Geographical Disparity on Mental Health Among Head Start Eligible Families in Poverty

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Research Article

Keywords: Mental Health, Geographical Disparity, Rural Community, Parents and Children, Head Start

Posted Date: March 8th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-7455863/v1

Additional Declarations: No competing interests reported.

Abstract

Aims: This study examines geographical disparities in mental health among families living in poverty by assessing the impact of Head Start on child and parental mental health and exploring the associations between parental and child mental health.

Methods: Using data from the Head Start Impact Study, Head Start-eligible families in poverty (n = 3,780) were categorized as residing in either urban (n = 3,172) or rural (n = 608) communities. Parental mental health was measured using the CES-D scale, and children's social-emotional skills were assessed alongside other baseline variables.

Results: Families (both parents and children) in rural communities reported higher mental health challenges compared to those in urban areas. Among rural families, African Americans, those with limited formal and informal support services, and those with younger children exhibited greater mental health difficulties. Parental mental health was significantly associated with children's social-emotional development. While Head Start did not have a significant impact on parental mental health, it positively influenced children's social-emotional outcomes, particularly in rural communities.

Conclusion: Early intervention programs, Head Start, should incorporate family-focused mental health components alongside expanded services for rural communities. Outreach efforts should prioritize mental health literacy and increase awareness of available social service programs, particularly for minority families and those raising younger children in rural areas.

Introduction

Low-income mothers of young children are particularly at-risk for experiencing depression due to stressors related to both finances and additional roles and responsibilities associated with parenting a young child (McDaniel & Lowenstein, 2013). Further, living in a rural area is associated with an increased risk of perinatal mental illness (Edwards et al., 2023). The lived experiences of rural individuals and families is very different from the experiences of their counterparts in urban communities, yet much of the research conducted regarding mental health is focused on urban communities or does not differentiate between urban and rural residents. There are more than 46 million Americans living in rural communities (Farrigan et al., 2024). These rural Americans are predominantly white, with only 9% of the rural population identified as Hispanic, 8% as Black, 2% as American Indian. Rural communities have higher poverty rates than urban communities, 15.4 compared to 12.3. This difference in poverty and diversity are two significant factors to be considered when generalizing mental health information from an urban community to a rural community. This study will look at how enrollment in Head Start, a two-tiered intergenerational model, impacts the social emotional learning skills of the child and the mental health of the parent(s).

Mental Health in Rural Neighborhood

Nationwide, 22.8% of the population reports experiencing mental illness in the past year, including 7.7 million adults living in nonmetropolitan areas (Substance Abuse and Mental Health Services Administration (2024). Of those that reported mental illness, 24% identified as white, 23.5% as American Indian/Alaskan Native, and 19.7% as Black (Substance Abuse and Mental Health Services Administration (SAMHSA), 2024). Additionally, 1.6 million adults in nonmetropolitan areas reported serious thoughts of suicide (SAMHSA, 2024). The suicide rates in rural areas have been higher than in urban areas for a long time. In the years 2013-2015, the suicide rate in rural communities was 19.74 while the suicide rate for more urban areas was 12.72 (Ivey-Stephenson et al., 2017). Ivey-Stephenson et al. (2017), demonstrate that the higher suicide rate in rural communities exists across demographics including men, women, white, and American Indian/Alaskan Native. This is not true for Blacks in rural areas, as they have a slightly lower suicide rates that their urban counterparts, 6.07 compared to 6.56 (Ivey-Stephenson et al., 2017).

Despite the obvious need for mental health treatment in rural communities, these communities have lower rates of mental health services received than urban communities (SAMHSA, 2024). This is largely in part due to limited mental health treatment resources in rural communities. Rural communities make up 75% of the medically underserved communities in America (Lim & Janick, 2013), and 85% of the them are designated as mental health professional shortage areas (Blackstock et al., 2018). This lack of providers produces long waitlists (DiGregorio & Selph, 2022) increasing the length of time from initial contact to start of treatment for individuals and families seeking treatment. For the rural poor with Medicaid and Medicare, emergency departments act as mental health treatment. A substantially higher number of Medicaid and Medicare recipients present to emergency rooms for mental health treatment in rural communities than in urban communities (Schroeder & Peterson, 2017). Treatment provided hear is limited in scope and without follow-up from a mental health provider, patients are likely to return. When people in rural communities require inpatient psychiatric care, they are less likely to be placed in their communities, as 76% of the inpatient psychiatric hospitals are in urban communities and the ones that are located in rural communities often lack a mental health specialization (Hung et al., 2022). This isolation from family and community while receiving mental health treatment adds to the burden for both the individual and the family and may act as an additional barrier to seeking treatment. This shortage of mental health treatment in rural communities produces a significant mental health outcome disparity between urban and rural populations (Morales, Barksdale & Beckel-Mitchener, 2020).

Additional barriers to accessing mental health treatment further exacerbate this disparity in treatment rates. More than one in twenty rural households do not have access to a personal vehicle (Neumann & Soulliere, 2018). Additionally, individuals are often expected to travel long distances to reach treatment providers (Needles-Fletcher et al., 2010). Without a personal vehicle and with limited access to public transportation these long distances become a significant barrier. Mental Health stigma and rural values are other significant barriers. Due to the close knit nature of rural communities, fear of confidentiality breaches and fear of being judged by others is high in many rural communities (Blackstock et al., 2018; Huscroft-D'Angelo, January, & Duppong Hurley, 2018). These fears are exacerbated by commonly held rural beliefs and values of self-reliance and individualism (Beehler, Corcoran & Michaels, 2023). Further,

lack of childcare during appointments, poor mental health literacy (Hickey et al., 2020), high cost of services, and inconvenience service times (Graaf et al., 2022) add additional barriers to accessing treatment.

Associations between parental mental health and children's mental health.

Parental mental health can impact children in a variety of ways. Research suggests that mental health diagnoses, such as anxiety or depression, in a parent have negative impacts on children (Stracke et al., 2023) and even impacts their physical health (Pierce et al., 2019). Further research suggests that high prenatal stress levels, without a mental health diagnosis, can negatively impact a child and cause an increased risk of emotional and behavioral problems measured at three years of age (Kvalevaag et al., 2014) and later in life (Stallard et al., 2004). A parent's mental health, has an impact on children in part due to a decreased level of socialization between parent and child (Penna et al., 2023). It is also suggested that the development of insecure attachment types, common to children with parents experiencing severe mental illness, parents with unresolved trauma, and parents with their own insecure attachment styles (Risi, Pickard & Bird, 2021). Additionally, even without a diagnosed mental illness, conflict within the parent-child relationship can cause increased rates of anxiety, depression, and aggression in children (Smokowski et al., 2014).

Conversely, a parent with positive mental health and parenting practices may be a protective factor for children, improving mental health and social emotional outcomes. Positive maternal mental health reduces the prevalence of both internalizing and externalizing behaviors in children (Clayborn et al., 2023). High self-efficacy in parents has a similarly positive impact on the mental health of children (Gassman-Pines et al., 2021) as does parental resiliency (Prime et al., 2020). Depression rates in children can be reduced and children experience improved self-esteem, optimism, and school satisfaction with positive support from parents (Smokowski et al., 2014). Other supportive adults can also have a positive impact on a child's mental health through positive and supportive interactions (Garcia-Carrión et al., 2019).

Head Start Impact on Mental Health for Children and Parents

Head Start is a nationally funded, multigenerational approach to supporting low-income children and their families. Head Start utilizes a variety of classroom and home-based programs to addressed their mandated goals of supporting "the needs of the whole child, including the cognitive, social-emotional, and health needs of children, and positively influence the parenting practices of their parents" (Head Start Impact, 2010). The Incredible Years program is an evidence-based intervention which addressed topics such as skills coaching, praise and rewards, limit setting, and managing behaviors (Leiten et al., 2017). Similarly, Parents as Teachers is a home-based curriculum addressing parenting knowledge, attitudes, and behaviors (Wagner, Spiker, & Linn, 2002). CARING is a play-based intervention focused on improving the parent-child bond and social-emotional development (Duch et al., 2019). Preschool PATHS teaches social emotional competences over thirty weeks to address emotional and behavioral problems (Domitrovich, Cortes, & Greenberg, 2007).

These programs have been shown to have significant impacts on parenting behaviors and child outcomes. The Incredible Years program reduces disruptive behaviors, hyperactivity, and inattention in children while decreasing the use of harsh and inconsistent discipline and increasing the use of praise and positive reinforcement by parents (Leiten et al., 2017). Parenting behaviors also improved related to the Parents as Teachers curriculum, with a positive impact on the developmental profile for children (Wagner, Spiker, & Linn, 2002). The parent-child relationship significantly improves when families participate in the CARING program, as do the child's self-regulation skills, communication skills, emotional expression, and school readiness (Duch et al., 2019). Children show increased emotional awareness and interpersonal skills, and are less withdrawn when participating in the Preschool PATHS curriculum (Domitrovich, Cortes, & Greenberg, 2007). While not directly addressing mental health outcomes for the children involved in these programs, they teach the necessary skills and build the family cohesion necessary to have a positive impact on mental health outcomes (Van Schoors et al., 2023). Although one study showed t that involvement in Head Start had no significant difference on maternal depression (Vogel et al., 2013), relatively few research studies look at the impact of Head Start on maternal depression.

The Current Study

Rural families face unique challenges in addressing both parental and child mental health. High poverty rates, limited access to mental health resources, transportation barriers, disparities in treatment focus, and rural beliefs and practices contribute to the urgent need for improved mental health literacy and treatment among low-income families in rural communities. Research consistently shows that poor parental mental health negatively impacts children's social-emotional development. Despite the various risk factors affecting mental health among families in rural, low-income neighborhoods, there is a notable lack of research-informed evidence specific to these populations. As shown above, the mental health of a parent has a direct impact on the outcomes for the child. In rural communities, where Head Start eligible families face high poverty rates, limited mental health resources, and a variety of unique barriers to accessing mental health treatment, Head Start could have a vital role in addressing the mental health of both mother and child. This study aims to address these gaps by investigating the differences between rural and urban families participating in the Head Start program, focusing on mental health outcomes for both parents and children. Specifically, the study will explore the following research questions.

1. Whether or not there a difference between the mental health of children and parents in rural communities compared to urban communities. It is hypothesized that children and parents living in rural neighborhoods experience higher mental health problems than those living in urban area.

2. Whether or not there a parent's mental health problems affect the child's socioemotional development. It is hypothesized that children of mothers who experience mental health problems will have lower social-emotional development than their counterparts.

3. Whether or not enrollment in Head Start positively influences the mental health of either child or parents and whether this effect varies between families living in rural and urban communities. It is hypothesized that that families who participate in Head Start will demonstrate greater positive mental health outcomes, with a potentially stronger impact among families living in rural communities.

METHODS

Study Sample Based on Head Start Impact Study (HSIS) Data

In the 1998 reauthorization of Head Start, Congress mandated that the U.S. Department of Health and Human Services (DHHS) determine the impact of Head Start on the children it serves. The Head Start Impact Study (HSIS) is based on the random assignment of children and families entering Head Start at the beginning of the 2002–2003 program year to either a Head Start (program) group, or a non-Head Start (control) group. Data collection began in fall 2002 and continued through 2006, following children from program application through the spring of their 1st grade year (US DHH, ACF, 2013). The current study used the one year cohort of HSIS data in 2003. The outcome measured in 2003 is the only cohort year that can determine the impact of one year of Head Start enrollment for all children in HSIS. In spring 2003, 3780 families remained in the Head Start Impact Study and provided measured outcomes. Among these 3780 families, 3,172 families (83.9%) lived in urban area and 608 families (16.1%) families lived in rural area. Families who attended Head Start consists of 1,903 urban families (60%) and 359 rural families (59%).

Measures

Maternal depression.

The shortened, 12-item, version of the Center for Epidemiological Studies' Depression Scale (CES-D) was used to measure maternal depression (Seligman, 1993). The CES-D was originally published by Radloff (1977) and asks caregivers to rate how often over the past week they experienced symptoms associated with depression, such as restless sleep, poor appetite, and feeling lonely. Response options ranged from 0 to 3 (0 = rarely or none of the time, 1 = some or little of the time, 2 = moderately or much of the time, 3 = most or almost all the time). Total scores were computed by adding all scores for 12 items (Ranges 0 to 36).

Children's Social-emotional outcomes.

Child-parent relationship. Children's social-emotional functioning within the parent-child relationship was measured by an instrument adapted from the Child-Parents Relationship instrument originally developed by Robert Pianta (Pianta, 1992). The Parent-Child adaptation of this instrument was also used in the NICHD Study of Early Child Care. Parents were asked to rate the child on seven items, such as, "if upset, this child will seek comfort from me," or "this child easily becomes angry at me." Parents rated the child on each item using a five-point response format ranging from one (definitely does not apply) to five

(definitely applies). The total positive relationship scale contains 15 items, and the scores can range from 15 to 75, with higher scores indicating a more positive child-parent relationship.

Behavioral problems. To measure problem behavior of children, parents were asked to rate their children on items pertaining to aggressive or defiant behavior such as, “Hits and fights with others,” “Has temper tantrums or hot temper,” and “Is disobedient at home.” Other items addressed inattentive or hyperactive behavior, such as, “Can’t concentrate, can’t pay attention for long,” and “Is very restless and fidgets a lot.” A final group of items addressed shy, withdrawn, or depressed behavior (e.g., “Feels worthless or inferior,” and “Is unhappy, sad, or depressed”). Parents rated each item according to whether the behavioral description was “not true,” “sometimes true,” or “very true” of the child. The Total Behavior Problem scale contained 14 items and the total scale score could range from 0 (all items marked “not true”) to 28 (all items marked “very true”), higher scores indicated more behavioral problems.

Baseline Variables

Child characteristics.

Children's enrollment age in Head Start (at age 3 or 4), gender (male vs female), special needs status , and social skills prior Head start enrollment were included in the analysis.

Maternal Characteristics.

Maternal race/ethnicity (Hispanic, African-American, and White) and immigration status were measured.

Family characteristics.

Monthly family income (M = $1,862, SD $1038), primary language speaking at home (70%) and household risk index were included. Household risk index was determined by the number of the following characteristics reported in the baseline parent interview: (1) receipt of Temporary Assistance for the Needy Families (TANF) or Food Stamps, (2) neither parent in household has high school diploma or a GED, (3) neither parent in household is employed or in school, (4) the child’s biological mother/caregiver is a single parent, and (5) the child’s biological mother was age 19 or younger when child was born. Three categories were created: low/no risk (0-2 risk factors), moderate risk (3 risk factors), and high risk (4-5 risk factors). All baseline variables were measured when children were 3-4 years old during in-person parent interviews that were conducted in the home of each study child at the fall 2002 (Fall 2002).

Community Characteristics

Informal social support. Mothers were asked to rate how helpful the following individuals were: spouse, mother, father, grandparents, other relatives, friends, social workers, religious groups, and others. Mothers responded to questions such as “how helpful is your spouse/partner?,” “how helpful are social

workers?," and "how helpful are religious/social group members?" using a rating scale from 1 (not very helpful) to 3 (very helpful). Total informal social support scores were comprised by adding the perceived helpfulness for each item.

Formal social service use. Mothers were asked whether they received any of the following services over the past year (1 = yes, 0 = no): income assistance, nutrition assistance, housing assistance, utilities, job-training, alcohol/drug abuse services, mental health services, family violence services, and foster care payments. Based on total social service utilization scores (range 0 to 7), formal social service use was classified: those who have ever used social services (57%) and those who have never used any social services (43%).

Analysis

First, t-tests (for continuous variables) and Chi-square tests (for categorical variables) were conducted to compare study variables between urban and rural families. Second, ordinary least squares (OLS) regression was used to examine whether maternal depression differs by residential status (urban vs. rural), controlling for baseline (child, parents, and family characteristic) variables. Second, to identify factors associated with maternal depression, interaction effects were tested between residential location and race/ethnicity, child age, immigration status, social support, and social service utilization. Third, to assess the association between maternal depression and children's socio-emotional skills, maternal depression scores were included in the model as predictors of children's socio-emotional outcomes. Fourth, to evaluate the impact of Head Start on maternal depression and children's socio-emotional skills, Head Start enrollment status was added to the models, followed by interaction effects between residential location and Head Start enrollment, controlling for all baseline variables. All analyses were conducted using SPSS 28.

RESULTS

Descriptive analysis

Table 1 presents sample differences based on residential location (urban vs. rural). Compared to children in urban areas, those in rural areas were younger on average (3.4 [.05] vs. 3.5 [.05], $p < .001$) and exhibited more positive early social skills (12.4 [1.6] vs. 12.2 [1.8], $p < .001$). Racial composition also varied significantly; a higher proportion of African American families resided in urban areas (34.7% vs. 2.9%), while White families were more concentrated in rural areas (8.5% vs. 23.5%, $p < .001$). Urban areas had a greater proportion of immigrant families (21.0% vs 8.0%, $p < .001$) and less English language use (67% vs 88%, $p < .001$). In contrast, rural families reported greater informal social support (9.1 vs. 7.9, $p < .001$) but relied less on formal social services (58% vs 51%) than their urban counterparts.

Associations between Maternal Depression and Geographical location

Table 2 (Model 1) shows that mothers living in rural areas reported significantly higher levels of depression compared to those in urban areas (b = -0.343, SE = 0.134, p= .010). Several factors were associated with increased maternal depression, including having a male child (b = -0.193, SE = 0.097, p < .001), having a child with special needs (b = 0.785, SE = 0.147, p < .001), and having a child with lower early social skills (b =- 0.185, SE = 0.0272, p < .001).

Interestingly, recently immigrated mothers (b = -0.359, SE = 0.164, p < .05) and mothers who did not speak English (b = 1.827, SE = 0.1754, p < .001) reported lower depression scores. Lower family income (b = -0.489, SE = 0.044, p < .001) and greater household risk factors (b = 0.365, SE = 0.082, p < .001) were positively associated with higher maternal depression. Additionally, social service use (b = 0.998, SE = 0.059, p < .001) was linked to higher depression scores.Racial and ethnic differences were also observed. Compared to White mothers, African American (b = -0.758, SE = 0.127, p < .001) and Hispanic (b = -0.563, SE = 0.150, p < .001) mothers reported lower depression scores.

Significant interaction effects were found between geographical location and baseline variables. As shown in Table 2, Model 2, African American mothers in rural areas experienced significantly higher depression than their urban counterparts (18.1 vs 16.9), whereas White mothers showed no significant differences in depression scores between rural and urban areas (17.9 for both rural and urban, Figure 1). Similarly, recently immigrated mothers in rural areas had higher depression scores than immigrant mothers in urban areas (Table 2, Model 3). Additionally, mothers with younger children reported higher depression levels when living in rural rather than urban areas (18.1 vs 17.1, Figure 2) while mothers with older children had similar depression scores between rural and urban (17.3 vs 17.4). The impact of informal social support and formal social service use on maternal depression was greater in rural areas (Table 2, Model 5). As shown in Figure 3, mothers in rural areas with less informal social support had significantly higher depression scores than those with more informal support (18.8 vs 17.4). This difference was less pronounced among mothers in urban areas (17.7 vs 17.3). Although social service use was positively associated with maternal depression, mothers in rural areas who did not utilize social services reported better mental health outcomes than those who did (Table 2, Model 6)

Associations Among Children's Social-emotional Development and Geographical Location, Maternal Depression, and Head Start Enrollment

Table 3 shows that children living in urban areas had more positive child-parent relationship scores (b = 0.639, SE = 0.198, p < .001) than those in rural areas. Maternal depression significantly influenced children's socio-emotional outcomes. Children whose mothers had higher levels of depression exhibited more behavioral problems (b = 0.168, SE = 0.004, p < .001) and lower child-parent relationship scores (b = -0.362, SE = 0.0115, p < .001). Participation in Head Start was associated with more positive socio-emotional outcomes. Children enrolled in Head Start had lower behavioral problem scores (b = -0.204, SE = 0.055, p < .001) and higher child-parent relationship scores (b = 0.295, SE = 0.148, p < .001) compared to those who were not enrolled. Moreover, the impact of Head Start was greater for children living in rural areas than for those in urban areas (Table 3). As shown in Figures 4 and 5, the difference between Head

Start and Non-Head Start was greater in rural than urban area for children's behavioral scores (6.9 vs 6.4; 6.6 vs 6.5) and positive child-parent relationship scores (61.6 vs 62.6; 62.8 vs 62.9).

Male children and children with special needs status were likely to have lower social-emotional skills. Children who had more positive early social skills had higher social skills. Children from recently immigrated families and those not speaking English at home had significantly lower social skills than their counterparts. Children living in lower family income and those with higher household risk factors had lower social skills.

Results

This study looked at whether or not there is a difference between the mental health of children and parents in rural communities compared to urban communities. Results indicate that there are significant differences in depression rates for mothers in rural and urban areas across several areas. The overall depression scores are higher for mothers living in rural areas compared to urban areas. In urban areas, white mothers have the highest rates of depression, while in rural areas, African-American mothers have the highest rates of depression. For English speaking mothers, depression rates are higher in both urban and rural areas, but the prevalence of this is higher in rural areas than in urban. Finally, mothers with younger children living in rural areas had higher rates of depression than mothers with slightly older children. There was not a significant difference in urban areas.

Finally, this study looked at the whether enrollment in Head Start positively influences the mental health of either the child or parent and how this effect varies between families living in rural and urban communities. Results show that Head Start does positively impact the development of social skills in young children and that these positive impacts are greater in rural areas than in urban areas. Children in rural areas had lower rates of behavioral problems and higher rates of positive social skills when enrolled in Head Start than those who did not enroll in Head Start. The difference between the socio-emotional skills for urban children was not significantly different when comparing those who enrolled Head Start and those who did not. The study results indicate that Head Start enrollment has no impact on maternal depression scores.

DISCUSSION

Mental Health in Rural Neighborhood

The current study found that children and parents living in rural neighborhoods report higher mental health problems than those living in urban areas. One key contributing factor is the limited availability of resources for low-income families in rural settings, which is often linked to higher poverty rates. Many individuals in rural areas lack the knowledge to recognize mental health issues or seek professional help. Story et al. (2016) found that low mental health literacy is prevalent in rural communities, meaning parents may not be aware of their need for mental health treatment or how to access appropriate services. Additionally, rural areas often experience a shortage of mental health professionals, further

complicating access to care. Given the dispersed nature of rural populations, mental health services are frequently located far from where families reside, posing logistical and financial barriers. Even when individuals recognize the need for help, stigma remains a significant obstacle. In small, close-knit communities, concerns about confidentiality breaches and social consequences deter individuals from seeking treatment (Blackstock, 2018). Huscroft-D'Angelo, January, and Duppong Hurley (2018) found that over a third of participants in rural communities cited confidentiality concerns as a primary barrier to treatment, leading many parents to struggle with their mental health in silence. Practical challenges also hinder access to mental health services. Long travel distances, limited transportation options, and the need for childcare during appointments make it difficult for rural families to obtain care (Ge et al., 2020). While telehealth services offer a potential solution, unreliable internet access remains a problem in many rural areas, with up to 22% of rural Americans lacking broadband internet access (González et al., 2022; U.S. Department of Agriculture, n.d.). These barriers contribute to a cycle where mental health needs remain unmet, exacerbating mental health issues for both parents and children.

Parents who cannot access mental health treatment may continue to struggle, which negatively impacts their parenting and their relationships with their children. Studies indicate that parents with mental health conditions often exhibit reduced sensitivity to their children's needs, straining the parent-child bond (Deans, 2023). Furthermore, rural families facing economic stressors and limited resources may be more likely to adopt authoritarian or harsh parenting styles (Lim & Janicke, 2013). Research shows that harsh parenting correlates with aggression and behavioral challenges in children (Smokowski, 2014), whereas positive parenting practices promote healthier parent-child relationships and better mental health outcomes (Hickey et al., 2018). Financial strain can also contribute to domestic violence and neglect, further exacerbating the adverse effects on children.The cumulative impact of poverty, mental health struggles, limited access to resources, and harsh parenting styles creates an environment where both parents and children in rural communities experience heightened mental health challenges. Addressing these barriers through improved mental health literacy, increased availability of professionals, enhanced telehealth infrastructure, and community-based support systems is essential to improving mental health outcomes in rural areas.

Mental Health Characteristics in Rural Communities

The current study finds that among families in rural, low-income communities, African American mothers experience the highest rates of depression compared to their counterparts in urban areas. This disparity may be attributed to social isolation, as rural communities across America are predominantly white, with only 8% of the population identifying as African American. Additionally, racism in these communities has been shown to increase the risk of mental illness among Black youth (Pestaner et al., 2024). Further research is necessary to explore how these factors contribute to mental health disparities and how best to address them. We also found that in rural communities, the availability of social services, informal social support networks, and caregiving responsibilities for young children significantly impact parental well-being. Parents living in poverty with limited social support have a reduced capacity to manage life changes, including those related to work, family, and health, leading to

increased stress and mental health challenges (Ontai et al., 2018). In many rural areas, social services may be inadequate or inaccessible, further compounding parental stress and negatively affecting mental health. Research suggests that a lack of available social services for parents and families in rural communities can undermine parenting abilities and increase mental health concerns (Miller, Votruba-Drzal, & Coley, 2019).

Informal social supports, including family and friends, play a significant role in providing childcare and other assistance to low-income families in rural communities. These informal networks offer flexible care options, including evenings, weekends, and holidays (Katras, Zuiker, & Bauer, 2004). However, while these networks provide essential support in the absence of sufficient formal services, they can also be unreliable at times. In rural areas, only 16% of families utilize center-based childcare compared to 38% in urban areas (National Advisory Committee on Rural Health and Human Services [NACRHHS], 2023). Additionally, formal childcare options are often limited. NACRHHS (2023) determined that 55% of rural children under the age of five who are eligible for childcare services live in child care deserts.

This issue is particularly severe for families for younger children, as there are fewer available spots for younger children in childcare programs, including Early Head Start. Currently, Early Head Start can only accommodate one in ten eligible children, while Head Start serves one in three (National Head Start Association, 2022). Moreover, 30% of Early Head Start slots are designated for home-visiting programs, which provide essential resources and support for families but do not address the immediate childcare needs of parents with young children. The stress of unmet childcare needs, combined with limited formal and informal options, significantly impacts rural families. This may explain why mothers of younger children and those with less informal support report higher rates of depression than those with older children, as securing adequate care for infants and toddlers is particularly challenging in rural settings.

Expanding support for Early Head Start-eligible families for younger children in rural communities may directly improve parental mental health. Further research should explore effective interventions to enhance access to formal and informal social services for rural families, thereby addressing these disparities and improving overall well-being.

Head Start Impact on Mental Health on Parents and Children

The study results indicate that children who enrolled Head Start show higher social emotional skills than children who did not participate in Head Start. However, Head Start enrollment has no significant impact on maternal depression scores. This is consistent with previous studies that also showed no significant impact on maternal depression scores related to family enrollment in Head Start programming (Vogel et al., 2013). This lack of impact on maternal depression scores may be related to a parent's limited ability to participate in Head Start programming, above allowing their child to attend. For parents with children enrolled in Head Start, there are many barriers that prevent the parent's ability to participate in parental components of intervention. As many as 56% percent of Head Start parents in one study, reported that the Head Start programming interferes with work (Ansari & Gershoff, 2015). Parents may also struggle to

actively participate in Head Start parent targeted programming due to a variety of factors including lack of basic utilities in the home, language barriers, depression symptoms, and frequent moves (Lamb-Parker et al., 2001). Additional barriers might be that Head Start parents might have unmet child care needs, transportation, and interference with school or other training (Ansari & Gershoff, 2015; Lamb-Parker et al., 2001). These identified barriers are consistent with parent reported barriers for accessing mental health treatment and it is expected that these barriers may be even more significant for rural Head Start families. Another barrier specific to rural Head Start parents is the limited availability of Head Start programs in rural communities. A majority of Head Start centers are located in urban and suburban areas, with only 31% located in rural areas (McCoy et al. (2016). With so few Head Start programs available in rural communities, the time and distance travelled by Head Start families to attend parent programming in addition to child attendance may be an insurmountable barrier.

Another factor in the limited impact of Head Start programming on maternal mental health is that the programming targeted at parents, is often focused on working with the child, rather than personal development of the parent. In the study of Latino families with children enrolled in Head Start by Duch et al. (2019), parents learned the importance of making time for their children, how to understand their children's needs and in increased ability for self-regulation. These self-regulation skills could impact parental mental health, but is likely to have a greater impact on the child through more consistent parenting style rather than directly reducing parental depression symptoms. Most Head Start programs focus solely on children's outcomes including school readiness rather than solely on parents. Further, research into the home visiting program, Teachers as Parents, showed that increased rates of self-reported happiness were only noted for families with moderate income, but not low or very low income (Wagner, Spike, & Linn, 2002). This suggests that for parents in low-income households, parental depression and other mental health may be more significantly impacted by factors not addressed by Head Start. These factors may include practical needs such as housing, food, long work hours, financial assistance, and other household risk factors. Participation in Head Start programming, such as the CARING program has also helped to improve relationships between parent and child (Duch et al., 2019). When parents are able to connect meaningfully with their children, there will be reduced stress in the parent-child relationship. This decrease in stress and increase in positive parent-child interactions could have a positive impact on parental mental health.. As a multigenerational model, Head Start has a unique opportunity to positively impact both the mental health and wellness of the child and parents. Including mental health related curriculum specifically targeting parents and removing barriers to participate in parental components of workshop could be beneficial for the parents, the children, and the family as a whole.

The current study also found that the impact of Head Start programming is more prominent for children living in rural areas than for children in urban areas. This may be because children in rural communities have increased rates of social risk factors, such as poverty, low parental education, and single parent homes and children with these factors tend to benefit more from high-quality childcare than children without (Burchinal et al., 2000). Another possibility is the differing availability of community resources, such as libraries, museums, and social services between urban and rural communities. Research

suggests that limited access to these community resources has a negative impact on the academic skills for poor children and that parents are less able to provide stimulating and responsive parenting without access to these resources (Miller, Votruba-Drzal & Coley, 2019). Research further shows that there is a greater unmet need for center-based child care in rural areas (Gordon & Chase-Lansdale, 2001) which are likely to provide more quality learning experiences. Children living in rural community entering Head Start may not have had exposure to any formal early childhood education and are less likely to have benefitted from education at libraries, museums, etc. This deficit amongst poor, rural children allows for a more significant positive impact when exposed to Head Start programming. Possibly due to compensation effects, children in rural community who enrolled Head Start significantly more benefits than children who did not enroll Head Start.

CONCLUSIONS

Parents and children living in rural communities experience higher rates of mental health problems compared to those in urban areas. Within rural populations, parents of younger children, minority parents, those with limited social support, parents of children with disabilities, recent immigrants, and families living in poverty are particularly at risk for elevated depression and stress. Rural parents often face overwhelming levels of stress due to concerns about their children's health and safety, financial strain, and social isolation (Murthy, 2024). When combined with the effects of rural poverty, these stressors increase the likelihood of mental health conditions that negatively impact both parents and children. Although Head Start programs are designed to provide mental health interventions for both children and parents, participation in Head Start has not consistently resulted in improved mental health outcomes among these families.

Policies and programs should prioritize expanding access to Head Start (and Early Head Start) in rural areas, particularly for families with younger children, African American mothers, and recently immigrated mothers, as these groups experience higher depression levels. Head Start programs can incorporate parental mental health screening, provide trauma-informed and culturally responsive services, and strengthen referrals to local mental health providers. Enhancing informal support networks through parent groups, peer mentoring, and community engagement activities can mitigate the effects of isolation and low social support in rural community. Programs should also address structural barriers by offering transportation, flexible hours, and telehealth services to reach geographically isolated families. For parents of children with special needs or lower early social skills, Head Start can provide parent training, targeted behavioral support, and counseling services. Additionally, integrating preventive mental health services rather than solely reactive interventions, and coordinating formal social service use with supportive programming, can reduce stress and depression, ultimately improving both parental well-being and children's social-emotional development among low income families living in rural community.

References

Ansari, A. & Gershoff, E. (2015, November 13). Parent involvement in head start and children's development: indirect effects through parenting. *Journal of Marriage and Family, 78* (2). 562-579. https://doi-org.proxy2.cl.msu.edu/10.1111/jomf.12266

Beehler, S., Corcoran, F., & Michaels, C. (2023). Rural community stress: A review of the literature. *Journal of Rural and Community Development, 18*, 32-50.

Blackstock, J.S., Chae, K.B., Mauk, G.W., & McDonald, A. (2018, Winter). Achieving access to mental health care for school-aged children in rural communities: A literature review. *Rural Educator, 39* (1), 12-25. https://doi.org/10.35608/ruraled.v39i1.212

Burchinal, M.R., Peisner-Feinberg, E., Bryant, D.M., & Clifford, R. (2000). Children's social and cognitive development and child-care quality: Testing for differential associations related to poverty, gender, or ethnicity. *Applied Developmental Science, 4* (3), 149-165. 10.1207/S1532480XADS0403_4

Cree, R.A., Bitsko, R.H., Robinson, L.R., Holbrook J.R., Danielson, M.L., Smith, C., Kaminski, J.W., Kenney, M, Peacock, G. (2018, December 21). Health care, family and community factors associated with mental, behavioral, and developmental disorders and poverty among children aged 2-8 years –United States, 2016. *Morbidity and Mortality Weekly Report, 67* (50), 1377-1383. https://www.cdc.gov/mmwr/volumes/67/wr/pdfs/mm6750a1-H.pdf

Dean, C. (2018, April 23). Maternal sensitivity, its relationship with child outcomes, and interventions that address it: A systematic literature review. *Early Child Development and Care, 190* (2). https://doi.org/10.1080/03004430.2018.1465415

DiGregorio, N. & Seiph, J. (2022, June 16). Small town politics, stigma, and services: Understanding the unique needs of rural families post-reunification. *Journal of Social Service Research, 48* (4), 460-471. https://doi.org/10.1080/01488376.2022.2087825

Domitrovich, C.E., Cortes, R.C., & Greenberg M.T. (2007, January 30). Improving young children's social and emotional competence: A randomized trial of the preschool "PATHS" curriculum. *The Journal of Primary Prevention, 28* (2), 67-91. DOI:10.1007/s10935-007-0081-0

Duch, H., Marti, M., Wu, W., Snow, R., & Garcia, V. (2019, February). CARING: The impact of a parent-child, play-based intervention to promote latino head start children's social- emotional development. *The Journal of Primary Prevention*, 40, 171-188. https://doi.org/10.1--7/s10935-019-00542-7

Edwards A, Hung R, Levin JB, Forthun L, Sajatovic M, McVoy M. (2023, July). Health disparities among rural individuals with mental Health conditions: A systematic literature review. *Rural Mental Health 47*(3):163-178. doi: 10.1037/rmh0000228. Epub 2023 May 11. PMID: 37638091; PMCID: PMC10449379.

Evans, G.W. & Saegert, S. (2000). *Residential crowding in the context of inner city poverty.* Springer US. https://doi-org.proxy1.cl.msu.edu/10.1007/978-1-4615-4701-3_20

Farrigan, T., Genetin, B., Sanders, A., Pender, J., Thomas, K. L., Winkler, R., Cromartie, J. (2024). *Rural America at a glance* (Report No. EIB-282). U.S. Department of Agriculture, Economic Research Service. https://doi.org/10.32747/2024.8722498.ers

Fearon, R.P., Bakermans-Kranenburg, M.J., van IJzendoorn, M.H., Lapsley, A-M., & Roisman, G.I. (2010, March/April). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development, 81* (2). 435-456. DOI: 10.1111/j.1467-8624.2009.01405.x

García-Carrión, R., Villarejo-Carballido, B., & Villardón-Gallego, L. (2019). Children and adolescents mental health: A systematic review of interaction-based interventions in schools and communities. *Frontiers in Psychology*, 10, 918. https://doi.org/10.3389/fpsyg.2019.00918

Gassman-Pines, A., Oltmans Ananat, E., & Fitz-Henley, J. (2021). Longitudinal relations between parental strain, parent–child relationship quality, and child well-being during the unfolding COVID-19 pandemic. *Child Psychiatry & Human Development, 53*(4), 985- 996. https://doi.org/10.1007/s10578-021-01232-4

Gordon, R.A. & Chase-Lansdale, P.L. (2001). Availability of child care in the united states: A description and analysis of data sources. *Demography*, *38* (2), 299-316.

Graaf, G., Hooley, C., Baiden, P., & Keyes, L. (2022, December 22). Parent reported barriers to children's mental health services in the United States. *Social Work in Mental Health, 21* (4), 360-382. https://doi.org/10.1080/15332985.2022.2155503

Hung, P., Probst, J.C., Shih, Y., Ranganathan, R., Brown, M.J., Crouch, E., & Eberth, J.M. (2022, November 2). Rural-urban disparities in quality of inpatient psychiatric care. *Psychiatric Services, 74* (5). https://doi.org/10.1176/appi.ps.2022027

Hickey, G., McGilloway, S., Leckey, Y., & Stokes, A. (2018, October 20). A universal early parenting education intervention in community-based primary care settings: Development and installation challenges. *Education Sciences, 8* (178). doi:10.3390/educsci8040178

Huscroft-D'Angelo, J., January, S.A., & Duppong Hurley, K.L. (2018) Supporting parents and students with emotional and behavioral disorders in rural settings: Administrator perspectives. *Rural Special Education Quarterly, 37* (2), 103-112. https://doi- org.proxy1.cl.msu.edu/10.1177/8756870517750827

Ivey-Stephenson A.Z., Crosby A.E., Jack S.P., Haileyesus T., Kresnow-Sedacca M. (2017, October 6) Suicide trends among and within urbanization levels by sex, race/ethnicity, age group, and mechanism of death - united states, 2001–2015. *Surveillance Summaries 66* (18), 1–16. DOI: http://dx.doi.org/10.15585/mmwr.ss6618a1

Katras, M., Zuiker, V.S. & Bauer, J.W. (2004). Private safety net: Childcare resources from the perspective of rural low-income families. *Family Relations, 53* (2), 201-209.

Kvalevaag, A.L., Ramchandani, P.G., Hove, O., Eberhard-Gran, M., Assmus, J., Havik, O.E., Sivertsen, B. & Biringer, E. (2014, December 13). Parent's prenatal mental health and emotional, behavioral and social development in their children. *Child Psychiatry & Human Development, 46*, 874-883. https://doi.org/10.1007/s10578-014-0527-6

Lamb-Parker, F., Piotrkowski, C.S., Baker, A.J.L., Kessler-Sklar, S., Clark, B., & Peayy, L. (2001). Understanding barriers to parent involvement in head start: A research- community partnership. *Early Childhood Research Quarterly, 16*, 35-51. https://doi.org/10.1016/S0885-2006(01)00084-9

Leiten, P., Raaijmakers, M.A., de Castro, B.O., Van den Ban, E., & Matthys, W. (2017) *Journal of Clinical Child & Adolescent Psychology, 46* (1), 59-73. DOI:10.1080/15374416.2015.1038823

Lim, C.S. & Janicke, D.M. (2013) Barriers related to delivering pediatric weight management interventions to children and families from rural communities. *Children's Health Care, 42*, 214-230. DOI: 10.1080/02739615.2013.816596

McCoy, D.C., Morris, P.A., Connors, M.C., Gomez, C.J. & Yoshikawa, H. (2016, March-April). Differential effectiveness of head start in urban and rural communities. *Journal of Applied Developmental Psychology, 43*, 29-42. https://doi.org/10.1016/j.appdev.2015.12.007

McDaniel, M., & Lowenstein, C. (2013, April 17). *Depression in low-income mothers of young children: Are they getting the treatment they need?* The Urban Institute. https://www.urban.org/research/publication/depression-low-income-mothers-young-children-are-they-getting-treatment-they-need

Miller, P., Votruba-Drzal, E., & Levine Coley, R. (2019). Poverty and academic achievement across the urban to rural landscape: Associations with community resources and stressors. RSF: *The Russell Sage Foundation Journal of the Social Sciences, 5*(2), 106-122. https://doi.org/10.7758/RSF.2019.5.2.06

Morales, D.A., Barksdale, C.L., Beckel-Mitchener, A.C. (2020, May 4). A call to action to address rural mental health disparities. *Journal of Clinical and Translational Science 4* (5), 463-467. doi: 10.1017/cts.2020.42

Murthy, V.H. (2024). Parents Under Pressure: The U.S. Surgeon General's Advisory on the Mental Health and Well-Being of Parents. https://www.hhs.gov/sites/default/files/parents-under-pressure.pdf

National Advisory Committee on Rural Health and Human Services (2023, January). *Childcare need and availability in rural areas* [Policy Brief]. Health Resources and Services Administration. https://www.hrsa.gov/sites/default/files/hrsa/advisory- committees/rural/nac-rural-child-care-brief-23.pdf

Needles-Fletcher, C., Garasky, S.B., Jensen, H.H., & Nielsen, R.B. (2010) Transportation access: A key employment barrier for rural low-income families. *Journal of Poverty*, (14), 1540- 7608. DOI:

10.1080/10875541003711581

Neumann, S. & Soulliere, J. (2018). *Growing up rural in America: U.S. compliment to the end of childhood report 2018*. Save the Children. https://image.savethechildren.org/2018-end- of-childhood-report-us.pdf-ch11045072.pdf/86d47350h12q65064rphlfwbvw254gm7.pdf

Ontai, L. L., Barnett, M. A., Smith, S., Wilmoth, J. D., & Yancura, L. (2018). Understanding family well-being in the context of rural poverty: Lessons from the rural families project. *Family Science Review*, *22*(1).

Penna, A.L., de Aquino, C.M., Pinheiro, M.S.N., Ferreira do Nascimento, R.L., Farias-Antúnez, S., Sá Araújo, D.A.B., Mita, C., Machado, M.M.T., & Castro, M.C. (2023, February 24) Impact of the COVID-19 pandemic on maternal mental health, early childhood development, and parental practices: A global scoping review*. BMC Public Health 23* (1). 388. https://doi.org/10.1186/s12889-023-15003-4

Pestaner, M.C., Crumb, L., Crowe, A., & Cowan Cuthrell, K. (2024, September) The role of protective factors in moderating the association between racism and suicidal ideation or depression among rural black youth: A scoping review. *Youth and Society, 56* (6), 1114- 1166. https://doi-org.proxy2.cl.msu.edu/10.1177/0044118X231222032

Pierce, M., Hope, H., Ford, T., Kolade, A., Gellatly, J., Osam, C.S., Perchard, R., Kosidou, K., Dalman, C., Morgan, V., Di Prinzio, P. & Abel, K. M. (2019). Effects of parental mental illness on children's physical health: Systematic review and meta-analysis. *The British Journal of Psychiatry, 215*(1), 14-22. https://doi.org/10.1192/bjp.2019.216

Risi, A., Pickard, J.A., & Bird, A.L. (2021, December 16). The implication of parent mental health and wellbeing for parent-child attachment: A systematic review. *PLOS ONE 16*(12): e0260891. https://doi.org/10.1371/journal.pone.0260891

Schroeder, S.M. & Peterson, M-L. (2017). Identifying variability in patient characteristics and prevalence of emergency department utilization for mental health diagnoses in rural and urban communities. *The Journal of Rural Health, 34*, 368-376. doi: 10.1111/jrh.12282

Smokowski, P.R., Bacallao, M.L., Cotter, K.L. & Evans, C.B.R. (2014, June 1). The effects of positive and negative parenting practices on adolescent mental health outcomes in a multicultural sample of rural youth. *Child Psychiatry & Human Development, 46*, 333- 345. https://doi.org/10.1007/s10578-014-0474-2

Stallard, P., Norman, P., Huline-Dickens, S., Salter, E., & Cribb, J. (2004). The effects of parental mental illness upon children: A descriptive study of the views of parents and children. *Clinical Child Psychology and Psychiatry, 9* (1), 39-52. DOI:10.1177/1359104504039767

Steele, H., Bate, J., Steele, M., Dube, S. R., Danskin, K., Knafo, H., Nikitiades, A., Bonuck, K., Meissner, P., & Murphy, A. (2016). Adverse childhood experiences, poverty, and parenting stress. *Canadian Journal of*

Behavioural Science / Revue canadienne des sciences du comportement, 48(1), 32–38. https://doi.org/10.1037/cbs0000034

Story, C.R., Kirkwood, A.D., Parker, S., & Weller, B.E. (2016, March). Evaluation of the better todays/better tomorrows youth suicide prevention program: Increasing mental health literacy in rural communities. *Best Practices in Mental Health, 12*(1), 14.

Stracke, M., Heinzl, M., Müller, A. D., Gilbert, K., Thorup, A. A. E., Paul, J. L., & Christiansen, H. (2023). Mental health is a family affair—Systematic review and meta-analysis on the associations between mental health problems in parents and children during the COVID- 19 pandemic. *International Journal of Environmental Research and Public Health, 20*(5), 4485. https://doi.org/10.3390/ijerph20054485

Substance Abuse and Mental Health Services Administration (2024, July 30). *2023 National Survey on Drug Use and Health (NSDUH).* [Data file]. Retrieved from https://www.samhsa.gov/data/report/2023-nsduh-detailed-tables

Sweeney, S. & Wilson, C. (2023, February 3). Parental anxiety and offspring development: A systematic review. *Journal of Affective Disorders, 327*. 64-78. https://doi.org/10.1016/j.jad.2023.01.128

USDA (n.d.). *Broadband*. U.S. Department of Agriculture. Retrieved February 7, 2025, from https://www.usda.gov/sustainability/infrastructure/broadband

Van Schoors, M., Van Lierde, E., Steeman, K., Verhofstadt, L. L., & Lemmens, G. M. D. (2023). Protective factors enhancing resilience in children of parents with a mental illness: A systematic review. *Frontiers in Psychology*, 14, 1243784. https://doi.org/10.3389/fpsyg.2023.1243784

Vogel, C., Brooks-Gunn, J., Martin, A., & Klute, M.M. (2013). III. Impacts of early head start participation on child and parent outcomes at ages 2,3, and 5. *Monographs of the Society for Research in Child Development, 78* (1), 36-63. http://www.jstor.org/stable/23361872

Wagner, M., Spiker, D., & Linn, M.I. (2002, Summer). The effectiveness of the parents as teacher program with low-income parents and children. *Topics in Early Childhood Special Education, 22* (2). 67.81.

Tables

Tables 1 to 3 are available in the Supplementary Files section.

Figures

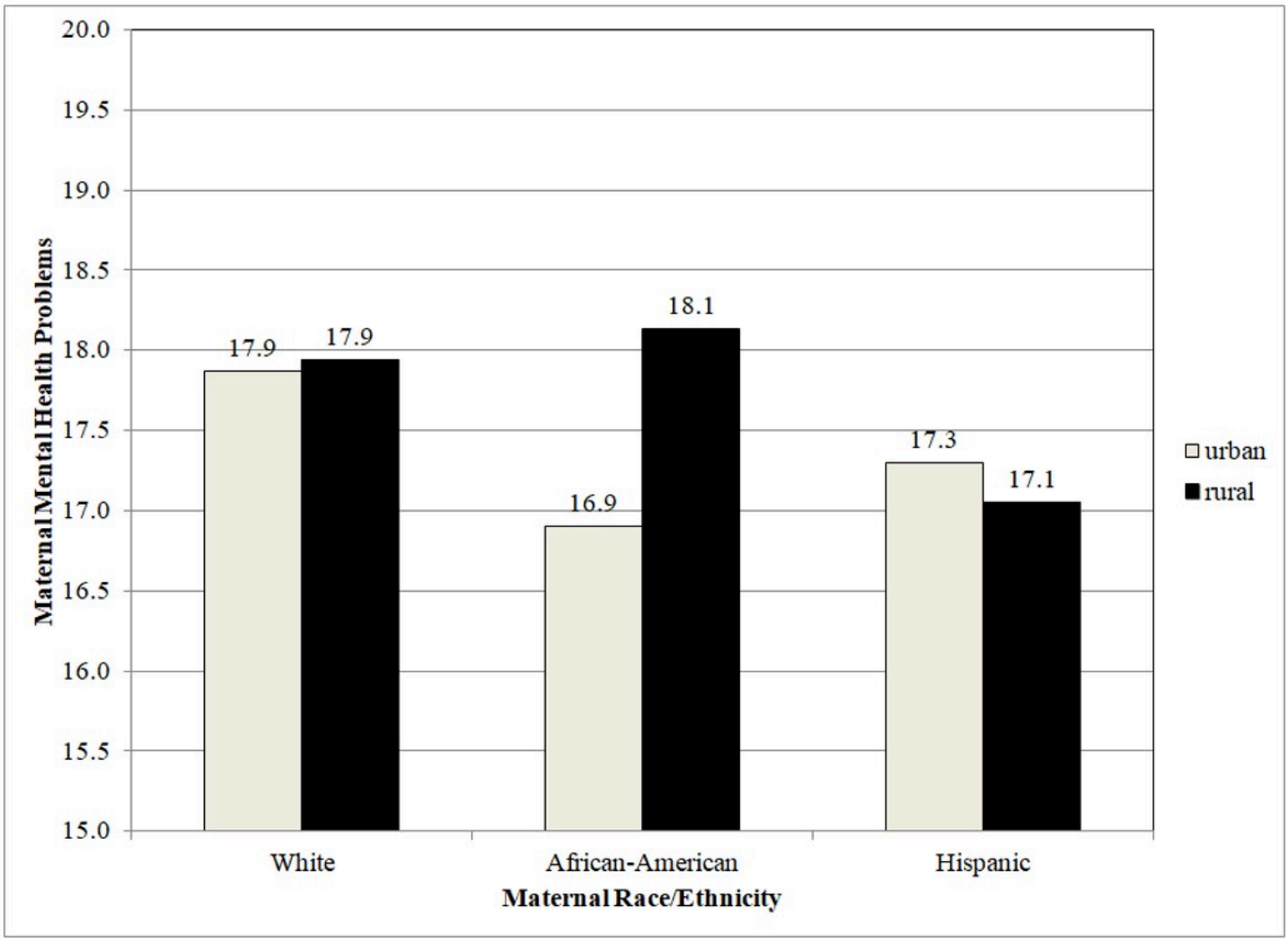

Figure 1

Geographical Disparity on Maternal Mental Health Problems by Maternal Race/Ethnicity

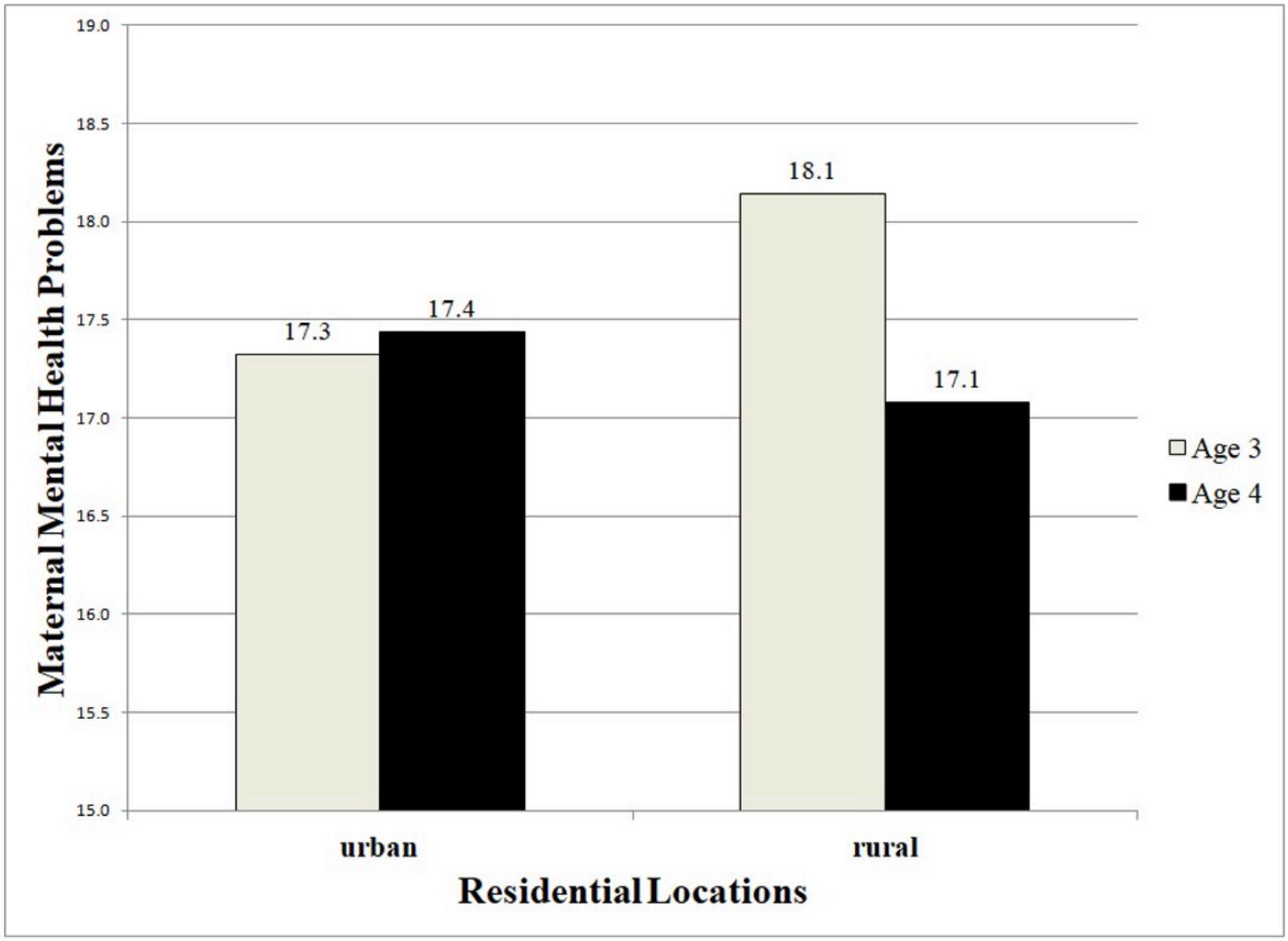

Figure 2

Geographical Disparity on Maternal Mental Health Problems by Children's Age

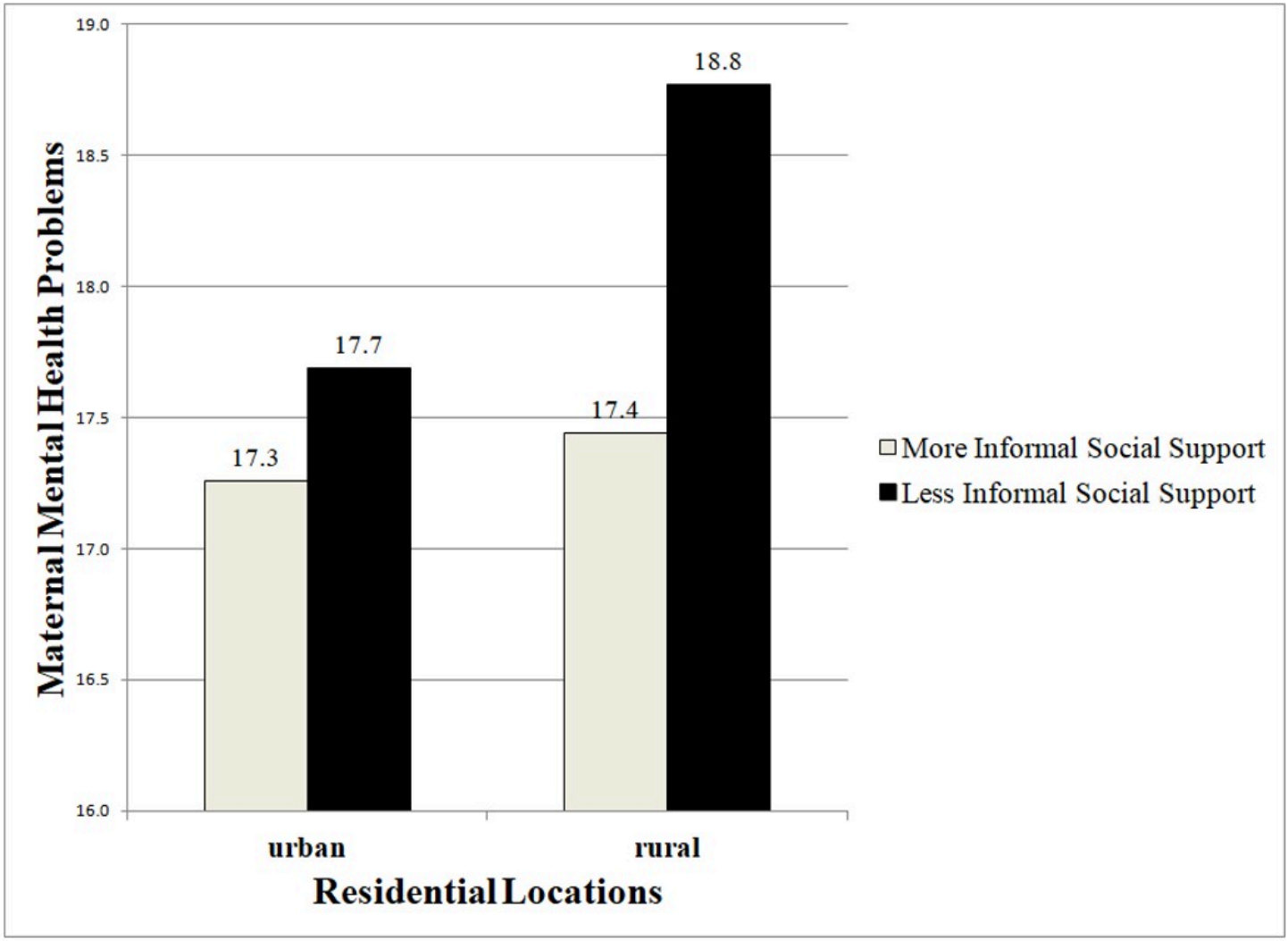

Figure 3

Geographical Disparity on Maternal Mental Health Problems by Informal Social Support