had anxiety and/or depression (yes/no). They were also asked, "In general, how would you describe your child's mental or emotional health?" with possible answers on a 5-point Likert-type scale (1 = excellent,

5 = poor). Lastly, participants were asked how often they felt their child was safe in their community or neighborhood, with answer choices ranging from 1 = never to 4 = always.

Health Care Access Characteristics

A total of six variables were utilized to assess health care characteristics. These included: a) having a usual and appropriate place for health care (yes/no); b) having received preventive health care in the prior 12 months (yes/no); c) having received treatment or counseling by a mental health professional in the prior 12 months (yes/no); d) having delayed health care in the prior 12 months (yes/no); e) type of care delayed (medical, dental, mental/behavioral, other); and f) insurance status (pre-recoded variable, yes/no).

Child Demographics

A total of six items measured demographic characteristics: a) child sex (boy/girl); b.) child age (number of years), c) child race (White, African American, Asian, Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, Other); d) child Hispanic/Latino ethnicity (yes/no); e) child poverty status (pre-recoded variable, yes/no); and f) geographical sub-region of residence (1= City of Cincinnati, 2 = Hamilton County, 3 = Ohio Suburban Counties, 4 = Northern Kentucky counties, and 5 = Rural counties of Ohio, Kentucky, and Indiana).

Data Analysis

Sample data were analyzed using SPSS for Windows version 27. The dataset was first evaluated for errors or omissions. Missing data were then coded as such and excluded from analyses. The dataset variables were also evaluated to establish homogeneity of variance and normality of distribution. For this sample, an *alpha* confidence interval of .05 was used for statistical significance and *alpha* = .1 for trend reporting. Recoding was conducted as needed to associate higher scores with healthier indices (e.g. mental health ratings of excellent were

recoded from the original value of 1 to a value of 5 and ratings of 5 were recoded to a value of 1). As needed, data were collapsed into categories for analyses (e.g. age was collapsed into categories; sample area was collapsed from five categories into three categories that combined three suburban areas into one and renamed *Geographical Sample Area.* Standard descriptive statistics were used for all variables to describe the sample.

Research questions one through six (mental health and health care factors), were answered using descriptive statistics (frequency, percent, central tendency). Research question seven, differences in anxiety/depression by demographic factors, were answered with a series of Chi-square tests. Research question eight, differences in mental health status by demographic characteristics, was answered using Kruskal-Wallis Chi-square testing instead of the originally proposed ANOVA testing due to skewed distribution of mental health scores, as it violated the homogeneity of variance assumption. For statistically significant findings where there were more than two dependent variables, a Post-hoc Tukey test was conducted. All significant differences were followed by effect size testing (e.g. Cramer's V for Chi-square, and Dunn's for Kruskal-Wallis tests). According to Cohen (1988), effect sizes are small when d = .1, medium if d = .3, and large if d = .5. Lastly, research question seven, differences in health care access factors by demographic characteristics, was answered by a series of Chi-square tests.

Results

Demographics

Overall, 2,757 children were represented in the sample by respondents/caregivers. The majority of caregivers were the birthparent of the child. Children ranged in age from under 1 year of age to 17 years of age with a mean age of 9.16 (*SD* = 5.37). The sample was

approximately half girls and half boys. The majority were White (71.8%, *n* = 1,949), identified as non-Hispanic, and lived above 200% of the Federal Poverty Level (FPL). Approximately 40% lived in urban areas, and another 43% in suburban areas (See Table 1 for details).

Child Mental Health

General Mental Health Status. Average emotional health rating reported was 4.30 (*SD* = .927) on a 5-point scale ranging from 1 = poor to 5 = excellent. A large majority of children received an emotional health rating of excellent (55.0%, *n* = 1,514) or very good (25.5%, *n* = 701) by their caregivers. Less than two in ten children were rated as having good emotional health (14.5%, *n* = 398) and a small proportion reported their emotional health as fair (4.1%, *n* = 112) or poor (1.0%, *n* = 27). See Table two for full details on mental health status variables. ***Depression.*** Respondents reported that 4.1% (*n* =112) of children in the sample had been told by a doctor that they had depression. ***Anxiety.*** Caregiver reporting indicated that 9.1% (*n* = 250) of children had been diagnosed with anxiety.

Perceived Child Safety

Reported child safety was assessed using a 4-point scale ranging from 1 = never safe to 4 = always safe with an average score of 3.56 (*SD* = .637). A large majority of caregivers reported they felt their child was either *always safe* (62.5%, *n* = 1,719) or *usually safe* (31.6%, *n* = 868) in their communities. A small percentage of respondents reported their child was either *sometimes safe* (5.0%, *n* = 137) *or never safe* (1.0%, *n* = 27).

Depression by Demographic Factors

Chi-square analyses were conducted to determine if there were differences in lifetime depression diagnoses by demographic characteristics such as age, sex, race, ethnicity, poverty

status or geographic location. ***Age***. Results showed a statistically significant relationship between having a depression diagnosis and child age categories. [$X^2(2, 2599) = 65.10$, $p = .001$]. Those between the ages of *11-17 years* appeared more likely to have a depression diagnosis (83.9%, $n = 94$) while children age *1-5 years* were the least likely to have the same diagnosis (0.9%, $n = 1$). A small effect size (Cohen, 1988) was observed, Cramer's V = .079. ***Sex***. A statistically significant relationship between depression and a child's sex was identified [$X^2(1, 2749) = 5.85$, $p = .016$]. It appeared *girls* were more likely to receive a diagnosis of depression, (59.8%, $n = 67$) whereas, *boys* were less likely to receive the same diagnosis (40.2%, $n = 45$). A small effect size was found (Cohen, 1988). Cramer's V = .1. ***Race***. A statistically significant relationship between children having a depression diagnosis and a child's race was found [$X^2(2, 2712) = 6.67$, $p = .036$]. Those reporting race as *Other* (14.4%, $n = 16$) were less likely to receive a depression diagnosis than their *African American* and *White* counterparts. Children identifying as *African American* (17.1%, $n = 19$) were significantly less likely to have a depression diagnosis than *White* children (68.5%, $n = 76$). A small effect size was observed (Cohen, 1988). Cramer's V = .1. ***Ethnicity.*** No statistically significant relationship was found between having a depression diagnosis and a child's reported ethnicity [$X^2(1, 2738) = 1.21$, $p = .271$]. ***Poverty***. A statistically significant relationship between depression diagnosis and poverty was found [$X^2(2, 2434) = 13.61$, $p = .001$]. Analysis revealed children *above 200% FPL* were more likely to have a depression diagnosis (46.9%, $n = 45$) and those *at or below 100% FPL* (24.0%, $n = 23$) were least likely to have been diagnosed with depression. A small effect size was noted (Cohen, 1988). Cramer's V = .1. ***Geographical sample area.*** There was no statistically significant association between depression diagnosis and geographical location [$X^2(2, 2201) = 1.843$, $p = .398$].

Anxiety by Demographic Factors

Chi-square analyses were conducted to determine if there were differences in lifetime depression diagnoses by demographic characteristics such as age, sex, race, ethnicity, poverty status or geographic sample area. ***Age***. Results revealed a statistically significant relationship between anxiety and age [$X^2(2, 2596) = 81.59$, $p = .001$]. Children between *11-17 years* were more likely to have an anxiety diagnosis (71.8%, $n = 178$) than those in the same age range who did not have an anxiety diagnosis (45.6%, $n = 1{,}071$). Children ages of *1-5 years* were the least likely age category to have been diagnosed with anxiety (4.8%, $n = 12$). This diagnosis among children ages *6-10 years* fell in the middle (23.4%, $n = 58$). A moderate effect size was observed (Cohen, 1988). Cramer's V = .2. ***Sex***. No statistical significance was found between a diagnosis of anxiety and sex among children [$X^2(1, 2746) = .038$, $p = .846$]. ***Race.*** A relationship was found between anxiety diagnoses and race [$X^2(2, 2709) = 21.54$, $p = .001$] with children identifying as *White* (77.1%, $n = 189$) considerably more likely to have been diagnosed with anxiety than *African American* children (10.2%, $n = 25$). Those identifying as *Other* (12.7%, $n = 31$) received an anxiety diagnosis more frequently than *African American* children but less frequently than children identifying as *White*. A small effect size was noted (Cohen, 1988). Cramer's V = .1. There was no statistical significance was found between having an anxiety diagnosis and ***ethnicity*** [$X^2(1, 2735) = 0.68$, $p = .409$], a child's reported ***poverty*** level [$X^2(2, 2430) = 0.79$, $p = .673$], or by ***geographical sample area*** [$X^2(1, 2735) = 4.79$, $p = .091$].

Differences in Perceived Mental Health Status by Demographics

Age. Kruskal-Wallis Chi-square testing showed that mental health status differed by age [$X^2(2, 2598) = 143.09$, $p = .001$]. Mental health ratings ranged from 1= *poor* to 5= *excellent*. Older children were more likely to have a lower mental health status (MHS) rating ($M = 4.10$,

SD =.993) than those aged *6-10 years* (*M* = 4.24, *SD* = .950), while children age *1-5 years* (*M* = 4.61, *SD*=.695) were more likely to have higher MHS rating than the other two age categories. A post hoc pairwise comparison (Dunn test) showed that all groups were statistically significantly different from each other. ***Sex.*** No statistically significant difference was found by sex [X^2(1, 2746) = .044, *p*=.834]. ***Race.*** Mental health status was found to differ by race [X^2(2, 2709) = 12.13, *p* = .002]. Dunn test for post hoc pairwise comparison showed that *White* children received the highest mean score (*M* = 4.34, *SD* = .903) which was significantly higher than *African American* children (*M* = 4.21, *SD* = .996, *p* = .022) and significantly higher than those identifying as *Other* (*M* = 4.15, *SD* = 1.100, *p* = .029). ***Ethnicity.*** No statistically significant difference was found by ethnicity [X^2(1, 2746) = .044, *p* = .834]. ***Poverty.*** Differences were noted between MHS and income level [X^2(2, 2432) = 40.17, *p* = .001]. A Dunn post hoc test revealed that children *above 200% FPL* had the highest mean score (*M* = 4.39, *SD* = .847) which was significantly higher than those in both the lowest income category of *100% FPL and below* (*M* = 4.08, *SD* = 1.042, *p* = .001) and those reporting middle income of *between 100% and 200% FPL* (*M* = 4.15, *SD*= 1.037, *p* = .001). ***Geographical sample area.*** No statistically significant difference was appreciated between a child's MHS and their geographical location [X^2(2, 2100) = 1.99, *p* = .549].

Health Care Access

Health insurance. Respondents reported that 98.5% (*n* = 2,705) of children in the sample had health insurance coverage while only 1.5% (*n* = 40) of caregivers reported that their child did not have health insurance coverage. ***Preventive care treatment.*** Caregivers reported that 88.3% (*n* = 2,426) of their children received preventive care treatment in the prior 12-month period while 11.7% (*n* = 322) reported that their child did not receive any preventive care

treatment. ***Medical home.*** Caregivers reported that 98.8% of children (n = 2,723) had a place where they usually went when the child was sick or needed health advice. ***Delayed care***. Caregivers reported that 6.1% (*n* =169) of their children delayed health care in the prior 12-month period while 93.9% (*n* = 2,585) reported that their child did not delay care. Of those reporting delaying care, 169 were asked a follow up question to determine what type of healthcare was delayed in the past 12 months. The respondents had five category choices (see Table 3). The top three types of care delayed were: *medical care* in which 41.1% (*n* = 69) of respondents reported their children had a delay in care. *dental care* where 25.6% (*n* = 43) reported a delay in their child's care. *Mental/behavioral health care* where 14.9% (*n* = 25) were found to have a delay in care. Descriptive data tables revealed that 13.1% (*n* = 22) of children had a care delay in *two or more services.*

Differences in Health Care Access by Demographics

Medical home. Chi-square tests of independence were performed on all demographic characteristics to determine whether they were associated with having a medical home. ***Age.*** Analysis revealed there was no statistically significant difference found between having a medical home and age among children [$X^2(2, 2737) = .523$, $p = .770$]. ***Sex.*** A statistically significant difference was found between having a medical home and sex [$X^2(1, 2746) = 4.55$, $p = .025$]. *Boys* (71.4%, *n* = 20) were more likely to lack a medical home than *girls* (28.6%, *n* = 8). A small effect size was noted with a Cramer's V lower than .1 (Cohen, 1988). No statistically significant difference was found between having a medical home and child ***race*** [$X^2(1, 2712) = 2.47$, $p = .093$], ***ethnicity*** [$X^2(1, 2736) = 1.94$, $p = .185$], ***poverty level*** [$X^2(1, 2431 = .455$, $p = .322$], or child ***geographical sample area*** [$X^2(2, 2099) = 1.94$, $p = .185$].

Differences in delayed medical care by demographic characteristics

Age. A statistically significant relationship was found between a delay in medical care and age [X^2 (2, 2,739) = 7.38, p = .025]. The age group of *0-5 years* (21.9%, n =37) was significantly less likely to have a delay in medical care than the *6-12 years* category (36.7%, n = 32) or those children between ages *13-17 years* (41.4%, n = 70) who were most likely to have delayed care. A small effect size was noted with a Cramer's V of .033 (Cohen, 1988). No statistical significance was found between having a delay in medical care and a child's ***sex*** [X^2(1, 169) = .408, p = .316], ***race*** [X^2 (2, 165) = .1.82, p = .402]***, ethnicity,*** [X^2(1, 166) = .063, p = .802]***, poverty,*** [X^2(2, 148) = 1.87, p = .392], or ***geographical sample area.*** No statistical significance was found between having a delay in medical care and where a child lives [X^2(2, 135) = 2.63, p = .259].

Differences in Delayed Mental/Behavioral Health Care by Demographics

Chi-Square tests of independence were conducted to see if a delay in child's mental/behavioral care was associated by demographic variables. No statistical significance was noted between having a delay in mental/behavioral care and ***age*** [X^2(2, 169) = 3.47, p = .177], ***sex*** [X^2(1, 169) = .011, p = .916], ***race*** [X^2(1, 167) = .1.76, p = .185], ***ethnicity*** [X^2(1, 166) = .797, p = .372], ***poverty level*** [X^2(2, 148) = 4.21, p = .122], or by ***geographical sample area*** [X^2(2, 135) = 2.91, p = .234].

Discussion

The present study sought to find out what proportion of children were given an anxiety and/or depression diagnosis within the prior 12-months Results showed that a minority of children had received a diagnosis of depression as well as anxiety, with anxiety diagnosed at just

over twice the reported rate of depression. According to the World Health Organization (2019) anxiety and depression represent two of the most prevalent mental health disorders affecting children. It appears that children were more likely to be diagnosed with anxiety than depression. This is supported by previous research which indicated that anxiety disorders are the most prevalent mental health issues, often affecting children by age 11 (Reardon, Spence, Hesse, Shakir, & Creswell, 2018). Data analysis indicated a minority of children were rated as having fair or poor emotional health. Literature reflects this is more often the case among children living in urban environments where there is a higher prevalence of mental health conditions, such as anxiety and depression disorders (Peen, et al., 2010). When asked whether they felt their children were safe within the community, the minority of caregivers felt their children were sometimes or never safe. Studies which examined neighborhood conditions in relation to child mental health outcomes noted that reduced neighborhood safety was associated with increased negative mental health symptoms (Butler, Kowalkowski, Jones, & Raphael, 2012).

Results showed a minority of children did not have health insurance coverage as reported by their caregivers. Barriers to coverage and services were more common among children living in poverty with limited resources and substantial neighborhood stressors (Bornheimer, Acri, Gopalan, & McKay, 2018). Results regarding preventive care show that a minority of children did not receive these services in the past year. Research indicated that preventative health care can decrease the incidence and prevalence of disease and disability in every demographic, yet, these services were mostly accessed by higher income, married households (Holden, Chen, & Dagher, 2015). This finding could explain why higher neighborhood income has been associated with better health outcomes while lower income neighborhoods have been linked with poorer health outcomes (Robinette, Charles, & Gruenewald, 2017).

Further, a minority of children had a more substantial delay in medical care services than in dental care or mental/behavioral care services with a small number reported to have a delay in two or more of these services. Research by Vaccaro, Zarini, and Huffman (2019) revealed that early intervention and treatment is critical to mitigate the risk of lifelong depression and anxiety as well as to improve functional, social, and educational health outcomes in socially vulnerable, school-aged children. Literature supports that in order to offset disruptions in their psychosocial and academic functioning, all children must be screened for such mental health disorders (Bornheimer, Acri, Gopalan, & McKay, 2018).

This study asked caregivers if there were differences in their child's lifetime anxiety and depression diagnoses by demographic characteristics such as age, sex, race, ethnicity, poverty status or geographic location. Children more likely to have received an anxiety diagnosis were White and between 11 and 17 years of age (no differences were found by sex, ethnicity, poverty level, or geographic location) and those more likely have received a depression diagnosis were White, girls, between 11 and 17 years of age and living above 200% FPL (no difference was found by ethnicity). Literature substantiated that White, urban, insured families who had a child with more severe mental health issues and a positive caregiver perception of mental health services, improved the likelihood of accessing treatment for their child (Reardon, Harvey, Baranowska, O'Brien, Smith, & Creswell, 2017).

Differences in perceived child mental health status were found by demographic characteristics such as age, sex, race, ethnicity, poverty status or location were assessed. Results indicate that African American children, ages 11-17, living below 100% FPL were more likely to have a lower MHS rating (with no difference found by sex, ethnicity, or geographic location). Research by Singh and Ghandour (2012) revealed that minority children living in less favorable

social conditions have a four-fold increased risk of serious behavioral problems, including anxiety and depression. Literature supports that at-risk youth with limited resources and numerous neighborhood stressors are among the 20% of U.S. children with a mental health condition significant enough to warrant treatment but 80% never access care or complete mental health treatment (Bornheimer, Acri, Gopalan, & McKay, 2018).

Similarly, differences in health care access (such as having a medical home, delaying medical or mental/behavioral health care) were found by demographic characteristics such as age, sex, race, ethnicity, poverty status, and geographic location. Boys were more likely to not have a medical home than girls with no statistically significant difference found between the remaining demographic variables measured. Children age 0-5 years old were more likely to have a delay in medical care with no statistically significant difference appreciated between the other demographic characteristics. There were no statistically significant differences found within any demographic for a delay in mental/behavioral health care. It is critical that barriers to health care access and treatment, especially regarding mental health, are proactively addressed for early identification and intervention of mental health conditions among school aged children. Wait times, ability to get referrals, financial cost, social stigma, scheduling flexibility for family circumstances, caregiver ability to identify mental health concerns, as well as parent perceived negative attitudes from others all serve as barriers to seeking necessary mental health treatment (Reardon, Harvey, Baranowska, O'Brien, Smith, & Creswell, 2017). Reardon and colleagues (2017) further elaborated that targeted approaches to ameliorate navigational challenges of the help-seeking process and increasing public health knowledge surrounding childhood mental health concerns is also responsible for reducing the barriers caregivers face in seeking treatment for their child.

Limitations

Study limitations include that data were obtained via a telephone survey which inherently limits it to caregivers who had a phone and researcher understanding that the person on the phone answering as the primary caregiver was subjective in nature. A major limitation of this study was the potential for caregiver reporting bias. Participants may have chosen more socially desirable responses, given the sensitivity of questions asked. Since this study was conducted using a large sample size and random digit dial assignment of the area, results are considered generalizable to the local area. Consideration must also be given to the intrinsic limitations of a secondary data analysis as the data available for analysis were limited to the original survey questions posed.

Conclusions and Recommendations

The Centers for Disease Control (2019) supported that poverty level and age negatively affect the chances of a child receiving treatment for anxiety and depression. Despite data reflecting that White, suburban, higher income children from married families receive an increased level of diagnoses and treatment for depression and anxiety; low income, urban, minority children were found to have lower mental health status scores which is often overlooked, underdiagnosed, and undertreated. Numerous bodies of literature repeatedly support that early intervention for mental health disorders among school-age children carries a distinct potential to mitigate the long-term, negative impacts that untreated depression and anxiety have on all aspects of a child's interpersonal, educational, employment, and health outcomes.

This dichotomy among child demographics reflects an inherent need for expanded community health efforts to increase mental health awareness and screening capacity, especially among poorer urban and rural communities where social conditions, stigma, and perceived

barriers to access may obscure the availability and perceived necessity for child mental health screenings.

All children deserve access to all the skills and tools they need to become their best selves and positively contribute to their communities. Health Educators can help by working to reduce the stigma surrounding mental health care and increase awareness as to the importance of early mental health intervention. Further, they can create and implement programs addressing barriers to mental health screening availability and work with community agencies to expand access, especially within at-risk populations that are often overlooked.

Frederick Douglass, an 1800's abolitionist excellently stated, "it is easier to build strong children than to repair broken men" (Mapp, 2019, p. 145). While we cannot give a child back their childhood, we can improve it by recognizing mental health issues at their genesis. It is far more productive, cost effective, and humane for health educators to create early intervention strategies that explore all health education measures to create wide-reaching mental health education programs.

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Table 1. Demographic Variables

Variables		*n*	Percent
Age			
0-5		837	30.5
6-12		974	35.5
13-17		931	34.0
	Total	2,742	100.0
Sex			
Boy		1,413	51.4
Girl		1,338	48.6
	Total	2,751	100.0
Race			
White		1,949	71.8
Black/African American		548	20.2
Other race		217	8.0
	Total	2,714	100.0
Ethnicity			
Hispanic		77	2.8
Non-Hispanic		2,663	97.2
	Total	2,740	100.0
Geographical Sample Area			
Urban		848	40.3
Suburban		911	43.5
Rural		344	16.4
	Total	2,103	100.0
Federal Poverty Level			
100% and below FPL		439	18.0
Between 100% and 200% FPL		436	17.9
Above 200% FPL		1,560	64.1
	Total	2,435	100.0
Caregiver relationship to child			
Birth parent		2,360	85.7
Relative		208	7.6
Guardian		175	6.4
Other		11	.4
	Total	2,754	100.0
Household size			
Two		210	7.7
Three		781	28.5
Four		872	31.8
Five or more		881	32.1
	Total	2,744	100.0
Children in household			
One		1,184	43.1
Two		880	32.1
Three or more		681	24.8
	Total	2,745	100.0

Note: Missing data excluded

Table 2. Mental Health Variables

Variables		*n*	Percent
Caregiver General Mental Health Status rating for child			
Excellent		1,514	55.0
Very Good		701	25.5
Good		398	14.5
Fair		112	4.5
Poor		27	1.0
	Total	2,752	100.0
Ever received Depression Diagnosis			
Yes		112	4.1
No		2,643	95.9
	Total	2,755	100.0
Ever received Anxiety Diagnosis			
Yes		250	9.1
No		2,502	90.9
	Total	2,752	100.0
How often child is perceived being safe in neighborhood			
4 = Always safe		1,719	62.5
3 = Usually safe		868	31.6
2 = Sometimes safe		137	5.0
1 = Never safe		27	1.0
	Total	2,751	100.0

Note- Missing data excluded

Table 3. Health Care Access Variables

Variables		*n*	Percent
Insurance Status			
Insured		2,705	98.5
Not insured		40	1.5
	Total	2,745	100.0
Received preventive health care in prior 12 months			
Yes		2,426	88.3
No		322	11.7
	Total	2,748	100.0
Has a usual and appropriate medical home			
Yes		2,723	98.9
No		29	1.1
	Total	2,752	100.0
Delayed health care in prior 12 months			
Yes		169	6.1
No		2,585	93.9
	Total	2,754	100.0
Type of health care delayed in prior 12 months			
Medical care		69	41.4
Dental care		43	25.6
Mental/Behavioral care		25	14.9
Some other service		9	5.4
Two or more services		22	13.1
	Total	2,588	100.0

Note- Missing data excluded

MANUSCRIPT TWO

Differences in Physical and Mental Health Status, Parenting Emotional Support, and Perceived Neighborhood Safety among Child Caregivers in a Midwestern Tri-State Area

Introduction

Health is determined by the union of biopsychosocial and biomedical factors, which can be highly influenced by an individual's environmental conditions (Verhoef, Plagnol, & May, 2018). Wellness has been defined as, "the attitudes and active decisions made by an individual that contribute to positive health behaviors and outcomes" ("Defining Health Promotion", n.d., n.p.). Numerous bodies of literature reinforce that subpar levels of primary caregiver wellness (both physical and mental) are associated with maladaptive parental coping skills, which have been reported to have a negative impact on their child's mental health outcomes (Jackson, Frydenberg, Liang, Higgins, & Murphy, 2015). The term, "parental stress" (or, "parenting stress") defines an inconsistency between the availability of resources and the demands that accompany the parenting role (Skreden et al., 2012). Huang et al. (2014) reported that primary caregivers with higher levels of parental stress tend to experience more mood instability and display a more negative parenting style which, can also adversely influence children's behavioral and cognitive outcomes along with their coping abilities. Further, a primary caregiver's level of perceived social support can serve as a buffer to the toxic effects parental stress and act as a protective factor against the negative parent-child outcomes that may result from these increased levels parent stress. Therefore, this study aims to investigate the association of caregiver physical and mental health factors, parenting emotional support, perceived neighborhood safety, and demographic characteristics among a representative sample of primary caregivers of children in a Midwestern Tri-state region.

Caregiver Support

Littlewood, Swanke, Strozier, and Kondrat (2012) define social support as, "formal and informal relationships with individuals and groups through which a person receives the

emotional, cognitive and material support necessary to master a stressful experience" (p. 61). Skreden and Colleagues (2012) found that individuals reporting increased levels of parenting stress tended to engage in more abrasive parenting styles and had less involvement with their children. Increased perception of social support from neighbors, family, friends, etc. forms a "support network" that appears to reduce this parenting stress (Arikan et al., 2019). This support is crucial given the numerous bodies of research stating that experiencing high parenting stress levels and living with a lack of social support are both associated with negative mental health outcomes for caregivers and their children (Huang et al., 2014). This is especially true among parents living in low socioeconomic status (SES) neighborhoods where there is a strong association between low income and high parenting stress as levels of education, income, and resources are frequently reported as marginal within such social conditions. Social support has been shown to reduce parental stress and foster primary parent wellness which is critical for the socio-emotional well-being of both parent and child as research shows engaged, positive parenting serves as a buffer against child adversity and an arbiter of existing trauma (Arikan et al., 2019).

Socio-economic Determinants of Support

Ethnic minority caregivers frequently face more adversity than their White counterparts due to increased levels of economic disadvantage and depression found more frequently within this particular demographic (Huang et al., 2014). Suburban neighborhoods reporting higher levels of income and perceived safety were associated with better health outcomes while lower income, urban neighborhoods with less perceived safety were associated with a poorer overall health status (Robinette, Charles, & Gruenewald, 2017). Additional research data of wellness factors and social support among White/non-Hispanic primary caregivers appears scant in the

literature. Perhaps this is because racial and ethnic minorities in recent years comprise over half of the U.S. population of children under the age of five and is continually increasing (Liu, Kia-Keating, & Nylund-Gibson, 2019).

Primary caregivers living in economically deprived areas are especially susceptible to pressure caused by environmental and neighborhood conditions, as well as concerns over perceived neighborhood safety and the real threat of food insecurity. This demographic often experiences increased anxiety over financial and job security as well as concerns over the ability to adequately provide for and raise their children; often as a single parent (Garcia et al., 2017). Primary caregivers who held a negative perception of their housing and neighborhood conditions were found to have higher levels of both socio-emotional and parental psychological distress, resulting in less warmth and the use of more inconsistent and punitive discipline toward their child (Jocson & McLoyd, 2015).

In a study by Kennedy-Hendricks, et al. (2015), caregiver social networks appear strongly influenced by geographic proximity and social distance, which appears to have a positive effect on social ties in public housing areas where many caregivers of low SES status reside. Among such families in various low income urban public housing where a single caregiver of limited resources is often the sole provider; these social networks where neighbors and friends look after one another's children and may serve as role models is an important factor in the caregiver's sense of well-being (Kennedy-Hendricks et al., 2015). Parenting typically involves a child's biological parents but other adults (such as family members, neighbors, friends, teachers, nurses, etc.) can also facilitate an influential parenting role (Hoghughi, 1998). According to Littlewood, et al. (2012), there appears to be a marked increase in children being raised by "kinship" caregivers over the past couple of decades (namely grandparents), reflecting

a rise in social changes that affect the dynamic of traditional parenting roles. Parents today are raising children against a landscape of constantly evolving and increasingly diverse family dynamics with an overall decline in two-parent households as divorce and cohabitation are on the rise. One-fourth of children younger than age 18 are now living with a single parent and children living without either parent are often being raised by a grandparent (The American Family Today, 2015).

The socio-emotional distress of economic deprivation can affect the primary caregiver's functional ability to properly parent and manage a relationship with their children, often resulting in increased parent-child conflicts (Garcia et al., 2017). Such parental stress can lead to poor parenting behavior in the form of aggressive and less responsive parenting which can put a strain this primary parent-child relationship (Choi et al., 2019). Research by Ghazarian and Roche (2010) suggested that high levels of social support among primary caregivers (especially within low SES environments) can reduce parental stress and help to both foster and maintain engagement with their child, leading to a better parent-child relationship. Another benefit is that support appears to provide a protective buffer against future child behavioral concerns and delinquency issues. Huang, et al. (2014) found that ethnic minority adolescent mothers (and their children) who live in homes with multi-generational adult support tend to have better mental health and well-being outcomes, indicating that strong social support may also play a protective role against maternal depression and the toxic effects of parental stress.

Child Demographics

Of the total population of Tri-State area; 13% of local children were nine years old or younger, 14% were between the ages of 10-19 years, and 16% of Greater Cincinnati children (20% in Ohio alone) age 18 or under live in poverty (U.S. Census Bureau, 2018). Cincinnati area

child demographics reflect that access to preventive care is more common among White, insured children over their minority, underinsured and low SES counterparts. Ninety-percent of local children are reported to have an appropriate source of care, with the most common being a private doctor's office or a community clinic. Children in the lowest SES groups, both inner-city and rural, also report being the largest uninsured groups. It is these children (under 100% FPG) who are more likely to use the emergency department or an urgent care as their primary source of health care. Health insurance coverage was found to vary by geography and income while type of coverage varied by race and age (Health Insurance, July, 2018).

Caregiver Demographics

According to 2018 U.S. Census Bureau data found on the Census Reporter website, the population of the Greater Cincinnati Tri-State area surveyed was nearly 2.2 million with 62% of the population aged 18-64, 51% reported to be female, 79% white, 12% black, 3% Hispanic and the median age reported to be 38 years. The median household income for the area was close to $63,000 (10% higher than in Ohio) with 40% of households earning less than $50,000 per year and about 12% of persons reported to be living below the poverty line (higher at nearly 14% in Ohio), including 16% of children and 8% of senior citizens. Geographic mobility (having moved within the past year) in this Tri-State area was reported to be higher than the national average at roughly 15%. Just over 91% of the local population had a high school degree and 34% held a bachelor's degree or higher (U.S. Census Bureau, 2018).

"City of Cincinnati Demographic Data" (n.d.) reported that in 2016, household income for the city appeared consistently below the national average. In this area; the percentage of multiple-unit housing is also double and triple that of the national average. The percentage of those living in a one-unit, detached house is low (about 13%) while the national average is high

(nearly 62%). Perhaps this is reflective of more multi-unit, urban, government subsidized housing projects in the city of Cincinnati (and therefore, reflective of a higher level of poverty than the national average). Incidentally, the crime rate reported in Cincinnati is about 54% higher than the national average and unemployment is considered *very high* at 4.4%.

Aim of Study

There are two aims in this study. First, the study aimed to describe caregivers' physical and mental health status, reported emotional parenting support, perceived neighborhood safety, and demographic characteristics (age, sex, race/ethnicity, education, marital status, relationship to child, poverty status, rural/urban/suburban location). Second, the study aimed to identify differences in physical health status, mental health status, perceived neighborhood safety and parenting emotional support by demographic characteristics (age, sex, race/ethnicity, education, marital status, relationship to child, poverty status, rural/urban/suburban location).

Research Questions

To address the aims of the study the following research questions are posited:

1. What is the reported physical health status of caregivers?
2. What is the reported mental health status of caregivers?
3. What proportion of caregivers report having daily emotional support in parenting?
4. What level of neighborhood or community safety is reported by caregivers?
5. What demographic characteristics describe the sample of child caregivers?
6. Are there differences in reported caregiver physical or mental health status by demographic characteristics?

7. Are there differences in reported caregiver perceived neighborhood safety by demographic characteristics?
8. Are there differences in reported caregiver daily emotional support in parenting by demographic characteristics?

Methods

This study is a secondary data analysis of a cross-sectional sample of respondents to the 2017 Child Well Being Survey. The random sample is representative of the region.

Procedures

Cincinnati Children's and the community health non-profit Interact for Health (IH), with support from the United Way of Greater Cincinnati, funded the Child Well Being Survey (CWBS) to assess the well-being of children in a 22-county area of a Midwestern Tri-state region (Ohio, Kentucky, and Indiana) (Interact for Health, 2019a). The CWBS interviews were conducted via 1,056 landline phones and 1,701 cell phones between March 5, 2017 and August 9, 2017. Interviews were conducted by trained personnel from the Institute for Policy Research at the University of Cincinnati (Interact for Health, 2019b). The resulting dataset is available to researchers upon request via the OASIS data repository of Interact for Health. The Institutional Review Board (IRB) at the University of Cincinnati reviewed all primary data collection procedures prior to granting research proposal approval (see Appendix A).

Participants

A random sample of nearly 3,000 primary caregivers (N=2,757) aged 18 or older residing in the Greater Cincinnati area were recruited. Survey questions were asked about one randomly selected child in each household contacted. The child was selected using the closest birthday to

the survey day. Primary caregivers were defined as the adult in the household who had the most knowledge about the health and health care of the child. Participants were randomly selected from the 22 counties that comprise this Tri-state region, including: Butler, Clinton, Adams, Brown, Warren, Clermont, Highland, Boone, Campbell, Grant, Kenton, Bracken, Carroll, Owen, Pendleton, Franklin, Ripley, and Switzerland (Interact for Health, 2018). Interact for Health stratified the region into five geographical sub-regions including: The City of Cincinnati, Hamilton County (outside of the city of Cincinnati), Ohio Suburban Counties (Butler, Clermont, and Warren), Northern Kentucky counties (Boone, Kenton, and Campbell), and the rural counties of Ohio, Kentucky, and Indiana (included in the Greater Cincinnati/Northern Kentucky Tri-State region).

Instrumentation

A selection of 14 items from the original 76-item survey developed by IH were specifically selected to answer the research questions of the present study. The following topics were examined: caregiver physical health, caregiver mental health, perceived neighborhood safety, emotional parenting support, and caregiver demographics (caregiver age, age of child, sex, race, Hispanic/Latino ethnicity, marital status, employment status, education level, poverty status, household size, rural/urban/suburban location, and relationship to child).

Specifically, caregivers were asked to rate their physical health status on a 5-point Likert type scale (1=Excellent, 5=Poor). Similarly, they were asked to rate their mental health status on the same 5-point Likert type scale (1=Excellent, 5=Poor). To assess parenting emotional support, one item was utilized. Caregivers were asked a Yes/No question, “During the past 12 months, was there someone that you could turn to for day-to-day emotional support with parenting or raising children?” Lastly to measure perceived neighborhood safety, caregivers were asked to

rate on a 4-point Likert type scale how often they felt their child was “safe in their community or neighborhood” (1= Never, 4 = Always).

To assess demographics, a total of 12 items measured: a) caregiver age (number of years); b) age of child for whom they care (number of years); c) sex (male/female); d) race (White, Black/African American, Asian, Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, Other); e) Hispanic/Latino ethnicity (y/n); f) marital status (married, widowed, divorced/separated, never married, partners/not married); g) employment status (employed FT or PT, unemployed/disabled/retired, student, keeping house); h) education level (<high school, high school degree, some college, college graduate); i) poverty status (yes/no), j) household size (number adults, number minors, total size); k) geographical sub-region of residence (1=City of Cincinnati, 2=Hamilton County, 3=Ohio Suburban Counties, 4=Northern Kentucky counties, and 5= Rural counties of Ohio, Kentucky, and Indiana); and l) relationship to child (birth parent, step-parent, foster parent, adoptive parent, grandparent, aunt/uncle, guardian, sibling, partner of child's parent, other).

Data Analysis

SPSS for Windows version 27 was used for all statistical analyses. Researchers started by evaluating the dataset for errors or omissions. Second, researchers coded missing data as ‘system missing’ by assigning a code number (e.g. 8, 9, 88, or 99). Researchers then evaluated all variables for outliers, homogeneity of variance and skewness. The alpha confidence was set to .05 for statistical significance and to .1 for reporting trends. Recoding was performed as needed, for example scale values of 1-5 were reverse coded to 5-1 so that higher scores indicated healthier indices. Lastly, researchers collapsed data into categories to allow for categorical analyses. Descriptive statistics were utilized for all variables (e.g. frequency, percent, central

tendency, etc.). Researchers collapsed geographical location (or sample area) from five to three categories, combined three suburban areas into one, kept the rural and urban designations, then renamed the variable, '*Geographical Sample Area*.'

Research questions one and two (physical health status and mental health status), were answered using descriptive statistics (i.e. frequency, percent, mean, and standard deviation). Research question three (emotional parenting support), was answered using descriptive statistics (frequency and percent). Research questions four and five (perceived neighborhood safety and demographics), were answered using descriptive statistics (i.e. frequency, percent, mean, and standard deviation). Research questions six and seven (differences in physical health status and mental health status by demographics), were answered using Kruskal-Wallis testing, post hoc tests (as needed), and effect size values. Research question eight (differences in emotional parenting support by demographics), was answered using Chi-square testing.

Results

Caregiver Demographic Characteristics

The mean caregiver age was 41.28 (*SD* = 10.39) with 55.3% (*n* = 1,500) in the age range of *30-45 years*. The majority of caregivers identified as *female* at 69.3% (*n* = 1,910) and *White* at 75.8% (*n* = 2,059). A minority 1.8% (*n* = 48) of caregivers reported their ethnicity as *Hispanic/Latino*. The majority of caregivers reported being *married* at 65.6% (*n* = 1,801) followed by *never married* at 13.7% (*n* = 376). Most caregivers reported being *employed* full or part-time at 78.1% (*n* = 2,124). Most caregivers reported being a *college graduate* at 44.6% (*n* = 1,224) followed by *some college* at 30.0% (*n* = 824). The majority of caregivers reported being the child's *birth parent* at 85.7% (*n* = 2,360), followed 7.6% (*n* = 208) reporting being a *relative*

(See Table 4). As seen in Table 5, most caregivers reported income level above 200% FPL at 64.1% (*n* = 1,560) while 18.0% (*n* = 439) reported income at *100% or below FPL* and lived in suburban areas (43.3%, *n* = 911).

Caregiver Overall Health Status

Caregiver physical health status. Caregiver general physical health status rating was assessed using a 5-point scale ranging from 1 = Poor to 5 = Excellent. The average score was 3.59 (*SD* = .978). A large majority of caregivers reported their physical health status as *very good* (34.2%, *n* = 943) or *good* (33.9%, *n* = 935). A small proportion of caregivers reported having *fair* (10.5%, *n* = 290) or *poor* (1.9%, *n* = 53) general health (See Table 6 for more details).

Caregiver Mental Health

Caregiver mental health status. Caregiver mental health status rating was determined by a 5-point Likert scale ranging from 1=Poor to 5=Excellent. Results showed an average mean score of 3.87 (*SD* = .948). A large number of caregivers reported their mental health status as *very good* (36.4%, *n* = 1,002) followed by *excellent* (29.9%, *n* = 823). A small proportion of caregivers reported having *fair* (7.3%, *n* = 200) or *poor* (0.8%, *n* = 21) mental health. ***Daily emotional support in parenting.*** Caregivers reported that in the past 12 months, 93.3% (*n* = 2,571) had someone in their lives who provided day-to-day emotional support with parenting, while only 6.3% (*n* = 175) reported they did not have any parenting support in the same 12-month period.

Reported Neighborhood Community Safety

Neighborhood safety (how often caregivers felt their child was safe in their community) was assessed using a 4-point scale ranging from 1 = Never Safe to 4 = Always Safe. The average score was 3.56 (*SD* = .637) and statistical analysis of skewness and kurtosis showed that the distribution for this scale variable was negatively skewed. A majority of caregivers reported neighborhood safety as *always safe* (62.5%, *n* = 1,719) or *usually safe* (31.6%, *n* = 868). A smaller proportion of caregivers felt their child was only *sometimes safe* (5.0%, *n* = 137) or *never safe* (1.0%, *n* = 27) in their communities (See Table 6 for more details).

About one in three caregivers reported having *five or more* people in the household at 32.1% (*n* = 881) while 31.8% (*n* = 872) had *four* living in the household. Further, 43.1% (*n* = 1,184) reported only *one* child in the household while 32.1% (*n* = 880) reported *two*. The majority of households (63.1%, *n* = 1,735) reported having *two* adults. Geographical location of households varied, with 43.0% (*n* = 911) of caregivers reporting they lived in *suburban* locations, while 16.4% (*n* = 344) reported living in *rural* communities. The remainder 40.3% (*n* = 848) lived in urban areas (See Table 5).

Differences in Reported Caregiver Physical Health Status by Demographics

Since caregiver Physical Health Status (PHS) scores were negatively skewed, the intended ANOVA test could not be used. Kruskal-Wallis Chi-square tests were performed to adjust for non-parametric data and with a Dunn test utilized over Cohen's D for pairwise comparison. A series of Kruskal-Wallis tests were conducted to see if PHS differed by the following demographic characteristics:

Age. Caregiver PHS was found to differ by age [$X^2(3, 2710) = 16.44$, $p = .001$]. Dunn post hoc testing determined that caregivers age *65 and over* had the lowest mean score ($M = 3.19$, $SD = .950$) and differed from all other groups. ***Sex***. A statistically significant difference in PHS was found by sex [$X^2(1, 2753) = 14.636$, $p = .001$] with *female* caregivers scoring lower ($M = 3.53$, $SD = 0.997$) than *male* caregivers ($M = 3.69$, $SD = 0.925$). ***Race.*** Caregiver PHS was found to differ by race [$X^2(2, 2714) = 38.85$, $p = .001$]. Dunn post hoc testing determined that *African American* caregivers ($M = 3.35$, $SD = 1.034$) had the lowest mean score and differed from both *White* ($M = 3.64$, $SD = 0.953$) and those identifying as *Other* race ($M = 3.69$, $SD = 1.015$). ***Ethnicity.*** No statistically significant difference was found by ethnicity [$X^2(1, 2738) = .133$, $p = .715$] of caregiver. ***Marital status.*** Physical Health Status differed by marital status [$X^2(5, 2743) = 125.17$, $p = .001$] and a post hoc test showed that caregivers who were *married* ($M = 3.74$, $SD = 0.922$) had the highest mean score and statistically differed from all other categories while those reporting as *widowed/divorced/separated* had the lowest mean PHS score ($M = 3.16$, $SD = 1.037$).

Employment status. A statistically significant difference in PHS was found by employment status [$X^2(2, 2719) = 77.31$, $p = .001$]. A Dunn test determined that *employed* caregivers ($M = 3.66$, $SD = 0.914$) had the highest mean score while those who were *not employed* (M = 2.89, $SD = 1.15$) had the lowest mean PHS score. All three groups were statistically different from one another. ***Education level.*** Physical Health Status was found to be statistically significantly different by education level [$X^2(3, 2744) = 185.43$, $p = .001$]. Caregivers who had a *college degree* ($M = 3.86$, $SD = .887$) had the highest mean score and statistically differed from all other groups while caregivers with *less than a high school*

education (*M* = 3.18, *SD* = 1.52) and only a *high school* diploma (*M* = 3.34, *SD* = .986) had the lowest mean PHS score. All groups statistically differed from one another.

Relationship to child. A statistically significant difference in PHS was found by relationship to child [$X^2(3, 2751) = 44.14$, p = .001]. Caregivers in the *other* category had the lowest PHS mean score (*M* = 2.73, *SD* = 0.786) while *birth parent* had the highest (*M* = 3.63, *SD* = .972). *Other-relative* and *guardian-birth parent* groups did not different from each other, however, *birth parent* and *guardian* had higher scores than *relative* and *others*. ***Poverty level.*** A statistically significant difference was found [$X^2(2, 2435) = 208.57$, *p* = .001] with a post hoc test showing that caregivers at *200% FPL and above* had a higher mean score (*M* = 3.81, *SD* = .871) than those in the *100% to 200% FPL* group (*M* = 3.30, *SD* = .999) and those in the *100% FPL and below* group (*M* = 3.11, *SD* = 1.049). Again, all groups were statistically different from each other.

Household size. Results showed that the smaller the household size, the lower the mean PHS score [$X^2(3, 2742) = 15.70$, *p* = .001]. Households with *five or more* people (*M* = 3.62, *SD* = 0.975) had the highest mean score while *two-person* households had the lowest mean score (*M* = 3.33, *SD* = 1.050). ***Total number of children in household.*** No difference was found in PHS by the number of children in the household [$X^2(2, 2742) = 1.95$, *p* = .377]. ***Total number of adults in household.*** A statistically significant result was discovered for this demographic [$X^2(2, 2749) = 36.97$, *p* = .001]. No difference was found between a *one* adult household (*M* = 3.36, *SD* = 1.063) and a household with *three or more* adults (*M* = 3.51, *SD* = 1.015), however, *two* adult households (*M* = 3.33, *SD* = 1.050) had statistically significantly higher scores than the other two groups.

Geographical sample area. A difference in PHS was noted by geographic location [X^2(2, 2100) = 31.084, p = .001] with respondents living in *suburban* areas scoring significantly higher PHS scores (M = 3.72, SD = .929) than those living in both *urban* (M = 3.48, SD = 1.031) and *rural* (M = 3.48, SD=1.012) locations.

Differences in Reported Caregiver Mental Health Status by Demographics

Mental Health Status (MHS) was negatively skewed in the same fashion as PHS, therefore, Kruskal-Wallis testing was again utilized to measure non-parametric data (instead of the proposed ANOVA testing) along with the Dunn test for pairwise comparisons.

Age. It was determined that MHS did differ by age [X^2(3, 2707) = 21.33, p = .001]. Older caregivers (*65+ years*) were more likely to have a lower MHS rating (M = 3.71, SD = 1.106) while caregivers *46-64 years* (M = 3.98, SD = .933) had a higher MHS than the other remaining age categories. Post hoc pairwise comparative Dunn test revealed only this age group (*46-64 years*) had a statistically significantly higher MHS scores than all other groups. ***Sex.*** Sex revealed statistical significance [X^2(1, 2751) = 55,921, p = .001] with *female* caregivers (M = 3.79, SD = .963) displaying a lower MHS score than *males* (M = 4.01, SD = .884). ***Race.*** Mental Health Status varied by race [X^2(2, 2713) = 14.57, p = .001] with *African American* caregivers (M = 3.72, SD = 1.036) more likely to have lower MHS scores than *White* caregivers (M = 3.91, SD = .924) or those identifying as *Other* race (M = 3.98, SD = .902). ***Ethnicity.*** No statistical difference was found in caregiver MHS by ethnicity [X^2(1, 2736) = .232, p = .630].

Relationship to child. A difference was found between MHS and relationship to child [X^2(3, 2749) = 13.87, p = .003]. The categories of *other* (M = 3.55, SD = 1.214) and *relative* (M = 3.66, SD = .965) had a lower MHS score than that of *birthparent* (M = 3.89, SD = .938) and *guardian* (M = 3.89, SD = 1.022). Post hoc testing identified a significantly higher score for

birthparent compared to *relative*. ***Marital status.*** Mental Health Status varied by marital status [$X^2(3, 2741) = 135.63$, $p = .001$]. The group identifying as *married* ($M = 4.04$, $SD = .873$) had a higher mean score and was statistically significantly different from the *partners/not married* group ($M = 3.58$, $SD = 1.016$) while the *widowed/divorced/separated* ($M = 3.58$, $SD = .999$) and *never married* ($M = 3.55$, $SD = 1.018$) groups had lower mean scores. ***Education.*** A statistical difference was found by education level [$X^2(3, 2742) = 144.79$, $p = .001$]. Caregivers who had a *college degree* had significantly higher MHS means ($M = 4.11$, $SD = .814$) than all other groups. Those having less than *high school*, had the lowest scores ($M = 3.32$, $SD = 1.159$).

Employment. A difference was noted between MHS and employment [$X^2(2, 2717) = 67.5$, $p = .001$] as *Employed* caregivers scored higher in MHS ($M = 3.96$, $SD = .886$) than those who were *unemployed/disabled/retired* ($M = 3.41$, $SD = 1.107$), with no observed difference between this group and those who identified as *students/keeping house* ($M = 3.63$, $SD = 1.057$). ***Household Size.*** A statistically significant result was found by total household size [$X^2(3, 2739) = 19.65$, $p = .001$]. Caregivers in a household of *two* ($M = 3.60$, $SD = .971$) had a significantly lower MHS score than all other groups. No difference was found among households of *three* ($M = 3.90$, $SD = .951$) and *five or more* ($M = 3.88$, $SD = .946$) nor was there a difference noted between *five* and *four* ($M = 3.90$, $SD = .951$) person households. ***Total number of children in household.*** No relationship was found between caregiver MHS and the number of children in the household [$X^2(2, 2739) = .220$, $p = .896$]. ***Total number of adults in household.*** Differences were observed between these two variables [$X^2(3, 2739) = 19.65$, $p = .001$] as caregivers having only *one* adult in the household reflected a significantly lower mean MHS score ($M = 3.61$, $SD = 1.020$) than caregivers with *two* adult (M = 3.95, SD = .903) and those with *three or more* adult households ($M = 3.83$, $SD = .990$).

Geographical sample area. Data analysis determined there was a difference in MHS by geographical location [$X^2(2, 2097) = 30{,}583$, $p = .001$]. Respondents living in *suburban* areas had significantly higher MHS scores ($M = 4.01$, $SD = .888$) than those who live in both *urban* ($M = 3.78$, $SD = 1.001$) and *rural* ($M = 3.72$, $SD = .946$) areas. ***Poverty Level.*** A statistically significant difference was observed among caregiver MHS scores by poverty level [$X^2(2, 2433) = 168.421$, $p = .001$]. Caregivers living in the lowest income level (*100% and below FPL*) had the lowest MHS scores ($M = 3.49$, $SD = 1.055$) with post hoc tests showing that caregivers living *between 100% and 200% FPL* had lower scores ($M = 3.65$, $SD = 1.003$) than those living *above 200% FPL* ($M = 4.06$, $SD = .842$).

Differences in Caregiver Perceived Neighborhood Safety by Demographics

Relationship to child. The distribution of means for perceived neighborhood safety was negatively skewed, thus Kruskal-Wallis Chi-square testing was utilized to see if there was a difference in caregiver's perceived child neighborhood safety by relationship to the child [$X^2(3, 2748) = 4.123$, $p = .249$). No statistically significant difference was observed. ***Marital status.*** A statistically significant relationship was found between perceived neighborhood safety and marital status [$X^2(3, 2739) = 45.83$, $p = .001$]. Post hoc tests revealed that caregivers who were *married* had a statistically significantly higher perceived safety mean ($M = 3.62$, $SD = .569$) than the other categories of *partners/not married* ($M = 3.52$, $SD = .674$), *never married* ($M = 3.36$, $SD = .684$), and *widowed/divorced/separated* ($M = 3.45$, $SD = .684$) caregivers. Those identifying as *partners/ not married* had a higher mean score than those who were *never married*.

Caregiver age. No statistically significant result was found between perceived neighborhood safety and age of caregiver [$X^2(3, 2705) = 1.441$, $p = .696$]. ***Caregiver sex.*** Differences were noted by sex [$X^2(1, 2750) = 21.407$, $p = .001$] as *male* caregivers had higher

perceived safety mean scores (M =3.65, SD = .544) than *female* caregivers (M = 3.51, SD = .670). ***Caregiver education level.*** Differences were found between education level and perceived level of neighborhood safety [$X^2(3, 2740) = 18.464$, $p = .001$]. Post hoc tests showed that Caregivers who had a *college degree* (M = 3.62, SD = .549) had higher mean scores perceived safety than caregivers who had *some college* (M = 3.50, SD = .645) and those who had a high school degree (M =3.48, SD = .541). Interestingly, caregivers who reported *some college* had lower mean scores than those who's education level was reported as *less than high school* (M = 3.56, SD = .741).

Race. A statistically significant result was discovered between race and perceived level of safety [$X^2(2, 2710) = 64.312$, $p = .001$] with post hoc tests showing that *White* caregivers had statistically different mean scores. Specifically, *White* caregivers had higher scores (M = 3.62, SD = .580) than both *African American* caregivers (M = 3.34, SD = .772) and those who identified as *Other* (M = 3.47, SD = .662). ***Ethnicity.*** Results [$X^2(1, 2734) = 7.532$, $p = .006$) showed that *Hispanic/Latino* caregivers had lower scores (M = 3.31, SD = .719) than *non-Hispanic/Latino* caregivers (M = 3.56, SD = .635). ***Employment status.*** No statistically significant result was found between the variables of MHS and employment status [$X^2(2, 2715) = .215$, $p = .898$].

Household size. A difference was found between level of safety and household size [$X^2(3, 2738) = 11.578$, $p = .009$] as households of only *two* (one adult and one child) had lower mean scores (M = 3.40, SD = .760) than households with *three* (M = 3.58, SD = .623), *four* (M = 3.59, SD = .592) and *five or more* (M = 3.54, SD = .651). ***Total number of children in household.*** There was no statistical significance found between total children at home and perceived neighborhood safety [$X^2(2, 2739) = 1.727$, $p = .422$)]. ***Total number of adults in***

household. A difference was found by number of adults within the household and perceived neighborhood safety [$X^2(2, 2745) = 29{,}903$, $p = .001$]. Households with *two* adults had a statistically significant higher mean (M = 3.61, SD = .583) compared to households with only *one* adult score ($M = 3.38$, $SD = .774$) and those with *three or more* ($M = 3.56$, $SD = .651$). Households with *three or more* adults had higher scores than those with only *one* adult.

Poverty Status. There was also a difference between level of poverty and perceived safety of child [$X^2(2, 2431) = 48.503$, $p = .001$). with post hoc tests revealing that those living *within or below 100% FPL* had lower scores ($M = 3.36$, $SD = .793$), as did those *between 100% and 200% FPL* ($M = 3.46$, $SD = .699$) than those *above 200% FPL* ($M = 3.63$, $SD = .536$).

Geographical sample area. A significant difference in perceived neighborhood safety by geographic area was noted [$X^2(2, 2098) = 136.319$, $p = .001$). Specifically, post hoc tests showed that those living in urban areas had the lowest mean scores ($M = 3.32$, $SD = .742$) and differed statistically from those living in suburban ($M = 3.65$, $SD = .549$) and rural areas ($M = 3.71$, $SD = .513$) with higher scores.

Differences in Reported Daily Parenting Emotional Support by Demographics

Age. Chi-Square test of independence was used to assess if reported caregivers daily emotional support differed by their respective age groups. A statistically significant relationship was found [$X^2(3, 2702) = 16.92$, $p = .001$]. Caregivers in age group *46-64 years* were less likely to report that they had day-to-day emotional support (29.2%. $n = 739$) while caregivers in the age group of *30-45 years* were more likely to report that they received daily support (56.4%, $n = 1{,}428$). A small effect size was noted with a Cramer's V of .1. ***Sex.*** No statistically significant association was found between caregiver daily emotional support and sex [$X^2(1, 2745) = 1.17$, $p = .159$]. ***Race.*** A relationship was found between daily emotional support and race [$X^2(2, 2702)$

= 16.92, p = .001] which indicated that *White* caregivers were more likely than expected to report having received daily support (76.8%, n = 1,951) than *African American* (19.3%, n = 489) and those identifying as *Other* race were less likely than expected to receive day-to-day emotional support (3.9%, n = 100). A small effect size was noted with a Cramer's V of .1. ***Ethnicity.*** A relationship was also noted between ethnicity and caregiver emotional support [X^2(1, 2731) = 23.48, p = .001] as caregivers reporting as *Hispanic/Latino* were far less likely to receive daily support (1.4%, n = 36) than caregivers who were *non-Hispanic/Latino* (98.6%, n = 2,522). A small effect size was noted with Cramer's V of .1. ***Marital status.*** A statistically significant relationship was found [X^2(3, 2736) = 45.16, p = .001]. Caregivers who identified as *widowed/divorced/separated* were less likely to report receiving day-to-day emotional support (10.5%, n = 278) than caregivers who were *married* (66.8%, n = 1,713). A small effect size was noted with a Cramer's V of .1. ***Employment.*** Reported caregiver daily parenting emotional support statistically differed by employment status [X^2(2, 2712) = 17.68, p = .001] as caregivers who were *not employed (unemployed/disabled/retired)* were considerably less likely to report having daily support (5.4%, n = 136) than caregivers who were *employed (full or part-time)* (78.8%, n = 2.002). A small effect size was appreciated with Cramer's V at .1. ***Education level.*** A statistically significant relationship was found between education level and daily parenting support [X^2(3, 2737) = 41.42, p = .001]. Caregivers *with less than a high school* education were far less likely than expected to report receiving daily parenting emotional support (5.0%, n = 529) than caregivers with a *college degree* who were exceedingly more likely than expected to have daily emotional support (45.8%, n = 1,175). A small effect size was found with a Cramer's V of .1. ***Relationship to child.*** There was no statistical significance found between level of emotional support and a caregiver's relationship to the child [X^2(3, 2744 = 1.54, p = .672].

Poverty status. A relationship was found between caregiver level of income and daily parenting emotional support [$X^2(1, 2431) = 32.73$, $p = .001$]. Caregivers with a household income *level below 200% FPL* were far less likely to have day-to-day parenting support (34.6%, $n = 794$) than caregivers living in households *above 200% FPL* (65.4%, $n = 1{,}501$) who reported higher than expected daily emotional support. A small effect size was found with a Cramer's V of .1. No statistical significance was found between caregiver level of emotional support by ***total household size*** [$X^2(3, 2734) = 6.92$, $p = .074$] or ***total children in the household*** [$X^2(2, 2734) = 1.32$, $p = .517$]. ***Total adults in the household.*** A statistically significant result was found between these two variables [$X^2(2, 2741) = 28.504$, $p = .001$ *as one* adult households (14.5%, $n = 371$) and, interestingly, *three or more* adult households (21.3%, $n = 547$) were less likely to report they received day to day emotional parenting support than *two* adult households (64.2%, $n = 1{,}649$). A small effect size was found with Cramer's V at .1. ***Geographical sample area.*** There was no significant difference between parenting support by geographical location [$X^2(2, 2093) = 2.415$, $p = .229$].

Discussion

This present study asked about the reported physical health status of caregivers. Results showed that a minority of caregivers reported fair or poor physical health. Literature supports that poor primary caregiver health and wellness is associated with maladaptive parental coping skills which can have a negative impact on child mental health outcomes (Jackson, Frydenberg, Liang, Higgins, & Murphy, 2015). Regarding caregiver mental health status, data analysis indicated that a minority of caregivers reported fair or poor mental health. Many caregivers within specific demographic characteristics and a lower mental health status, face higher levels of ‘parental stress,’ which can lead to negative parenting styles and adversely affect their child’s

coping abilities as well as cognitive and behavioral outcomes (Huang, et al., 2014). 'Parental stress' was defined by Skreden and Colleagues (2012) as a dichotomy between available resources and the needs required of the parenting role, which, can be ameliorated by strengthening a caregiver's daily parenting emotional support system.

This study also wanted to evaluate what proportion of caregivers reported daily emotional support in parenting and revealed that a small number of caregivers reported not having parenting support within a 12-month period. Research indicates that a primary caregiver's perceived level of support can protect against negative parent/child outcomes arising from 'parental stress' (Huang, et al., 2014). Existing literature supports the results found within this study. An increased perception of a social support network appeared to reduce this burden of parenting stress, improved parent socio-emotional well-being, and potentially served as a buffer against adverse childhood experiences. Ghazarian and Roche (2010) reinforce that increased levels of social support among primary caregivers, especially within low SES conditions, can reduce effects of parental stress, improved parent-child engagement, and lead to a better parent-child relationship.

When asked about perceptions of neighborhood safety, a minority of caregivers stated feeling their child was safe in their communities. Primary caregivers in low income environments are at increased risk to the pressures caused by disadvantaged neighborhood conditions, concerns over food insecurity, and overall neighborhood safety (Garcia et al., 2017). Caregivers with a negative view of their neighborhood conditions showed an increased level of psychological and socio-emotional difficulties which can have a profoundly negative impact on their child's mental health outcomes as well (Jocson & McLoyd, 2015).

Demographic characteristics describing the sample of child caregivers revealed that the minority of caregivers were either relatives or guardians, not married, not employed, African American, of Hispanic/Latino ethnicity, male, aged 18-29 or over 65, had a high school education or less**,** resided in a household size of two, lived in mostly rural or urban areas and below 100-200% FPL. Research by Jacoby and Colleagues (2017) reinforced that unemployment poverty coupled with disadvantaged, unsafe living conditions are sizeable risk factors for depression among caregivers and by proxy, their children.

Differences in reported caregiver physical and mental health status by demographic characteristics showed that African American, female caregivers over the age of 65 who were not married, not working, held a high school education or less, living below 200% FPL, in a two person, one adult household and identified as a relative or other; had lower physical health ratings. There was no difference found by ethnicity or number of children within the home. A minority of caregivers also reported fair or poor levels of mental health. Caregivers who were African American, male, aged 18-29, and over 65, unmarried, not employed, with a high school education or below, and living under 200% FPL scored lower mental health ratings. Additionally, caregivers living in a two-person (one adult) household, or who identified as a relative or other, and resided in either rural or urban areas had lower mental health ratings. There was no difference by ethnicity or number of children within the home. Such disproportionate racial and ethnic disparities, inequities, and neighborhood factors are associated with an increased prevalence of health conditions and mental health problems within this demographic, despite long-term improvements in overall health in the United States (Jacoby, Tach, Guerra, Wiebe, & Richmond, 2017).

This study also found differences among caregiver perceived neighborhood safety by demographic characteristics. Lower perceived neighborhood safety ratings were found among caregivers who were not married, female, African American (or identifying as Other race), Hispanic, not employed, with a high school education, living below 200% FPL, residing in a two-person (one adult) household or a household of three or more, and within an urban area. No difference was found by relationship to child, employment status, or number of children inside the home. Various bodies of research posit that racial and ethnic minority populations living in urban US cities are more likely to live in violent neighborhoods with less access to stable housing and opportunities for quality education (Jacoby, Tach, Guerra, Wiebe, & Richmond, 2017). Literature also supports that overall health status appeared worse among parents living in low SES, urban neighborhoods they perceived as less safe than when looking at their higher income, suburban counterparts (Robinette, Charles, & Gruenewald, 2017). Data further showed that caregivers who had a negative perception of their living environment also demonstrated increased psychological distress in multiple domains, which can negatively impact their children's mental health outcomes (Jocson & McLoyd, 2015).

Differences in reported caregiver daily emotional support in parenting by demographic characteristics were found. Results showed that caregivers who were African American, Hispanic/Latino, aged 46-64 years, not married, not employed, having less than a high school education, and living under 200% FPL; were less likely to report receiving daily parenting emotional support. Caregivers residing in a one adult household were less likely than expected to report receiving parenting support and interestingly, data show that households with three or more adults were equally as unlikely to receive parenting emotional support on a daily basis. No difference was found by sex, relationship to child, total household size, number of children in the

household, or geographical sample location. Research corroborates that social support is critical to the emotional health and well-being of the child's primary caregiver. Work by the team of Ghazarian and Roche (2010) stated that increased amounts of social support among primary caregivers (especially within low SES environments) reduces the overall parenting stress load, which, may promote a better parent-child relationship and have a protective effect against later child behavioral concerns or delinquency issues. These networks of social support (comprised of friends, neighbors, and family) who look after one another's children appear to serve an especially important role among families in low income, urban, public housing areas where a child often lacks positive role models and is typically raised by a single parent living within minimal means (Kennedy-Hendricks et al., 2015).

Limitations

Perhaps the most significant limitation of this study is the potential for caregiver reporting bias, given the sensitive nature of the questions posed, participants may have opted for more socially acceptable responses for both themselves and their child. Further limitations to this study include the fact it was a telephone survey, limiting it to caregivers who had a phone and operated on the assumption that the person on the phone answering the questions was in fact the child's primary caregiver. The results of this study can be considered generalizable to its local area as it was conducted using a large sample size and random digit dial assignment of the area. Lastly, it is important to consider the inherent limitation of a secondary data analysis in that the data available for analysis were limited to the questions asked by the original survey.

Conclusions and Recommendations

Many parents today are faced with evolving environmental challenges as they raise their children against a milieu of progressively more diverse family dynamics with divorce on the rise,

a general decline in two-parent support households, and more than a quarter of school-aged children being raised by a single parent (or grandparent). As economic deprivation fans the flames of the socio-emotional and toxic effects of parental stress among low income, urban, minority caregivers with limited means and resources; the burden this toxic stress adds to the parent-child dynamic can have a reciprocal effect on the child's mental health outcome and coping abilities.

Jacoby, Tach, Guerra, Wiebe, and Richmond (2017) stated that depressed parents were more likely to have children with more conduct issues and emotional health concerns. The findings from this study are consistent with previous bodies of research asserting that children of depressed, urban, single caregivers raising their child in socially disadvantaged neighborhoods have poorer mental health outcomes. An extensive amount of research suggests that caregivers who experienced an increase in perceived neighborhood safety and parenting emotional support reflected better overall mental and physical health outcomes.

There is a clear and inextricable link between the overall mental health and well-being of primary caregivers and of their children. There is also an inherent connection between mental health and physical health outcomes at any age. High levels of parental stress can lead to less responsive and more aggressive parenting, straining the parent-child relationship, and leading to mental health and behavioral issues that have the potential to adversely shape a child's psychosocial functioning and health outcomes both in the present and the future.

Being a parent is difficult under the best of social and environmental circumstances but financial insecurity and lack of support in parenting introduce an added layer of physical and emotional burden. The antidote to such negative health consequences on the parent, child, and parent-child relationship appears to be social support. This type of support has been linked to

promoting an increase in the socio-emotional well-being of the parent and thus, a shift toward more positive parenting, increased child engagement, and improved parent and child behavioral outcomes over time.

People are all innately hardwired for human connection, to support and be supported, to know they are not alone in their struggle to provide for their basic needs and the needs of their children. Perceptions of control in less than desirable child-rearing circumstances are positively mediated by social support. Health educators are uniquely qualified to design and implement programs that connect communities in need with available resources that will both enhance and promote a better collective quality of health and well-being within the most vulnerable of demographics.

Early intervention among at-risk, under-supported parent populations will facilitate a more positive health trajectory for their children. Interventions to improve parenting during childhood must include a framework that will capitalize on local resources to create sustainable social networks for caregivers. Implementation of programs addressing the biological imperative of social support must to be promoted within the most vulnerable parent-child demographics in order to foster safer and healthier communities both now and for generations to come.

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Table 4. Caregiver Demographic Variables

Variables		*n*	Percent
Age			
18-29		327	12.1
30-45		1,500	55.3
46-64		812	30.0
65 and older		72	2.7
	Total	2,711	100.0
Sex			
Male		846	30.7
Female		1,910	69.3
	Total	2,756	100.0
Race			
White		2,059	75.8
Black/African American		538	19.8
Other race		119	4.4
	Total	2,716	100.0
Ethnicity			
Hispanic		48	1.8
Non-Hispanic		2,692	98.2
	Total	2,740	100.0
Caregiver relationship to child			
Birth parent		2,360	85.7
Relative		208	7.6
Guardian		175	6.4
Other		11	.4
	Total	2,754	100.0
Caregiver Marital Status			
Married		1,801	65.6
Partners, not married		246	9.0
Widowed/Divorced/Separated		322	11.7
Never Married		376	13.7
	Total	2,745	100.0
Employment Status			
Employed full time or part-time		2,124	78.1
Unemployed/disabled/retired		158	5.8
Student/keeping house		439	16.1
	Total	2,721	100.0
Educational attainment			
Less than high school		154	5.6
High school graduate		544	19.8
Some college		824	30.0
College graduate		1,224	44.6
	Total	2,746	100.0
Age of child for whom they care			
0-5		837	30.5
6-12		974	35.5
13-17		931	34.0
	Total	2,742	100.0

Note: Missing data excluded

Table 5. Household Characteristics

Variables		*n*	Percent
Geographical location			
Urban		848	40.3
Suburban		911	43.3
Rural		344	16.4
	Total	2,103	100.0
Federal Poverty Level			
100% and below FPL		439	18.0
Between 100% and 200% FPL		46	17.9
Above 200% FPL		1,560	64.1
	Total	2,435	100.0
Household size			
Two		210	7.7
Three		781	28.5
Four		872	31.8
Five or more		881	32.1
	Total	2,744	100.0
Children in household			
One		1,184	43.1
Two		880	32.1
Three or more		681	24.8
	Total	2,745	100.0
Adults in household			
One		417	15.2
Two		1,735	63.1
Three or more		599	21.8
	Total	2,757	100.0

Table 6. Caregiver Health and Neighborhood Safety Variables

Variables		*n*	Percent
General Physical Health Status			
Excellent		533	19.4
Very Good		943	34.2
Good		935	34
Fair		290	10.5
Poor		53	1.9
	Total	2,754	100.0
General Mental Health Status			
Excellent		823	29.9
Very Good		1,002	36.4
Good		705	25.6
Fair		200	7.3
Poor		21	.8
	Total	2,751	100.0
Day-to-day emotional support with parenting, prior 12 months			
Yes		2,751	93.6
No		175	6.4
	Total	2,746	100.0
How often child is perceived being safe in neighborhood			
Always safe		1,719	62.5
Usually safe		868	31.6
Sometimes safe		137	5.0
Never safe		27	1.0
	Total	2,751	100.0

Note- Missing data excluded

Appendix A- IRB Letter

From: "IRB@UCMAIL.UC.EDU" <IRB@UCMAIL.UC.EDU>
Date: March 30, 2020 at 5:35:24 AM EDT
To: "Rojas-Guyler, Liliana (guylerlr)" <guylerlr@ucmail.uc.edu>
Subject: 2020-0271 is not human research
Reply-To: IRB@UCMAIL.UC.EDU

Template:IRB_T_Post-Review_NotHumanResearch

University of CINCINNATI IRB

Notification of Not Human Research Determination

To:	Liliana Rojas Guyler
Link:	2020-0271
P.I.:	Liliana Rojas Guyler
Title:	Child Wellbeing and Health Factors
Description:	The committee reviewed this submission and assigned a determination of Not Human Research. For additional details, click on the link above to access the project workspace.

Please do not reply to this message.

If actions are required, you must access the workspace via the link above in order for the submission to proceed.

If you have questions/concerns, please access the workspace and execute the Add Comment/Add Private Comment activity or contact the Human Research Protection Program at irb@ucmail.uc.edu.

Appendix B- Survey Items

MS1 Items

Q9d. Has a doctor or other healthcare provider ever told you that [CHILD] has...Depression?

1 = 'YES'
2 = 'NO'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 9e. Has a doctor or healthcare provider ever told you that [CHILD] has…Anxiety?

1 = 'YES'
2 = 'NO'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 18. In general, how would you describe your child's mental or emotional health? Would you say, it is: [READ 1 to 5]

1 = 'EXCELLENT'
2 = 'VERY GOOD'
3 = 'GOOD'
4 = 'FAIR'
5 = 'POOR'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 35. “How often do you feel [CHILD] is safe in your community or neighborhood?” (READ 1 THRU 4)…

1 = 'NEVER SAFE'
2 = 'SOMETIMES SAFE'
3 = 'USUALLY SAFE'
4 = 'ALWAYS SAFE'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 17. “Mental health professionals include psychiatrists, psychologists, psychiatric nurses, and clinical social workers. During the past 12 months, has [CHILD] received any treatment or counseling from a mental health professional?”

1 = 'YES'
2 = 'NO'

8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 13. “Is there a place that [CHILD] usually goes when [HE/SHE] is sick or you need advice about [HIS/HER] health?”

1 = 'YES'
2 = 'NO'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 15. “Preventive care visits include things like a well-child check-up, a routine physical exam, immunizations, or health screening tests. During the past 12 months, did [child] see a doctor, nurse or other health care professional for any kind of preventive care?”

1 = 'YES'
2 = 'NO'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 19. “Sometimes people have trouble getting health care when they need it. By health care, I mean medical care as well as other kinds of care like dental care and mental health services. During the past 12 months, was there any time when [CHILD] needed health care but it was delayed or not received?”

1 = 'YES'
2 = 'NO'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q20. “What type of care was delayed or not received? Was it medical care, dental care, mental health services, or something else?”

1=COST TOO MUCH
2=DON’T HAVE INSURANCE
3=DOCTOR/HOSPITAL WOULDN’T ACCEPT HEALTH INSURANCE
4=INSURANCE DIDN’T COVER/PAY FOR TREATMENT
5=UNABLE TO GET A REFERRAL FROM A DOCTOR
6=COULDN’T GET AN APPOINTMENT SOON ENOUGH
7=COULDN’T GET THERE WHEN DOCTOR’S OFFICE/CLINIC WAS OPEN
8=TAKES TOO LONG TO GET TO THE DOCTOR’S OFFICE/CLINIC

Q 5. “What is the age of [CHILD]?”

Q 6. “Is [CHILD] a boy or girl?”

Q 55. Which one of the following would you say best represents [CHILD]’s race?

1= White
2= Black/African American
3= Asian
4= Native Hawaiian/Pacific Islander
5= American Indian/Alaskan Native
6= Other
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 56. Do you consider [CHILD] to be Hispanic or Latino?

1 = 'YES'
2 = 'NO'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

IH assignment to poverty level

IH assignment to location

IH Total, adult and child Household size assignments

MS2 Additional Caregiver Items

Q 39. “In general, how is your physical health? Would you say…

1= 'EXCELLENT'
2 = 'VERY GOOD'
3 = 'GOOD'
4 = 'FAIR'
5 = 'POOR'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 40. “In general, how is your mental or emotional health? Would you say…

1 = 'EXCELLENT'
2 = 'VERY GOOD'
3 = 'GOOD'
4 = 'FAIR'
5 = 'POOR'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 41. “During the past 12 months, was there someone that you could turn to for day-to-day emotional support with parenting or raising children?”

1 = 'YES'
2 = 'NO'
8 = 'DON'T KNOW'
9 = 'NA/REFUSED'

Q 35. “How often do you feel [CHILD] is safe in your community or neighborhood?” (READ 1 THRU 4)…

1= Always
2= Usually
3= Sometimes
4= Never

Q 42. “First, which category best describes your relationship to [CHILD]? I will read you a list and please stop me when I get to yours … Are you [CHILD]’s…

1 = 'BIRTH PARENT'
2 = 'STEP-PARENT'
3 = 'FOSTER PARENT'
4 = 'ADOPTIVE PARENT'
5 = 'GRANDPARENT'
6 = 'AUNT / UNCLE'
7 = 'GUARDIAN'
8 = 'SIBLING'
9 = 'PARTNER OF CHILD"S PARENT'
10 = 'OTHER'
98 = 'DON'T KNOW'
99 = 'NA/REFUSED'

IH assignment to poverty level

1 = '100% and below FPL'
2 = 'Between 100% and 200% FPL'
3 = 'Above 200% FPL'
99 = 'MISSING'

IH assignment to location

Caregiver age

Caregiver sex

Caregiver Marital Status

Caregiver Race

Caregiver Ethnicity

Caregiver Employment Status

Caregiver Educational Attainment