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Barriers to Healthy Eating and Physical Activity in the Mississippi Delta

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Abstract

Rural regions in the United States are home to approximately 15-20% of the country's population. These regions are often characterized by low access to medical care and high rates of disease and death. The literature has detailed the heterogeneous nature of rural health disparities, calling for research detailing regional factors that influence individual-level risk factors such as diet and physical activity. Approximately 54% of Mississippi residents live in rural areas. The Mississippi Delta population is largely characterized by high obesity rates, poor diet, and low levels of physical activity. This study presents detailed observations of the community-level barriers and facilitators to healthy eating and physical activity within Mississippi Delta communities, contextualizing the findings of a survey of 352 individuals across 25 communities to provide implications and direction for future activities aimed at reducing obesity in the Mississippi Delta. Study participants reported a high prevalence of overweight (22.9%) and obese (62.1%) body mass index classifications. Chi-square analyses revealed significant relationships between body mass index, age, and health conditions. Community food and physical activity environments and rural characteristics were largely implicated as barriers to fruit and vegetable consumption and physical activity. Next steps involve using qualitative research techniques to guide the development of programmatic strategies for reducing obesity through diet and physical activity in these communities and other rural regions in the United States.

Keywords: Healthy eating, physical activity, rural, Mississippi

Introduction

Approximately 15-20% of the population and 72-84% of the land area in the United States is defined as rural (Health Resources & Services Administration, 2021a). Rural regions are often characterized by low access to medical care and high rates of disease and death (Cosby et al., 2019; Dwyer-Lindgren et al., 2017; Meit et al., 2014). While rural regions in the Northeast and parts of the Midwest and West do not display comparatively increased risks for disease and death, a rural mortality penalty exists for populations in the rural South, particularly Appalachia and the Mississippi Delta regions (James et al., 2018; Meit et al., 2014; Murray et al., 2006; Miller & Vasan, 2021). These two southern regions have the lowest life expectancy in the United States, the highest overall mortality rates, and the highest mortality rates associated with cancer and heart, blood, and sleep disorders (Singh & Siahpush, 2014; James et al., 2018; Meit et al., 2014; Murray et al., 2006; United States Census Bureau, 2019). Within the state of Mississippi, approximately 54% of residents live in rural areas (Mississippi State University Extension, 2021). The Miller & Vasan (2021) review explicitly details the heterogeneous nature of rural health disparities and the factors that influence these disparities, calling for research detailing the regional contextual factors that influence individual-level risk factors such as diet and physical activity. These contextual factors include socioeconomic determinants of health such as the environmental, societal, neighborhood, and structural influences in communities (Hale et al., 2015; Patel et al., 2016; Roux et al., 2016).

Research has identified several factors which contribute to the health disparities observed in the Mississippi Delta. These factors include high obesity rates, poor diet, and low levels of physical activity include lack of health insurance, poverty, rurality, shortages of primary care providers, poor infrastructure, and older age (Chatterjee et al, 2005; Cohen, Cook et al., 2018; Cohen, Greaney et al., 2018; Connell et al., 2019; Long et al., 2018; Mendy & Vargas, 2015). These also perpetuate racial disparities in health due to the majority of Mississippi-Delta residents being African American (Chatterjee et al,, 2005; Cohen, Cook et al., 2018; Cohen, Greaney et al., 2018; Connell et al., 2019; Long et al., 2018; Mendy & Vargas, 2015). Recent literature suggests a strong presence of significant barriers to healthy eating and physical activity within Mississippi Delta communities. However, there has been a narrow focus on the socioeconomic characteristics of this population and their relation to health disparities (Chatterjee et al, 2005; Cohen, Cook et al., 2018; Cohen, Greaney et al., 2018; Connell et al., 2019; Long et al., 2018; Mendy & Vargas, 2015). The state of Mississippi has the highest prevalence of food insecurity (15.3%) in the nation, and higher rates of food insecurity are often observed in rural areas such as the Mississippi Delta (Coleman-Jensen et al., 2020; Hossfeld & Mendez, 2018). This equates to almost one-in-five individuals living in the Mississippi Delta lacking adequate access to enough food to support an active, healthy life. There is a plethora of information related to personal physical activity barriers which include lack of time, social support, fear of injury, affordability, and the availability of facilities (Division of Nutrition, Physical Activity, and Obesity, 2020). However, recent studies have shown the importance of community-level factors such as the built environment in promoting or hindering physical activity. Within the Mississippi Delta, these studies have observed the built environment as a barrier to physical activity (Robinson et al., 2014; Thomson et al., 2019). Attributes within the built environment that facilitate physical activity include aesthetics, trails, safety, parks, and destinations within walking distance (Frost et al., 2010).

Understanding the contributing factors within Mississippi Delta locales is necessary in addressing the health disparities observed among the region's population. At the community level, the relationships between the neighborhood food environment, physical activity environment, and obesity have been detailed in recent years. Multiple studies have identified a diverse availability of food retail destinations within walking distance as a facilitator to increased physical activity levels and improved weight status (Johnson et al., 2019; Oppert & Charreire, 2012). Briggs et al. (2019) found that median household income, low full-service restaurant density, and low fitness facility density were the strongest predictors of overall poor cardiovascular health behaviors among residents of a predominantly rural state. These findings suggest there are layers of complexity contributing to the high prevalence of obesity in the Mississippi Delta. However, the literature is lacking detailed accounts of the barriers and facilitators of healthy eating and physical activity from residents of Mississippi Delta communities. Understanding these factors may guide future interventions aimed at improving the food and physical activity environments.

Objective

This article details an assessment of the barriers and facilitators to healthy eating and physical activity across multiple communities in the Mississippi Delta, presenting findings from 352 survey responses from residents of 25 communities across seven Mississippi Delta counties. The counties included in this study were identified as "high obesity" counties with an adult obesity rate above 40%. This definition of "high obesity" was designated according to the cooperative agreement between Mississippi State University and the Centers for Disease Control and Prevention (Mississippi State University Extension, 2021). Each county has also been designated as a medically underserved service area by the U.S. Department of Health & Human Services (Health Resources & Services Administration, 2021b). Specifically, these counties possess Medical Underservice Scores between 19.7 and 39.8, indicating a substantial shortage of primary care physicians compared to other medically underserved areas in the United States (Health Resources & Services Administration, 2021b). This study presents detailed observations of the community-level barriers and facilitators to healthy eating and physical activity among residents of high obesity, Mississippi Delta communities. Finally, this article contextualizes the findings of this study

to describe its implications and opportunities for future activities aimed at reducing obesity in the Mississippi Delta.

Methods

All aspects of this cross-sectional survey were conducted as part of the CDC's High Obesity Program (HOP), a cooperative agreement with Mississippi State University Extension Services (Mississippi State University Extension, 2021). Specifically, the high-obesity counties involved in the administration of this survey were Holmes, Humphreys, Issaquena, Leflore, Sharkey, Sunflower, and Washington. These counties were identified for inclusion in the Mississippi HOP due to adult obesity rates greater than 40%. Prior to the administration of the HOP Community Survey, community health coalitions were developed within each county to establish a cabinet of community leaders who represented various sectors within each community. Sectors represented in these community health coalitions included faith-based organizations, youth-based organizations, government officials, healthcare workers, educators, locally operating businesses, local food systems, nonprofit organizations, media, senior citizens, and volunteers. These HOP Coalitions provided the primary source of recruitment for this survey, providing outreach that facilitated area sampling in the respective counties to ensure local involvement that represented multiple demographic backgrounds. To solicit responses from individuals without internet access or the requisite technology to complete an online survey, coalition members distributed paper versions of the survey throughout their communities, collected the completed surveys, and returned them to the program staff. Additionally, flyers containing a QR code that linked to the online survey were posted in frequently visited buildings in each of the counties such as food retailers, physical activity centers, community centers, government buildings, and schools.

COVID-19 impacted survey distribution and response rates, as travel was restricted by the state government and the University. Additionally, concerns regarding COVID-19 led several potential participants to decline participation. Due to the reliance on several individuals for recruitment, data related to the number of prospective participants that were contacted was not collected by the authors, preventing the authors from quantifying the response rate and impact of COVID-19 on recruitment and participation in this survey.

HOP Community Survey

The HOP Community Survey instrument consisted of multiple validated questionnaires. Each instrument was designed for self-administration, aligning with the study design. In order, the HOP Community Survey assessed socio-demographic characteristics (gender, race, marital status, age, education, employment), health conditions (hypertension, asthma, diabetes, hyperlipidemia, cardiovascular disease), height and weight calculation of body mass index (BMI, kg/m^2), food access, consumption of fruits and vegetables, factors related to healthy eating and the food environment, walking for health, aerobic physical activity levels, and factors influencing physical activity (barriers and facilitators, access to places and facilities, safety concerns).

A majority of the survey was adopted from a previous HOP evaluation administered by the University of Georgia (University of Georgia Extension, 2016). Specifically, questions related to socio-demographic characteristics, health conditions, BMI, access to foods, factors related to healthy eating and the food environment, and factors influencing physical activity were adopted from this former HOP assessment, which was conducted in Taliaferro County, GA.

The National Cancer Institute's (NCI) Eating at America's Table Study (EATS) food frequency questionnaire (FFQ) was used to estimate fruit and vegetable consumption (Thompson et al., 2002). To reduce the respondent burden, questions from the NCI's EATS FFQ assessed the frequency of consumption for each food group, not the amount or serving size. The response options for food frequency items ranged from "never" to "more than once per day." According to the NCI's procedures, responses were converted to "times per day" in order to calculate the estimated daily average of fruit and vegetable intake (e.g., a response of 1 – 3 times per month was converted to 0.067 times per day). Calculations provided estimates of the total daily intake of all food groups.

The short-form International Physical Activity Questionnaire (IPAQ) was used to obtain data on health-related physical activity (Craig et al., 2003). The IPAQ is designed for administration to adolescents and adults aged 15 to 69. The questionnaire consists of questions about time spent in three types of physical activity during the past 7 days: walking, moderate-intensity, and vigorous-intensity. Respondents were asked to identify their participation in walking, moderate-intensity, and vigorous-intensity physical activity by the number of days per week and then the number of minutes per day they participated in each type of activity. Responses were used to calculate the total number of minutes per week for each type of physical activity.

Analyses

This article presents descriptive statistics and chi-square analyses of responses to the 2020 Mississippi HOP Community Survey. A total of $N = 352$ residents of high obesity Mississippi Delta counties participated in this study. Surveys were not discarded for missing item responses. Rather, missing item responses were excluded from relevant analyses.

Chi-Square analyses were conducted to examine between-group differences according to age, BMI classification, and diagnosed health conditions. To provide a more-even distribution, age was categorized into three groups: a) 18 to 34 years; b) 35 to 54 years; and c) 55 years or more. All analyses were conducted using a 95% confidence interval, $p < .05$. Regression analyses were not

used in this study due to multiple instances of item nonresponse among the sample of respondents who completed the survey.

This study uses two distinct classifications for the barriers to healthy eating and physical activity: individual and community. With respect to observed consumption of fruit and vegetables, individual barriers measured in this study were:

- Family eating habits
- Affordability;
- Food preparation
- Taste preference

Community-level barrier to fruit and vegetable consumption included:

- Availability at nearby stores
- Freshness
- Residence in food desert

Regarding physical activity, individual-level barriers were:

- A lack of partners for physical activities
- Lack of time
- Existing health conditions
- Injury concerns
- Transportation
- Affordability

Community-level barriers to physical activity included:

- Distance to physical activity places
- Lack of rest areas
- Safety of physical activity places
- Maintenance of physical activity places

Results

Descriptive data related to demographics, existing health conditions, and BMI status are detailed in Table 1. Respondents were largely female (79.7%). African American (83.6%), and 55 years or older (52.2%). Only a small minority of respondents indicated being 18 to 34 years of age (12.3%). Most respondents indicated earning at least one post-secondary degree (51.7%). There was a high prevalence of hypertension (62.2%) and high cholesterol (39.8%) among the sample of respondents. Based on self-reported height and weight, most respondents were categorized as overweight (22.9%) or obese (62.1%) according to BMI.

Table 1
Characteristics of Survey Participants (N = 352)

Descriptive Variables	Percentage
Gender (*n* = 291)	
Male	20.3
Female	79.7
Race/Ethnicity (*n* = 287)	
Non-Hispanic White	15.7
African American	83.6
Other	0.7
Age Group (*n* = 276)	
18-34	21.4
35-54	39.8
55+	38.8
Level of Education (*n* = 290)	
Less than High School	3.4
High School Diploma/GED	20.3
Associate degree	11.7
Bachelor's degree	19.0
Advanced degree	21.0
Some college	19.0
Employment Status (*n* = 290)	
Full-time	52.4
Part-time	6.9
Retired	34.1
Unemployed	6.6
Health Conditions	
Hypertension (*n* = 352)	62.2
Asthma (*n* = 337)	11.6
Diabetes (*n* = 341)	22.9
High cholesterol (*n* = 347)	39.8
Heart disease (*n* = 339)	8.8
Body Mass Index Classification (*n* = 340)	

Underweight	1.5
Normal weight	13.5
Overweight	22.9
Obese	62.1

There was a positive relationship between age and hypertension χ^2 (2, N = 275) = 64.1, p < .001, where nearly nine out of ten respondents 55 years and older had been diagnosed with hypertension (n = 91, 85.0%). Age had a positive relationship with high cholesterol χ^2 (2, N = 265) = 36.2, p < .001, such that the prevalence of high cholesterol among participants aged 18 to 54 years (n = 40, 24.1%) was low compared to respondents aged 55 years and older (n = 59, 59.6%). Age displayed significant relationships with the incidence of diabetes χ^2 (2, N = 259) = 8.5 p < .05 and heart disease χ^2 (2, N = 258) = 11.7, p < .01 as well. BMI classification displayed a positive relationship with hypertension χ^2 (2, N = 338) = 13.176, p < .01 and diabetes χ^2 (2, N = 324) = 8.894, p < .05 but no other health conditions observed in this study. Despite sharing relationships with hypertension and diabetes, there was no statistically significant relationship between age groups and BMI categories.

Healthy Eating and Food Access

Approximately two out of five respondents (39.5%) lived in an area designated as a food desert by the USDA. Nearly half of the sample of respondents (45.7%) relied on food assistance programs to meet their nutritional needs. Only about one-in-four respondents (27.0%) reported consuming three or more servings of fruits and/or vegetables each day. Additionally, a small percentage of respondents (6.8%) reported "zero" scores for fruit and/or vegetable consumption. Several survey items assessed the perceived barriers to fruit and vegetable consumption among respondents. These findings are reported in Table 2. Chi-square analyses revealed age had a significant relationship with the affordability of vegetables being a barrier to healthy eating χ^2 (8, N = 371) = 16.4, p < .05.

Table 2
Barriers to Fruit and Vegetable Consumption (N = 352)

Barriers	Fruits *n* (%)	Vegetables *n* (%)
Family does not eat fruit and/or vegetables	129 (36.6%)	138 (39.2%)
Affordability	182 (51.7%)	156 (44.3%)
Preparation is difficult	86 (24.4%)	112 (31.8%)
Taste	106 (30.1%)	115 (32.7%)
Not available at nearby stores	164 (46.6%)	161 (45.7%)
Poor freshness at stores	197 (56.0%)	191 (54.3%)
Cannot keep fresh at home	229 (65.1%)	216 (61.4%)

Physical Activity

Nearly half of the sample (48.4%) reported never walking for recreation, sport, exercise, and/or leisure. This contributed to a high percentage of respondents (50.4%) being classified as "not active". Several barriers to physical activity were assessed. Table 3 presents data regarding the number of respondents who felt these barriers impacted their physical activity levels. Time (9.8%) and transportation (8.1%) were not prevalent barriers to physical activity. Other personal factors such as a lack of partners for physical activities (48.7%), affordability (13.9%), existing health conditions (18.1%), and injury concerns (18.9%) were indicated as barriers to physical activity across the sample. Community-level factors such as distance to physical activity places (24.0%), a lack of rest areas (18.1%), and the need for improved safety (54.0%) and maintenance (59.3%) of physical activity facilities were prevalent barriers to physical activity.

Table 3
Barriers to Physical Activity (N = 352)

Barriers	*n* (%)
Lack of partners for physical activities	175 (48.7%)
Lack of time	35 (9.8%)
Existing health conditions	65 (18.1%)
Injury concerns	68 (18.9%)
Lack of transportation	29 (8.1%)
Affordability	50 (13.9%)
Distance to places/facilities to be active	86 (24.0%)
Lack of rest areas	65 (18.1%)
Need for safe places/facilities to be active	194 (54.0%)
Need for better maintained places/facilities	213 (59.3%)

Chi-square analyses of age groups and several barriers to physical activity are presented in Table 4. A significant relationship was observed between age and the presence of health conditions as a barrier to physical activity, such that nearly one-third (n = 32, 30.8%) of respondents aged 55 years and older reported being less physically active due to an existing health condition $\chi 2$ (4, N = 271) = 14.132, p < .01. Chi-square analyses observed significant relationships between age and two community-scale barriers, safety $\chi 2$ (4, N = 267) = 9.597, p < .05 and maintenance $\chi 2$ (4, N = 269) = 10.192, p < .05.

Table 4
Chi-Square Analyses: Age & Barriers to Physical Activity

	18-34 ***n(%)***	**35-54** ***n(%)***	**55+** ***n(%)***	**χ^2 (df)**
Lack of Partners for Physical Activities (n = 267)				8.1 (4)
No Barrier	12	26	19	
Neutral	38	70	60	
Barrier	8	10	24	
Health Conditions (n = 271)				14.1** (4)
No Barrier	43	59	61	
Neutral	11	23	11	
Barrier	5	26	32	
Injury Concerns (n = 270)				8.6 (4)
No Barrier	33	62	57	
Neutral	14	26	13	
Barrier	11	21	33	
Lack of Transportation (n = 269)				8.2 (4)
No Barrier	36	87	79	
Neutral	11	13	15	
Barrier	11	9	8	
Affordability (n = 269)				4.7 (4)
No Barrier	34	66	63	
Neutral	12	28	26	
Barrier	13	14	10	
Safety of Places/Facilities (n = 267)				9.6* (4)
No Barrier	4	4	15	

Neutral	13	21	24	
Barrier	41	82	63	
Maintenance of Places/Facilities (*n* = 269)				10.2* (4)
No Barrier	3	3	13	
Neutral	13	18	13	
Barrier	42	87	77	

*Significant at the 0.05 level (2-tailed)

**Significant at the 0.01 level (2-tailed)

Discussion

The results from this study indicate that residents from 25 communities across seven high obesity Mississippi Delta counties experience multiple barriers to healthy eating and physical activity. Previous research has attributed the Mississippi Delta region's poor diet and low levels of physical activity to factors such as a lack of health insurance, poverty, rurality, shortages of primary care providers, poor infrastructure, and older age (Chatterjee et al, 2005; Cohen, Cook et al., 2018; Cohen, Greaney et al., 2018; Connell et al., 2019; Long et al., 2018; Mendy & Vargas, 2015). This study expands on these earlier findings and answers a recent call for research detailing the regional contextual factors that influence individual-level risk factors such as diet and physical activity (Miller & Vasan, 2021). Contextualizing these findings within the scope of existing literature and policy recommendations is essential in establishing their implications and guiding future obesity-related interventions in the Mississippi Delta.

The sample of respondents was predominantly of African American race (83.6%), consistent with regional Census data indicating African American race represents 60.2% to 83.8% of the population in each county (United States Census Bureau, 2019). A small percentage of the sample lacked a high school education (3.4%) compared to the regional rate of 24.1% (United States Census Bureau, 2019). According to the most recent Census estimates (United States Census Bureau, 2019), median income for the eight-county region ranges between $26,449 and $33,991, corresponding with poverty rates ranging between 25.9% and 43.6%. Considering the level of education among respondents, it was surprising to observe a high prevalence of hypertension (62.2%) and high cholesterol (39.8%). These health conditions corresponded with a majority of respondents self-reporting BMI values in the overweight (22.9%) or obese (62.1%) ranges. Chi-square analyses demonstrated that the high prevalence of several health conditions observed in this study were related to older age among many respondents.

This study aimed to highlight various environmental, societal, neighborhood, and structural influences driving high obesity rates in Mississippi Delta communities. Approximately two out of five respondents (39.5%) lived in an area designated as a food desert by the USDA (Dutko et al., 2012). The prevalence of poor food access and reliance on food assistance programs (45.7%) suggest that respondents may be at risk for food insecurity. These data align with regional food insecurity rates of 24.9% among all residents and 30.6% among children (Feeding America, 2020). Specifically, environmental factors such as the availability of fresh produce and the ability to keep food fresh at home impacted fruit and vegetable consumption for a majority of the survey respondents.

While affordability was a barrier to fruit (51.7%) and vegetable (44.3%) consumption, other individual-level factors were important barriers to healthy eating. Tastes, preparation, and family eating habits were each indicated as barriers to fruit and vegetable consumption by approximately one third of the sample of respondents. This is consistent with previous findings detailing barriers to healthy family food environments such as food preparation and the preferences of others (Fulkerson, Story et al., 2008; Fulkerson, Kubik et al., 2011; Neumark-Sztainer et al., 2012; Birch, 1999; Fulkerson, Kubik et al., 2011; Fulkerson, Story et al., 2008; Wardle et al., 2003). Future interventions aimed at transforming behaviors should promote the importance of consensus and cooperation in establishing a healthful family food environment (Dressler, 2006). Interventions designed with these considerations will be important in developing feasible strategies for low-income families to cope with financial constraints and have shown promise in recent years (Fulkerson et al., 2018). Healthy eating is only one component of lifelong health, as highlighted by a recent special issue of *Nutrients* covering the integration of nutrition and physical activity as an optimal strategy for achieving health outcomes (Koehler & Drenowatz, 2019).

According to the most recent recommendations, physical activity is "one of the most important actions that people of all ages can take to improve their health" (U.S. Department of Health and Human Services, 2018). However, research has highlighted how rural communities are challenged with a lower density of food outlets and fitness facilities, contributing to poor access to walking opportunities and low levels of physical activity (Briggs et al., 2019; Johnson et al., 2019; Oppert & Charreire, 2012). The current study observed, similarly, that community constructs were impactful on the physical activity levels of Mississippi Delta residents. Respondents indicated distance to physical activity places (24.0%), a lack of rest areas (18.1%), and the need for improved safety (54.0%) and maintenance (59.3%) of physical activity facilities negatively impacted their physical activity

levels. Based on these findings investments aimed at creating safe, quality physical activity facilities could yield immediate benefits. Affordability (13.9%), existing health conditions (18.1%), and injury concerns (18.9%) were observed individual-level barriers that present challenges. However, nearly half the sample of respondents indicated that lacking partners for physical activities reduced their amount of physical activity. Observing these physical activity data in the context of the COVID-19 pandemic, residents of the Mississippi Delta may be at risk for social isolation and poor mental health outcomes (Meyer et al., 2020).

The community constructs and desire for physical activity partners identified among this sample of Mississippi Delta residents offer actionable targets for future interventions. There is a clear need for further investigation into feasible interventions aimed at engaging physically inactive individuals living in the Mississippi Delta in a safe, cost-effective manner to foster social connectedness and the adoption of active living practices. Previous research indicates that several community assets such as community gardens, vegetable stands, food pantries, churches, fitness centers, and schools may be important, accessible destinations for individuals in the Mississippi Delta seeking improved access to healthy foods and physical activity opportunities (Connell et al., 2015; Gray et al., 2015; Mann et al., 2020; Tussing-Humphreys et al., 2015).

Strengths and Limitations

A major strength of this study is that it was conducted across 25 communities within eight counties of the Mississippi Delta. Further, this survey assessed barriers and facilitators to the consumption of fruits and vegetables in addition to physical activity. Understanding the barriers observed in this study is important for future efforts to improve lifestyle behaviors in rural areas such as the Mississippi Delta. Additionally, the *Dietary Guidelines for Americans, 2020-2025* define fruits and vegetables as core elements of a healthy dietary pattern (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2020). Similarly, the Physical Activity Guidelines for Americans define physical activity as one of the most important actions people of all ages can take to improve their health (U.S. Department of Health and Human Services, 2018). Because this survey was conducted during the onset of the COVID-19 pandemic, it does provide a unique contextual lens through which to view the food access issues of the region. However, we acknowledge the limitations which include the self-reported data collection and use of a convenience sample. The COVID-19 pandemic's onset impaired recruitment by an unmeasured magnitude. We also noted substantial missing data, limiting the ability to conduct regression analyses that would yield generalizable estimates of the relationships between the observed variables. Finally, while the present study assessed the prevalence of barriers related to healthy eating and physical activity, the survey design did not allow for the assessment of severity as it pertains to the barriers observed.

Conclusion

This study aimed to fill gaps in our knowledge regarding regional contextual factors that influence the risk for poor diet and physical activity levels in the Mississippi Delta. A survey sample of 352 responses from residents of high-obesity, Mississippi Delta communities indicated the presence of multiple barriers to fruit and vegetable consumption, food access, and physical activity. Research, policy, and interventions designed with these considerations will be important in developing feasible strategies to fit the Mississippi Delta and its unique socioeconomic contexts. Next steps involve using qualitative research techniques such as focus groups, interviews, photo voice and/or coalition meetings to guide the development of programmatic strategies for reducing obesity through diet and physical activity in these communities. Finally, collaborative efforts by academic, political, and local stakeholders should aim at providing detailed, local needs assessments to guide intervention development, implementation, and evaluations with the goal of developing programmatic strategies for reducing obesity through diet and physical activity that are replicable across rural America.

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