DESCRIPTIVE STUDY OF PARENTS' AND GUARDIANS' PERCEIVED BARRIERS TO PHYSICAL ACTIVITY IN THE MISSISSIPPI DELTA

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Understanding of beliefs, attitudes, and behaviors toward health issues, such as physical inactivity, within certain populations are often studied to design programs and interventions specific to communities. A total of six elementary schools were chosen in the Mississippi Delta, two elementary schools within three school districts, to provide a deeper understanding of barriers to physical activity. Forty-four parents and guardians of elementary aged children participated in focus groups to discuss current physical activity levels and factors impacting and limiting local children's physical activity levels. The most frequently reported barriers were environmental issues such as fear of children's safety, lack of resources, and individual and social constraints such as time, parental influences, and television viewing. Concerns about safety and violence were the most frequently mentioned issues among participants. Collection through other methods of research is needed to further understand and assess the problems faced in this region.

Key words: physical activity, Mississippi Delta, barriers

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CHAPTER 1

INTRODUCTION

Children living in rural areas of the Southeast are at an increased risk for overweight and obesity and 53 percent of the population in Mississippi live in areas classified as rural, with the lowest per capita income in the United States (Harrell, Davy, Stewart, & King, 2005; Mississippi State Department of Health, 1999; Ogden, Flegal, & Carroll, 2002). Mississippi leads the nation in statewide prevalence of obesity (Davy, Harrell, Stewart, & King, 2004; Hughes, Areghan, & Knight, 2005; Skorga, 2002). The Mississippi Delta consists of 18 counties along the Mississippi River. 'The Delta possesses a rich culture and diverse heritage given the various groups of people that have settled there over the years' (Thompson, Powell, Smith, & Penick, 2000). But the Delta has been referred to as a "third world" country because of its excessive poverty level and predominant African American population (Parfit, 1993). Many of the area's local young educated residents move out of the area in order to find employment. Poorly educated and unskilled laborers are left behind, which has a detrimental effect on the region's economy (Thompson et al., 2000). Forty-one percent of African-American residents in the Delta Region are below the poverty level, compared with thirty percent of African-Americans nationally (Skorga, 2002). Residents in the Mississippi Delta have been

suffering from high rates of unemployment and poverty, inadequate access to health care, and poor nutrition (Felix & Stewart, 2005; Hall, Jamison, & Coughlin, 2004). The Mississippi Delta has high rates of low birth weight babies, teen pregnancy, and major health problems such as diabetes, hypertension, kidney failure, and asthma (Skorga, 2002). According to the Mississippi Department of Health, the leading causes of death for 2005 in Leflore, Sunflower, and Washington Counties were in descending order, heart disease, cancer, and cerebrovascular disease (Mississippi Department of Health, 2006). The median infant mortality rate for counties in the Delta is 30 percent higher than the rates for non-Delta counties in the region. Cancer and heart disease mortality rates of Delta counties are on average nine percent higher than non-Delta counties. Among Mississippi Delta African American women, cervical cancer death rates were higher for those living in nondistressed or urban counties than for their counterparts elsewhere in the United States. Factors such as inadequate access to health care, increased risk of unemployment and poverty, and rural conditions may lead to poor cancer screening, leading to higher incidences of late-stage disease and increase death rates (Hall et al., 2004). Data collected from 37 elementary and middle schools throughout Mississippi found that a high percentage of students in Mississippi are already overweight in first grade (18 percent) and 31 percent of students in eighth grade were overweight. Data suggest that self-reported height and weight underestimate the prevalence of overweight among middle school student in particular (Kolbo et al., 2006). The Centers for Disease Control and Prevention (CDC) reported in 2005 in Mississippi that only 40 percent of individuals were receiving insufficient amounts of physical activity, defined as doing more than 10 minutes total per week of moderate or vigorous-intensity lifestyle activities

but less than the recommended level of activity. An estimated 20 percent of individuals in Mississippi had reports of inactivity which is defined as less than 10 minutes total per week of moderate or vigorous-intensity or lifestyle activity (Centers for Disease Control and Prevention, 2007b).

The Mississippi State Department of Health reports that only 23 percent of Mississippi public high school students attend physical education class daily (Mississippi State Department of Health, 2003). Current Mississippi School Health Policies regarding physical education recommends thirty minutes of physical education and fitness for kindergarten through sixth grade and two hours per week for grades seven through nine. The Mississippi Healthy Students Act, Senate Bill Number 2369, recognizes that there is a problem with Mississippi student inactivity and overweight and requires 150 minutes per week of physical activity-based instruction and 45 minutes per week of health education instruction. A school wellness plan including the promotion of physical activity is to be incorporated into the 2008-2009 school year (Mississippi Office of Healthy Schools, 2006). Objectives 22.9 and 22.10 of *Healthy People 2010* aim to increase the number of students receiving daily physical education that engages them in moderate-to-vigorous physical activity for 50 percent of class time. Objectives also encourage daily participation in physical education in schools (United States Department of Health and Human Services, 2000). The goal of implementation of programs and interventions is to improve health status, quality of life, and preventable diseases of all individuals.

CHAPTER II

LITERATURE REVIEW

Prevalence of Overweight

The dramatic increase in overweight and obesity in the United States has health experts and researchers looking at environment as a factor that promotes over consumption of food and physical inactivity. The prevalence of overweight in children and adolescents 6 to 19 years old in the United States has more than tripled since 1980 (Ogden et al., 2002). For this particular age group, one third are overweight or at risk for overweight (Harrell et al., 2005). The increase in prevalence of overweight has no race, sex, or geographic boundary. The greatest increase has been among African American girls, Hispanic youth, and children living in the South. Approximately four in ten African American and Hispanic children and adolescents are overweight or at risk for becoming overweight (Ogden et al., 2002; Strauss & Pollack, 2001). Classification of children is based upon the Centers for Disease Control and Prevention (CDC) gender specific body mass index for age growth charts. Body mass index (BMI) is used as a screening tool to identify possible weight problems for children. With the metric system, the formula for BMI is weight in kilograms divided by height in meters squared. The BMI number is plotted on the gender specific BMI-for-age growth charts to obtain a percentile ranking. Children are considered "at risk for overweight" if BMI is at or above

the 85th percentile. Children are considered "overweight" if their BMI is equal to or greater than the 95th percentile (Center for Disease Control and Prevention, 2007).

Childhood overweight affects self-esteem and has negative consequences on cognitive and social development (Veugelers & Fitzgerald, 2005). Overweight children are at a higher risk for remaining overweight as adults and a higher risk for morbidity and mortality (Fulton, Garg, Galuska, Rattay, & Caspersen, 2004; Ogden et al., 2002). Childhood obesity has been linked to diet related diseases such as type two diabetes, hypertension, and cardiovascular disease (Freedman, Dietz, & Srinivasan, 1999; Gutin, Barbeau, & Yin, 2004; McNamara, Molot, & Stremple, 1971). Childhood overweight is the primary risk factor for type two diabetes, especially among high-risk ethnic groups (Cowie, Harris, & Silverman, 1993; Cruz et al., 2005). Campos et al. examined the physiological effects of overweight in nine-year-old children by measuring blood pressure. Blood pressure was significantly higher in overweight children and by age 25, 53 percent of men and 32 percent of women were either hypertensive or at risk of hypertension (Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2005).

In families with lower incomes, individuals had higher BMI. Higher BMI were associated with children who reported spending greater time watching television (Burke et al., 2005). Data from the Continuing Survey of Food Intake for Individuals (CSFII), 1994 to 1996 and 1998, and the National Health and Nutrition Examination Survey III (NHANES) were used to examine the association between demographics and lifestyles and the BMI of children 6 to 11 years old and adolescents 12 to 19 years old for CSFII and 12 to 16 years old for NHANES. Age, race, gender, and family income were statistically significant predictors of BMI (Storey, Forshee, Weaver, & Sansalone, 2003).

The obesity epidemic in America accounts for billions of dollars in health care spending (Veugelers & Fitzgerald, 2005). The need for prevention and treatment has increased (Gutin et al., 2004). Healthy eating and physical activity can be used as treatment and prevention in children. Healthy eating and physical activity habits that are established early in life influence health status later in life (Gutin et al., 2004; Sallis, Simons-Morton, & Stone, 1992). Physical activity refers to 'any body movement provided by skeletal muscles that results in a substantial increase over the resting energy expenditure.' Exercise, sports, occupational work, household chores, and physical leisure activities are included as physical activity (Bouchard & Shephard, 1994).

Benefits to Physical Activity

Two out of three Americans are not physically active at the current recommended levels (Centers for Disease Control and Prevention, 2007b). The CDC reports recommended physical activity as moderate-intensity activities in a usual week such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes small increases in breathing or heart rate for at least 30 minutes per day at least 5 days per week; or vigorous- intensity activities in a usual week such as running, aerobics, heavy yard work or anything else that causes large increases in breathing or heart rate for at least 20 minutes per day at least 3 days per week (Centers for Disease Control and Prevention, 2007b). Individuals who are physically inactive are almost twice as likely to develop coronary heart disease as people who participate in regular physical activity (United States Department of Health and Human Services, 2000). Physical activity is also associated with a decreased risk of colon cancer, reduced risk of developing non-

insulin-dependent diabetes mellitus, and lower mortality rates for both older and younger adults (Fletcher, Balady, & Blair, 1996; Manley, 1999). Vigorous physical activity has been shown to lower body fatness and increase fitness (Gutin et al., 2004). Despite the health benefits of physical activity, many Americans still remain physically inactive (United States Department of Health and Human Services, 1996).

For children and adolescents, regular physical activity has been shown to have beneficial effects on health issues such as weight, muscular strength, body fat, cardiorespiratory fitness, bone mass, blood pressure, anxiety and stress, and self-esteem (Baranowski, Bouchard, & Bar-Or, 1992; Sallis & K., 1994). Long-term exercise can reduce the risk of health problems in adulthood, such as hypertension and atherosclerotic disease (Armstrong et al., 2006). Some research suggests that physically active adolescents remain physically active as adults (Taylor, Blair, & Cummings, 1999). The CDC recommends that children and adolescents participate in at least 60 minutes of moderate intensity physical activity most days of the week, preferably daily (Centers for Disease Control and Prevention, 2007a). The American College of Sports Medicine's current physical activity goal for children is 30 to 60 minutes of moderate level of physical activity on most days of the week (Armstrong et al., 2006). A goal of Healthy People 2010 is to improve health, fitness, and quality of life through daily physical activity (United States Department of Health and Human Services, 2000).

Individuals' perceptions of the causes of overweight and preventative strategies are often studied (Brown, 2005; O'dea, 2003). Over consumption of unhealthy food, parental responsibility, modern technology and the mass media are reported factors related to childhood obesity. Environmental factors such as availability of safe walking

and cycling paths or other places to be active, availability and price of healthy foods are considered important factors related to childhood obesity. Schools and media can be effective in changing environmental factors (Eyler, Wilcox, & Matson-Koffman, 2002; Hardus, van Vuuren, Crawford, & Worsley, 2003; Sallis, Prochaska, & Taylor, 2000; Trost, Owen, & Bauman, 2002).

Physical inactivity may affect weight in a variety of ways. The World Health Organization suggested that sedentary lifestyle is one of the ten leading causes of death and disability in the world and contributes to unhealthy diets, caloric excess, obesity, and associated chronic diseases (World Health Organization, 2007). Televisions are present in 98 percent of households in the United States. Increasing time devoted to television watching, internet use, and video games has been shown to contribute to the prevalence of sedentary activity (French, Story, & Jeffery, 2001). Television viewing has been associated with an increase in BMI (Anderson, Crespo, Bartlett, Cheskin, & Pratt, 1998). Lumeng et. al reported for more than 1000 three year olds, the number of hours children were reported to be awake in a room with a television on was associated with an increased likelihood of being concurrently overweight, independent of race, socioeconomic status, amount of time in childcare, and child behavior problems. Adolescents are more likely to spend time on sedentary behaviors than physical activities as they increase in age (Lumeng, Appugliese, Cabral, Bradley, & Zuckerman, 2006).

Particularly among girls, research shows a decline in physical activity during adolescence (United States Department of Health and Human Services, 1996). Decreasing levels of physical activity during the mid-teenage years is associated with barriers that interfere with physical activity participation. Adolescent females identified

lack of time due to responsibilities as the main barriers to physical activity participation. Influence of friends, parents, and teachers, concern about safety, body-centered issues, and inaccessibility of facilities and the cost to use them were identified by adolescent females as factors that make it difficult to be active. Girls report that peer pressure influences physical activity participation (Dwyer et al., 2006; Norman, Schmid, Sallis, Calfas, & Patrick, 2005). Adolescent males also report that concern with body image cause them to avoid participating in physical activity (Allison et al., 2005; Eyler et al., 2002; Trost et al., 2002).

Barriers to Physical Activity

Individuals who have low barriers to physical activity are more likely to meet the recommended physical activity levels compared to individuals with medium and high barriers (Zlot, Librett, Buchner, & Schmid, 2006). Identifying and reducing barriers such as limited access to facilities, environmental issues, lack of knowledge of the benefits of physical activity, and low self- efficacy are important to consider while promoting efforts to increase physical activity (Centers for Disease Control and Prevention, 1999). Accessing perceived benefits to lifestyle habits such as physical activity allows researchers to develop interventions for weight problems individuals are facing. Many adults are faced and challenged by barriers when attempting to incorporate a physically active lifestyle. Barriers refer to the obstacles individuals face in undertaking, maintaining, or increasing physical activity. Categories of factors, either internal or external barriers, often studied as correlated to and predictors of physical activity are psychological, cognitive, emotional, behavioral attributes and skills, social and cultural,

and physical environment (Allison, Dwyer et al. 2005). Among adults, the most leading barriers are old age, state of health, socioeconomic status, geographic area, and social and physical environments. Subcategories of these barriers also have an association that are prominant (Booth, Macaskill, & Owen, 1993; Crespo, 2000; Duffy & MacDonald, 1990; Kington & Smith, 1997).

Transportation, social support, time, and environmental barriers have been shown to contribute to low levels of physical activity among Americans (Zlot et al., 2006). Differences in physical activity levels are present among population groups. Barriers toward physical activity are different between males and females. Perceived benefits of physical activity were significantly different between men and women (Brown, 2005). Women have reported to be more physically inactive when compared to men. Males have higher levels of physical self-perceptions (Hayes, Crocker, & Kowalski, 1999; Klomsten, Marsh, & Skaalvik, 2005). African Americans and Hispanics have a greater proportion of their respective population that are physically inactive than Caucasians. Individuals with lower levels of education and income are less active in their leisure time (United States Department of Health and Human Services, 2000).

Environmental Barriers

Environmental influences on physical activity are being studied to gain a better understanding in order to reverse the trend of weight gain in the United States (French et al., 2001; Zlot et al., 2006). Individuals with time, social, and transportation barriers independently contribute to low levels of physical activity (Zlot et al., 2006). Neighborhood environments are important contributors to physical activity levels and can

influence the health of individuals (Booth, Pinkston, Walker, & Poston, 2005; Saelens, Sallis, Black, & Chen, 2003). Individuals living in low population density regions that are further from supermarkets have an increased risk of overweight (Liu, Wilson, Qi, & Ying, 2007). People who perceive their neighborhood to be unsafe are more likely to be physically inactive (Centers for Disease Control and Prevention, 1999). Children's activity levels are believed to be related to amount of time spent outside, access to parks or sports grounds and other facilities, safe pedestrian conditions, and neighborhood crime rates (Timperio, Salmon, Telford, & Crawford, 2005). Lower socioeconomic status neighborhoods tend to have less access to physical activity resources, which leads to greater physical inactivity of individuals in that area. Higher activity levels are reported in neighborhoods with more physical activity resources such as sidewalks and safe streets (Booth et al., 2005).

Data from the 1996 Behavioral Risk Factor Surveillance System (BRFSS) was used to characterize the association between neighborhood safety and physical inactivity. The prevalence of physical inactivity was highest among adults aged 65 years or older, women, racial and ethnic minorities, individuals with a high school education or less, and individuals with annual household incomes less than $20,000 (Centers for Disease Control and Prevention, 1999). Parents of obese children were also linked to lower socioeconomic status (Jefferson, 2006).

Walking and biking for transportation are more frequent in neighborhoods characterized by a greater land use mix of commercial and residential areas, higher residential density, and more direct travel routes by grid pattern of streets (Atkinson, Sallis, Saelens, Cain, & Black, 2005). Neighborhood environment was associated with

physical activity levels and overweight prevalence. Residents of highly walkable neighborhoods had more than 70 minutes of physical activity and lower obesity prevalence than residents of low walkable neighborhoods. Thirty-five percent of residents in the walking friendly neighborhood were overweight compared to 60 percent of residents in the non-walking friendly neighborhood. Crime did not differ between neighborhoods and was not used in neighborhood selection (Saelens et al., 2003). Parents of younger children, five and six year olds, reported greater concern about road safety, danger in the possibility of strangers, no lights or crossing to use, and play areas being several roads away than parents of children ages 10 to 12 years (Timperio et al., 2005). Male adolescent reported that having facilities close to where they lived allowed them to be physically active more often (Allison et al., 2005).

Individual and Social Barriers

Both social and physical environmental factors influence physical activity indirectly through individual-level factors. Social environments such as school, work, family and friends can significantly influence an individual's level of physical activity. Perceptions of the physical environment had direct effects on physical activity. Self-efficacy was the strongest direct correlate of physical activity and is related to intensity (McNeill, Wyrwich, Brownson, Clark, & Kreuter, 2006). Decreases in Americans who walk or bike for transportation may contribute to the trend toward lower physical activity levels. Changes in the trends for occupational activity has declined since the turn of the twentieth century (French et al., 2001). Rate of leisure time inactivity has remained

relatively constant from 1989 to 1996 but is now slowly declining at a rate of one percent per year (McNeill et al., 2006).

Physical activity levels are also associated with socioeconomic status. Barriers to increased activity vary by age group and social class based on occupation (Chinn, White, Harland, Drinkwater, & Raybould, 1999; Crespo, 2000; King et al., 2000). Individuals who have only external barriers such as lack of money or access to transportation are more likely to change exercise behavior than individuals who have internal barriers such as lack of time and motivation (Chinn et al., 1999). Studies indicate that women with children are more sedentary than women without children, especially low-income women (Brown, Brown, Miller, & Hansen, 2001; Fahrenwald & Walker, 2003). Level of support from family and friends was associated with socioeconomic status. Women from disadvantaged backgrounds have lower social support and more constraints to material resources (Brown et al., 2001).

A recent study looked at the perception of access and safety of physical activity compared among residents, who were classified as low or high in socioeconomic status from the 2000 United States Census data, using a telephone interview questionnaire. The association between socioeconomic level and social and environmental supports for physical activity was determined. Data indicated that low socioeconomic respondents were less likely to meet the recommendations for physical activity than high socioeconomic respondents (Wilson, Kirtland, Ainsworth, & Addy, 2004). Respondents from low socioeconomic status areas reported higher perceptions of unpleasantness of neighborhoods, unattended dogs, neighborhood crime, and untrustworthy neighbors. Low socioeconomic status participants perceive having and using walking and bicycling

trails being significantly associated with meeting the recommendations for physical activity levels. Data from Geographic Information System mapping indicate that low socioeconomic respondents did have substantially fewer walking and bicycling trails than high socioeconomic respondents (Wilson et al., 2004).

Surveillance data in the United States indicate that physical inactivity rates are particularly prevalent among women, older adults, adults with lower education, and ethnic minorities (Brown, 2005; United States Department of Health and Human Services, 2000). King et al. in 2000 identified personal and environmental barriers to physical activity among women forty years of age and older and representing African Americans, American Indian-Alaskan Natives, and Hispanics through interviews by telephone and survey. Caregiving duties and lack of energy to exercise were the most frequent reported barriers across each racial- ethnic group and the sample as a whole. Other factors significantly associated with inactivity included American Indian ethnicity, older age, less education, lack of hills and enjoyable scenery in neighborhoods, and lack of other people exercising in one's neighborhood. Lacking a safe place to exercise due to high neighborhood crime rates was the number one barrier among the African American subgroup. Aging is associated with less physical activity in the less educated. Only nine percent of respondents across the survey as a whole met the definition of being physically active regularly, compared to national surveys, which generally have a lower percentage of ethnic minority women represented and include younger women, and have rates for regular physical activity ranging from nine percent to nineteen percent (King et al., 2000). McNeil et al. in 2006 sampled 1,090 African American and White lower and middle-income adults in the St. Louis area and 34 percent of the adults met the Healthy

People 2010 recommendations of a minimum of 60 minutes of vigorous-intensity activity a week. A total of 47 percent of the adults met the recommendations for either moderate-intensity or vigorous-intensity activity (McNeill et al., 2006).

Social support is found to be associated with engaging in physical activity (King et al., 2000; McNeill et al., 2006). Family support is an important modifiable factor for reducing sedentary behavior in children and adolescents (Norman et al., 2005). Family and friends have been identified as both positive and negative influences on children and adolescent participation (Thompson, Rehman, & Humbert, 2005). Parents, as barriers, role models, or gatekeepers, play a large role in determining which activities their children engage in and what resources they have available which are influenced by socioeconomic factors (Gustafson & Rhodes, 2006; Perry et al., 1988). Parents' physical activity behaviors are generally considered to be one of the strongest determinants of a child's activity patterns (Fogelholm, Nuutinen, & Pasanen, 1999; Moore, Lombardi, & White, 1991; Stucky-Ropp & DiLorenzo, 1993).

Exercise is perceived to be a lower priority within family lifestyle decisions and believed to be a lower requirement for parental involvement (Hart, Herriot, Bishop, & Truby, 2003). The 2005 Kellogg's Family Health Study reported that parental influence appears to be related to the performance and participation of physical activity in obese children. The 52 percent of parents of obese children said they never or rarely joined them in physical activity compared to 38 percent of the parents of normal weight children. Parents of obese children were also linked to lower socioeconomic status (Jefferson, 2006). The American Dietetic Association (ADA) recognizes that overweight is a significant problem for children and adolescents. The ADA evidence based analysis

shows that pediatric overweight intervention requires a combination of family-based and school-based multi-component programs that include the promotion of physical activity (American Dietetic Association, 2006). By investigating parental perceived barriers to behavior change, it is possible to develop health promotion programs that are appropriately tailored to children of different levels of motivation and behavior change (Hart et al., 2003).

Barriers to Physical Activity at School

School physical education is an important source of physical activity for children (Mississippi State Department of Health, 2003; Sallis et al., 2001). Physical activity in schools accounts for 20 percent to 40 percent of children's total activity (Stewart et al., 1995). Because children spend the majority of their day at school, the type and amount of physical activity occurring in schools are important. Less school time is being devoted to physical activity. Lack of funding and emphasis on academia coursework are barriers to time spent in physical activity in schools (Mississippi State Department of Health, 2003; Ross & Gilbert, 1985). Healthy People 2010 objectives for children and adolescents emphasize the importance of both physical activity and physical education by encouraging 30 minutes per day, 5 days per weeks, of moderate physical activity, or 20 minutes per day, 3 days per week, of vigorous activity (United States Department of Health and Human Services, 2000). According to the Centers for Disease Control and Prevention, 62 percent of children aged 9-13 years old do not participate in any organized physical activity during their nonschool hours and 23 percent do not engage in any free time physical activity (Centers for Disease Control and Prevention, 2003). According to

the results from the School Health Policies and Programs Study, 78 percent of states and 83 percent of school districts require elementary schools to teach physical education, and 50 percent or more of elementary schools require physical education in first thru fifth grades (Burgeson, Wechsler, Brener, Young, & Spain, 2000).

Observations discovered that physical education specialist provided students with only three minutes of moderate to vigorous physical activity per physical education class which is less that ten percent of class time. With effective teachers and training, physical education curriculum have the potential to provide children with much more physical activity than they have in typical physical education classes (Simons-Morton, Taylor, & Snider, 1993, 1994).

Identifying environmental correlates of student physical activity could facilitate interventions that benefit all children at school (Sallis et al., 2001). School based health intervention programs have been shown to have possible effects on numerous adverse health behaviors (Parcel et al., 2003). Two or more physical education classes a week are associated with a decreased risk of overweight. There is also an association with the frequency of physical activity with overweight as well as sedentary activity and overweight (Veugelers & Fitzgerald, 2005). The Cardiovascular Health in Children study, an eight-week intervention study consisting of adaptations of physical education in eighteen elementary schools in North Carolina, saw reduced levels in cholesterol, systolic blood pressure, and body fat. Half of the schools were in rural settings and half in urban settings. Children had to meet criteria of at least one cardiovascular risk factors such as high cholesterol or obesity and had to have records of physical inactivity. The study

showed significant improvements in health knowledge in the intervention groups (Harrell et al., 1998).

Students are found to be generally more active in physical education as they get older (Fairclough & Stratton, 2006). Physical education classes in twenty elementary schools, third to fifth grade, in Minnesota and Texas were examined and found the average physical education lesson was about 33 minutes long (Levin, McKenzie, Hussey, Kelder, & Lytle, 2001). Females were found to have lower mean activity levels than males in elementary physical education classes (Grissom, Ward, Martin, & Leenders, 2005). In 277 elementary schools in Montreal, the median time that students were actively engaged in physical activity in school through extracurricular physical activity, physical education classes, daycare, and recess was 29 minutes per day. The level of physical activity was related to the school principles' priority and decision-making by school principles. Higher physical activity opportunities in physical education classes in elementary schools were also associated with role modeling of physical activity by financial and human resources, access to school sports facilities, adequate space for storing student sports equipment, and suburban location (Barnett, O'Loughlin, Gauvin, Paradis, & Hanley, 2006).

The 2003 Children's Lifestyle and School-performance Study surveyed fifth grade students, their parents, and school principles in 282 public schools in Nova Scotia, which evaluated the prevalence of overweight and obesity and examined the contributions of health, nutrition, and lifestyle factors to weight problems. Anthropometrical data from this study found that the prevalence of overweight among fifth grade students was 33 percent, with 10 percent being obese. Results indicated that

two or more physical education classes a week were associated with a decreased risk of overweight. There is also an association with the frequency of physical activity with overweight as well as sedentary activity and overweight (Veugelers & Fitzgerald, 2005). An eight-week intervention study, consisting of adaptations of physical education, in eighteen elementary schools in North Carolina saw reduced levels in cholesterol, systolic blood pressure, and body fat (Harrell et al., 1998).

Data analyzed from the Early Childhood Longitudinal Study Kindergarten (ECLS-K) class examined the relationship between childhood overweight and children's test scores in school, behavior problems, social skills, school attendance, and grade repetition. The ECLS-K is a longitudinal study in the 1998-1999 school year from 1000 kindergarten programs in the United States. Baseline data began in fall of kindergarten and collected in the spring of kindergarten and first, third, and fifth grade. Data was only available for this study from kindergarten and third grade. Children who were overweight at all data collection periods had significantly more absences in kindergarten and third grade compared to children who were never overweight or children who became overweight. Reading and math scores are significantly higher among the children who were never overweight compared to the other groups. Results showed that girls moving from a normal or at risk to overweight between kindergarten and third grade had a positive association with adverse third grade outcomes such as academic achievement and social behavior, making overweight status a bigger risk factor for girls because this association was not found in boys (Datar & Sturm, 2006).

Qualitative Data and Focus Groups

Focus groups are a qualitative method of data collection that is dependent on participants contributing in group discussions by using their own words and opinions (Serrant-Green, 2007). Focus groups have been shown to be effective in obtaining a rich understanding of individual beliefs and attitudes on a particular topic (Lees, Clark, Nigg, & Newman, 2005). Analysis with qualitative data often involves the formation of themes once the data from tape recorded sessions are transcribed into written format. Analysis of 22 elementary school children indicate that they are the most influenced by their parents and their ability and opportunity to play in leisure physical activity. Children's perception of gender differences and opportunities, barriers to walking and biking to school, access to recreational facilities were noticed as perceived barriers among the students who participated (Thompson et al., 2005).

A Women, Infant, and Children (WIC) clinic used focus groups to explore mothers' perceptions on barriers to prevent and manage childhood obesity. Mothers in the study did not define overweight or obese in children according to measurements from health professionals but instead mothers were more likely to consider their child overweight if they are teased about their weight or have limitations during physical activity. But despite differences in mothers' views verses health professionals, both agree that children should be physically active (Jain et al., 2001).

Male adolescents participated in focus groups that examined perceived barriers to moderate and vigorous physical activity, reasons for participating, and suggestions as to what can be done to increase physical activity. Participants also completed an

information survey consisting of questions on gender, age, grade level, ethnicity or racial origin, and frequency of physical activity participation. Focus groups sessions were selected to ensure that each group was diverse in age, grade, and ethnicity or race. Each session had five to ten adolescents and lasted 90 minutes. All transcripts were imported into a qualitative software package, The Ethnograph. Themes from the data from focus group sessions were developed by a constant comparison approach. A common list of theme and codes were developed used in the transcripts. Participants cited both internal and external barriers for physical activity. Internal barriers discussed were psychological attributes such as laziness and lack of confidence. Participants who noted themselves active and inactive discussed limiting physical activity because their parents placed higher values on academics. Participants also reported that their family and friends influenced their decision on whether to be physical activity or not. Time and cost were other external barriers discussed (Allison et al., 2005).

A focus group study identified thirteen barriers to physical activity behavior in older adults. The most significant barriers reported by those who did not exercise were the fear of falling, lethargy, and lack of motivation. Adults who did exercise identified lethargy, time constraints, and physical ailments as the most significant barriers. Transcripts from focus groups were studied to identify common themes as well as frequencies of responses. Identifying basic concepts and comparing results with other groups identified common patterns. An idea had to be mentioned several times within a group to be considered a theme (Lees et al., 2005).

In 2007 Haines et al. examined weight-related issues among elementary school children to understand how to best handle the issues within a school-based intervention.

Data was collected through focus groups with students and individual interviews of 21 students, 12 school staff members, and 21 parents from an ethically diverse population and primarily low-income population. Four focus groups were conducted with 21 students from fourth through sixth grades, three all females and one all male. Questions asked during focus groups asked types of activities that they enjoy, discussed a proposed after-school program and its perceived likeliness and suggestions, and body image questions. Weight-related teasing and poor body image were prominent issues affecting students. Parents, school staff, and students all perceived teasing as a major problem among their children. When parents were asked to propose ideas to address the issues they suggested non-competitive games and activities such as dancing and swimming as activities that students would enjoy and also suggested an after school program held immediately after school to help parents issues with child care and transportation (Haines, Neumark-Sztainer, & Thiel, 2007).

CHAPTER III

MATERIALS AND METHODS

Research Design

For this research, elementary schools in the Mississippi Delta were recruited for quantitative anthropometrical measurements and qualitative focus group as a part of a large project. Results of the qualitative measurements are not discussed in this particular paper. Three counties were used and approved for site of work; Indianola School District in Sunflower County, Leland School District in Washington County, and Greenwood School District in Leflore County. Two elementary schools from each of the three school districts in the Mississippi Delta were recruited for qualitative focus groups. Focus groups were conducted in each of the six schools with a total of 44 parents and guardians of elementary school children. Table 1.1 illustrates the number of participants from each elementary school. The goal of this research is to address the health of children and their families in the Mississippi Delta.

Qualitative data through focus groups were used because focus groups provide a rich understanding of individual behavior, beliefs, attitudes, and influence on a particular topic. Focus groups are used to investigate the audience's perceived needs and preferences and to use the insight to guide intervention strategies. The objective of the focus groups was to investigate and understand the participants' beliefs toward physical

activity issues within their culture and environment. Parents were selected by the principal of each elementary school and with guidance from members of the Coordinated School Health Program. A random sample was not needed because the intention was to gain understanding of the experiences of the selection participants. Principals and staff of the project were told to select a heterogeneous group of parents from a variety of backgrounds so that different race/ethnic categories, gender categories, and socio-economic class categories were represented in each group. Research members of the project developed questions for participants. Questions were designed with the intent to probe participants to give detailed answers and to involve all participants in discussion. Original script can be referenced in Appendix B. Open-ended questions for the parent and guardians included questions, “Do your children get enough physical activity? Why or why not?”, “What physical activity issues do you think are most pressing for your children?”, “What impact does your neighborhood or community have one your children’s physical activity?”, “What safety concerns (if any) do you have for your children?” , “What or who is impacting your child’s physical activity level?” , “Is there anything that the community could do to help to make some change in terms of physical activity?”

Table 3.1 Participants by Elementary School

School	Number	Percentage
Carver Elementary	11	25%
Leland Elementary	6	14%
Leland School Park Elementary	7	16%
Treadgill Elementary	7	16%
Davis Elementary	5	11%
Lockard Elementary	8	18%

Instruments and Procedures

Each focus group took place in the school where the children of the participants attended and took place either during lunchtime or after regular working hours. The focus groups met for approximately one hour and twenty minutes. A trained moderator conducted the focus group meetings and was responsible for asking questions and leading the group. A co-moderator was also present and was responsible for note taking and looking after the equipment. An Olympus Digital Voice Recorder was used to record all audio from all six focus groups. Topics such as perceived benefits of exercise, barriers to physical activity, participation in current physical activities, environmental and safety factors, and current physical education classes were discussed among parents during a ninety-minute tape-recorded session. With the consent by each participant, each focus group was audio recorded. Analysis of qualitative data from focus groups with parents and guardians were used to look at perceived barriers to physical activity. Participants received a $10 gift certificate to Wal-Mart for their time and contribution.

Participants also completed a demographic survey of age, gender, ethnicity, days of participation in physical activity in a week, education level, occupation status, and whether their children receive free or reduced lunch. The original survey can be referenced in Appendix A. Group members were encouraged by the moderator to participate and discuss each question and topic they thought to be most important.

Analysis of Focus Groups

Once the focus groups were completed, audio recording from the tape recording of each focus group was transcribed using a latent and manifest coding technique. A

graduate student transcribed all tapes of focus group dialogues. Once each session was transcribed the document was pasted in a Word document file. Content analysis from the survey and focus group sessions involved careful review of the recording in the focus group sessions. Focus group data were analyzed for emerging and reoccurring themes and patterns in the response as well as frequency. Tables were constructed from the data of different participants' statements and views. Analysis examined themes and keywords present in the focus group sessions in each of the categories that were discussed. The Word document was analyzed to find emerging themes to further understand the problems and barriers to physical activity according to the parents of children living in the Mississippi Delta. Themes were developed through reading and highlighting key words, sentences, and quotes. Themes were developed from key words and the frequency of the usage among all six focus groups.

CHAPER IV

RESULTS

Demographic Results

Demographic surveys in Table 1.2 reveal that out of the 44 participants the majority of the participants were female (n=37), black (n=36), married between the ages of thirty and thirty-nine years (n=22), have either a high school diploma or some college (n=16), working full time (n=19), and have two children. The average number of days per week of physical activity for the participants was 4.8 days a week. The majority of parents and guardians, 75 percent, reported to be eligible to receiving either free or reduced lunch for their children, which means that their family is 130 percent of the poverty level for free lunches and 185 percent or less of the federal poverty level for reduced lunches. The Federal poverty level for a family of four is $20,650. Families are eligible for a reduced lunch with a maximum income of no more than $38,203 a year and family qualify for free lunch with a maximum income of no more than $26,845 per year (Food Research and Action Center, 2007).

Report of Themes

Focus group discussion enabled a greater understanding of problems within the community. Main themes of the problems with physical activity were developed from accessing the frequency and relevance of what was expressed by participants. Table 1.3 presents emerging themes and selected quotes that represent the themes. The table reveals themes that are revealed in all six focus groups by more than one person in all focus groups. Other reoccurring common issues of barriers are also noted for importance because of the frequency of discussion among focus groups even though these barriers were not discussed among all focus groups. Overall, participants described common issues or barriers affecting physical activity levels among their children: environmental factors, safety concerns, lack of access of resources, inadequate physical activity in schools, and individual and social constraints such as parent involvement, time, commitment to homework, and television.

Table 4.1 Demographics of Focus Group Participants (n=44)

Variable		Number	Percent
Age			
	20-29	6	14%
	30-39	18	41%
	40-49	13	30%
	50-59	5	11%
	60+	2	5%
Gender[1]			
	Male	6	14%
	Female	37	84%
Ethnicity[1]			
	Black	36	82%
	Hispanic	1	2%
	Asian	0	0%
	White	6	14%
Education			
	Less than High School	5	11%
	High School	12	27%
	Some College	16	36%
	College Degree	7	16%
	Master's	2	5%
	Other	2	5%

Table 4.1 Demographics of Focus Group Participants (n=44) continued

Variable		Number	Percent
Marital Status[1]			
	Married	22	50%
	Divorced	3	7%
	Separated	0	0%
	Widowed	4	9%
	Never Been Married	13	30%
Occupation Status[1]			
	Full Time	19	43%
	Part Time	8	18%
	Unemployed	15	34%
	Self-Employed	1	2%
Lunch Category[1]			
	Purchases	6	14%
	Brings	1	2%
	Receives Free/Reduced	33	75%

[1]Missing Data

Table 4.2 Emerging Themes and Selected Quotes From Focus Groups (n=44).

Theme 1: Participants express their belief that individual and social barriers such as time, parental responsibilities, and sedentary activities are some factors that influence physical inactivity.
"For my child he doesn't get enough physical activity when I work uh it's very difficult you were tired as [referring to another participant] said your tired so by the time you get home it's time for dinner and your studies and a little family you barely have family time together you may have a few minutes to walk or something like that um but [son's name] doesn't get enough physical activity at school."
"I have you know too much on my hands just like any working mother and then also because he's an only child he probably would get more if there were more children you know and then they all could go out and do stuff but he pretty much to chooses indoor things because he's by himself and then I don't want to go out there with him so that that has a lot to do with it you know."
"I do not think my kids get enough um exercise because basically the only thing they do is just sit at home and they eat and they watch TV."
"They get home, I'm tired, watch TV, watch the news."
Theme 2: Participants believe school commitments such as homework influence their children and grandchildren's activity outside of school.
"No um no due to video games and time that he spends like during the school year studying so he don't get out much."
"I say um homework and me they want to go outside at and I don't want to go out there and watch them so when their dad gets home I make him go outside."

Table 4.2 Emerging Themes and Selected Quotes From Focus Groups (n=44) continued.

Theme 3: Lack of local resources and community designs are perceived as effecting the amounts of physical activity children are receiving.
"*We need more YMCAs in our area you know more supervised playground areas you know there is only so much we can do."*
"*I think when you say impacting uh a lot of us in this neighborhood don't have yards for our children to safety play in it's mostly streets immediate streets and crime is something that leads us to shelter our kids more so they don't really get to go out you know you can't go to parks anymore you know and it's just I mean we have the supervision there."*
"In the Indianola area we have to go to Greenville are that's 25 miles away or go to Greenwood to get any you know supervised sporting events stuff like that its getting better now recreation is picking up now you know where the kids getting organized sports stuff like that instead of just running around the neighborhood you know running loose so you know you don't want your kids running loose that's really unhealthy."
"My things is in a neighborhood is just busy cars flying up and down the street, so it's impossible for my kids to almost do anything in the community or you know in the neighborhood because of it you know and they are not getting anything in school and due to the traffic and whatever that we have then we have no recreation department then you know they're pretty much just stuck."
Theme 4: Participants state that fears of children's safety due to crime, traffic, and lack of police result in reduced activity outdoors in private yards and public parks.
"*I live in the projects and I really don't like my child to be outside unless I can be out there with her you know because a lot of stuff goes on and some of these parents are so mean to your child and uh I really don't like her to be out there unless I can be out there with her you know what I'm saying an that has a big impact on the exercise that she gets."*

Table 4.2 Emerging Themes and Selected Quotes From Focus Groups (n=44) continued.

Theme 4 (continued)
"I think when you say impacting uh a lot of us in this neighborhood don't have yards for our safety play in it's mostly streets immediate streets and crime is something that leads us to shelter our children to kids more so they don't really get to go out, you know you can't go to parks anymore you know and it's just I mean we have the supervision there but even when you send them to the uh boys club it really isn't sufficient enough to house anybody here but there's not enough supervision there's not enough space available and there's just not enough trust in the community right now to let our children be out in it freely anymore so the impact is that criminal aspect that community fear that we mostly have about trusting our kids to be out"
"In my community we've got drugs going on got drug dealers across the street we've got a park we can't go down there and play at the park so it's like the drug dealers you know took over."
"Maybe they could have some auxiliary police just kind of get around the parks and take the parks back from the violent people and fix them up and get new equipment and probably have a little security guy walk around while kids can have fun at the park like they used to."

Environmental and Community Barriers

The most reported factor influencing physical activity was environmental issues with concerns about safety being the most reported factor. The access and opportunity for physical activity was found to be of significant importance among parents and guardians. Participants believed that lack of access of supervised and organized facilities was a major barrier to their community. Parent also discussed what they believe the community could do to improve physical activity. Overall, the main environment and community barriers were community's safety issues due to fear of crime, lack of access of resources such as YMCA's or parks, and street design and flow of traffic. Issues with the communities' safety issues were the most reported barriers from focus groups. Issues within communities became apparent when the moderator asked the first question about physical activity. One parent expresses her opinion after the moderator asked if they were getting enough physical activity,

> "No because you really don't have no where to go because the recreation center it's in a real small we need a bigger recreation department where the children go and learn how to swim and all."

Parents and guardians expressed concerns over their children's lack of access to resources in the Mississippi Delta. A lack of community resources was seen to be a large reason why their children were not receiving the adequate amount of physical activity levels at home. Participants also believe that their neighborhood's environment barriers and the local school's physical education program limit their children's physical activity level.

Parents have several safety concerns within the community, which impacts the amount of physical activity their children were allowed to engage in. The most mentioned safety concerns that parents believe impact physical activity of children was through perceived criminal activity at recreational areas. No participants said they felt safe letting their children use local parks or recreation areas in the community.

Individual and Social Barriers

Many parents believe that time is an issue that interferes with their children being able to be more physically active. Other reasons for lack of physical activity were individual time constraints such as homework, television watching, video games, and parental influences and responsibility. It is obvious parents and guardians do not want their children outside without their supervision. This is a major factor on the amount of physical activity these children are receiving.

> "I say you know it's your work load my workload I have you know too much on my hands just like any working mother and then also because he's an only child he probably would get more if there were more children you know and then they all could go out and do stuff but he pretty much to chooses indoor things because he's by himself and then I don't want to go out there with him so that that that has a lot to do with it you know so."

One parent believes that the problem with getting the adequate amount of physical activity everyday is multifactoral,

> "you're faced with a lot of things in the community you know they have to walk past the corners with the drug dealers and things like that you know so basically kids don't get activity until they go to school sometimes it's the only activity they get at school because they once they go home they're in the house for good and we as parents whether we'll admit it or not once we get in after a hard day of work we don't want to do anything else but sit in front of the television which is usually our babysitter um thirty minutes is what they say each person needs a day in between those breaks and those periods they have activity periods I think they

> need to stop sending them to music and uh what is his other class art and things like that those period and I think they need to encompass more I mean I think they need that but I think they need to make sure they get that thirty minutes of physical activity as well but like I said again the community is everybody not outside the school but in the school as well and they need to work together and that connection is not there."
>
> "I guess I could I could [sic] make my child do more I mean I could stop cranking the car up so much and let's walk some I could do more now that I think about it I know I could I could do more."

School and Physical Activity

At five out of six focus group sessions, problems with children not receiving enough physical activity while at school was a reoccurring issue that was discussed,

> "They get more of that at home than you know they do at school."

Participants believe that since children spend the majority of their day in school, the school should be more involved in providing adequate physical activity,

> "I don't think my family my children are getting enough physical activity because most of the day they are spending in school and they have very little activity period activity period."

Several participants believe that teachers should take action to ensure that their students become active while at school,

> "I believe the reason why the children at this school don't like to participate in anything extra activities cause the teachers don't want to do it when it's 3:30 3:00 comes they have, they're going home."

School curriculum and class scheduling seems to interfere with some children's ability to enroll in physical education classes.

> **"**I know my daughter doesn't get any and it's no [sic] because I think I choose it in the third grade she I signed a form for her to go into the gifted class so with that she don't get she don't get physical education she don't get music so that cuts out all her extracurricular activities then when in the afternoons sometimes they come home with so much homework and by the time they get finished you wouldn't

> believe sometimes how much homework they have (a couple of respondents murmur yes) by the time they get finished it's dark outside."
>
> "the reason is Lockard is what is it is and it's continuing to get worse cause they're talking about they're a level two school and they are more on the education part every time I turn around I've got to go to Wal-mart and buy something to do science project do stuff to do the story board do stuff to do this but it's all academically it's nothing active I mean physical about any of the projects they do because they are trying to get their points up ."

Changes for the Future

Some participants also perceive a need for more resources to be available to the communities in the future,

> **"**I would like to see a YMCA well or a recreation that's open to the kids and available to them."

Others noted the importance of local police to step forward to help protect crime within the community.

> "maybe they could have some auxiliary police just kind of get around the parks and take the parks back from the violent people and fix them up and get new equipment and probably have a little security guy walk around while kids can have fun at the park like they used to."

Community wide involvement is also seen as an important change that would help to increase physical activity levels.

> "if they have something to do somewhere to go where they all can just be together and get positive and stop all this unnecessary stuff on the streets and everything like that they need to get off the streets they need to have somewhere to go and (inaudible) if you can have a program like that somewhere like that you've got a lot more people that might can just kind of like open their eyes and see if we actually try and do something for these kids actually try to do something for them."

It is evident from the focus group sessions that there are many problems that parents and guardians face within the Mississippi Delta. The majority of these

participants were very passionate about their feelings about their children's health. Focus group discussions gave a deeper understanding of the real life problems that are faced. Participants expressed a desire for more community involvement and design of solutions to help with these community issues.

CHAPTER V

DISCUSSION

Demographic Information of Participants

The CDC reported in 2005 for Mississippi, only 40 percent of individuals were getting the recommended amount of physical activity (Centers for Disease Control and Prevention, 2007b). Given that physical activity is such an important factor in preventing and reducing overweight among children, discovering barriers to physical activity among this population is very important. Obesity and other chronic disease factors are more prevalent in minority racial groups (Flegal, Carroll, & Kuczmarski, 1998; Sprafka, Folsom, & Burke, 1988). It is known that low-income African-Americans who live in rural areas of the South are more vulnerable to diseases associated with inadequate diet and physical inactivity. According to the Mississippi State Department of Health, in 2006, in the three counties selected for this project, 32 percent of Leflore County residents, 30 percent of Washington County residents, and 35 percent of Sunflower County residents are below the poverty line, compared to 19 percent of all Mississippi residents (Mississippi Department of Health, 2006). The poverty rate in 2006 in the United States was 12 percent (DeNavas-Walt, Proctor, & Smith, 2007). Neighborhoods with high levels of poverty, minority residents, increased unemployment,

and lack of education may have limited resources or access to areas to play and engage in physical activity. Increasing availability of physical activity facilities closer to home for families would likely promote and increase physical activity participation (Sallis, Howell, & C., 1990; United States Department of Health and Human Services, 2000).

Perception of Factors that Influence Physical Activity

Focus group discussions enable a greater understanding of the multiple issues with daily physical activity of families living in communities in the Mississippi Delta. The present study was designed to investigate the current problems and barriers children in the Mississippi Delta. Key themes were developed through reoccurring statements and thoughts expressed by parents and guardians. Themes were developed by the number of times an issue was mentioned and or discussed by participants. Reoccurring issues that are barriers to participants in some schools are noted for relevance since each focus group is from different areas within the Mississippi Delta. It is important to remember that problems are going to differ due to differences in crime level, recreation and park availability, and local schools. Participants identified various factors that make it difficult for them to be physically active, both perceived and actual. Parents and guardians expressed concerns over their children's lack of access to resources in the Mississippi Delta.

Statistics from the 2000 United States Census also show that the majority of all the residents of the three counties chosen were African American, 71 percent of Leflore County residents, 67 percent of Washington County residents, and 72 percent of Sunflower County residents. Based on the demographic data from these participants, 82

percent (n=36) were African-American. Their attitudes and opinions provide a rich insight on the beliefs, opinions, and feelings of local problems residents in the Mississippi Delta face on a daily basis. Participants believe that the lack of resources available to them keep children from receiving enough physical activity. It has been shown in research that participation in regular physical activity depends in part on the availability and proximity to community recreation facilities or walking or biking trails (French et al., 2001). The parks that are available are believed by these parents and guardians to have been overtaken by drug dealers and crime with very little support by the local police department. Participants do not want children outside in neighborhoods or in local parks because of the lack of supervised playground areas and the overrun of crime.

Most parents or guardians perceive lack of physical activity at school, either by way of recess or physical education classes as a major concern impacting children's physical activity levels. Participants in five out of the six focus groups perceive problems with the local schools and activity levels. At the focus group where no discussion of school physical activity occurred it is important to note that participants were not probed for this specific area in a question by the moderator. It was evident some parents were unaware of the amount of activity within schools while other participants realized what little amount of physical activity was being offered. Participants perceive school and their resources as an important source for their children's' recommended daily activity because of the time their children spend at school everyday.

Participants' concern about their children and grandchildren having little time to be physical active because of schedules, school, safety concerns, and time consumed in

sedentary influences such as television or video games suggest that it is parents and guardians who need to make their children's physical activity levels more of a priority. The issues surrounding parent, guardians, and teacher influenced involvement in physical activity reflects social-environmental barriers (Frankish, Milligan, & Reid, 1998; O'dea, 2003). Interestingly, there are the same numbers of participants that believe their children are receiving enough physical activity as those that do not believe they are participating in enough daily physical activity.

It is evident from the focus group sessions that there are many problems that parents and guardians face within the area. Highly noted for its low income, rural area the Mississippi Delta has problems within the community, school system, and social stresses that act as barriers to daily physical activity. Interestingly enough, many of the parent and guardian participants that believe that they do not feel comfortable with their children being outside in the communities without supervision know that they could get involved more and be physically active with their child. Community wide awareness of the potential dangers of diet and physical inactivity would be beneficial in creating awareness of problems to head in the direction of change. It has been noted in other studies the lack of convenient facilities is a barrier to physical activity for both adults and youth. Also, increasing availability of physical activity facilities closer to home for families would likely promote physical activity (Sallis et al., 1990; United States Department of Health and Human Services, 2000). Access to a safe environment seems to be limiting children's exposure to physical activity. It is noted that access to a safe environment is important in the promotion of physical activity opportunities among children (Whyte & Shaw, 1994). In 2005 Booth et al, also found physical environments

influence physical activity levels. Safer neighborhoods can increase physical activity levels. Lower socioeconomic status neighborhoods tend to have less access to physical activity resources, which leads to greater inactivity of individuals in that area. Higher activity levels are reported in neighborhoods with more physical activity resources such as sidewalks and safe streets (Booth et al., 2005).

Study Limitations

Specific limitations for this research are noted and taken into consideration when reporting results. Demographic surveys completed by participants asked for the number of days per week for participation in physical activity for at least 30 minutes. This question was given without a definition or examples of physical activity. Since housework, yard work, and other light household chores are considered physical activity, perception of participation could be underreported. Over estimated participation could also result from lack of explanation of terminology. In the selection process of participants, principals and other members of the research team personally selected each participant in order for the focus groups to have a wide range of views and beliefs of the whole community. Although it is an advantage to hand select participants, it is also a limitation due to the variability of reliability of the principals judgment of selection.

The questions for focus groups were designed prior to actual focus groups sessions. However, the moderator did not ask all questions at every focus group. Some issues such as problems with school physical activity was only probed in some sessions. When reporting results and determining themes, the transcripts of the actual focus groups were read and analyzed as a whole document by looking for specific words and

statements rather than by analyzing for answers after each specific question. Reliability of results is the most important outcome for this research.

Interventions in the Mississippi Delta

Given the health benefits of regular physical activity, Americans are not active at the recommended levels. There are barriers that keep Americans from being or becoming regularly physically active. Understanding and learning the common barriers that are faced is the first step in creating strategies to overcome them to help increase levels of physical activity. There are numerous barriers to physical activity. Children and adolescents are influenced by home, family, school, after-school environments, and peer influences (Fulton et al., 2004; Kohl & Hobbs, 1998; Taylor et al., 2002). Accessing and addressing these barriers is the best way to help improve participation in physical activity for all ages. Research has been conducted on methods and interventions that facilitate increased physical activity in children. This research is intended to gain a deeper understanding of the barriers to physical activity through actual individuals living in the Mississippi Delta. Developments of intervention programs from this research of the focus groups are the intended outcomes.

Currently, there are programs underway designed to promote health and wellness in the Mississippi Delta. The Delta Health Education Partnership is an interdisciplinary and distance education program designed to increase access to health care in medically underserved and health professional shortage areas in the lower Mississippi Delta. Currently the project spans six Universities across Arkansas, Louisiana, Mississippi, and Tennessee (Skorga, 2002). The Delta Nutrition Intervention Research Initiative is

another project designed to improve health in 35 counties, in Louisiana, Arkansas, and Mississippi, in the lower Mississippi Delta by determining food and nutrition problems within the area. Key informants rated individual-level factors such as food choices, education, wiliness to change, and health behavior as more important contributors to problems in nutrition and health than community-level factors such as resources and food and health care access (Yadrick et al., 2001).

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this descriptive analysis of the barriers that are perceived to be problematic towards children living in the Mississippi Delta is to create programs and interventions that are specific to these unique communities. The goal is to find a way around the obstacles these individuals face to improve the health and lifestyles of these communities. The people of the Mississippi Delta are aware of the many changes that need to be taken in order to change the health status and quality of life of individuals living in the area. The most frequently reported barrier was environmental issues such as fear of children's safety, lack of resources, and individual and social constraints such as time, parental influences, and television viewing. School commitments such as homework were also frequently mentioned. For response during focus groups, parental responsibilities and attitudes about prioritizing physical activity for their children seem to be effecting participation in activity. Concerns about safety and violence were the most frequently mentioned issues among participants. Participants' perceptions of children's safety seem to also be a barrier to physical activity. Future work must seek to understand how specific types of environmental changes are likely to impact physical activity. Addressing the distribution of physical activity facilities is one strategy to increase physical activity levels and reduce overweight prevalence in Mississippi. Further data

collection through in-depth interviews, focus groups, and surveys of individuals of various ages are needed to provide more of a deeper understanding of other barriers to physical activity.

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APPENDIX A

DEMOGRAPHIC SURVEY FOR PARTICIPANTS

Survey for Focus Group Participants
Focus Group of Parents

Please circle (or fill in) the answer that best fits you.

Your Gender: Male Female

Your age: 20-29 30-39 40-49 50-59 60+ years

Your race: Non-Hispanic black
Non-Hispanic white
Hispanic
Asian/Pacific Islander
Other (please specify: _____)

Your education: Less than high school
High school diploma
Some college
Bachelors Degree
Masters Degree
Beyond Masters Degree
Other (please specify:_____)

Your marital status: Married
Divorced
Separated
Widowed/Widower
Never been married

Your annual income: _____

Number of children living in your household:____

What is your current occupational status?
Work full-time
Work part-time
Not currently employed

What does your child eat for lunch on school days?
Brings lunch from home
Purchases school lunch
Receives free/reduced lunch

How many days of the week do you eat **at least one** meal as a family?

1 2 3 4 5 6 7

On average, how many servings* of fruits and vegetables do you consume each day?

_____

(*Examples of servings: one medium piece of fruit, ½ cup cooked vegetables, 1 cup salad greens, 6 ounces juice)

How many days of the week are you physically active for at least 30 minutes?

1 2 3 4 5 6 7

APPENDIX B

FOCUS GROUP SCRIPT

Moderator Guide
Focus Groups with Parents of Young Children
Improving the Health in the Mississippi Delta through a Coordinated School Health Program, Community Needs Assessment

Overall objective of conducting focus groups: To assess community needs in terms of healthy eating and physical activity.

Background and Introductions

Welcome and thank you for agreeing to be a part of this group. You have been invited to be a part of this focus group to share your insight about your community. A focus group is a meeting where a group of people gives opinions about a particular topic. Please feel free to share openly; there are no right or wrong answers, only opinions. You should listen and respond to each other, and to me as the moderator. In some cases, points of view may differ, but you should feel free to share your point of view even if it differs from what others have said. Everyone in the group does not have to agree.

Today we will be talking about eating habits and physical activity of children in the school setting and in the community. We need your input and help to learn about the needs of the community. The information you provide will be used to guide community programs to help people have healthy eating and physical activity habits.

We would like to record the discussion so that it will help us remember what you said later to write a summary. If you are not comfortable with the use of a recorder, you are free to withdraw from the group. In addition to the recorder, _____(co-moderator) will take notes. The notes and tape recording ensure that we can refer to all of the comments.

Your participation is voluntary. If at any time anyone feels uncomfortable or does not wish to continue, please let me know.

Before beginning, we will discuss some ground rules. Please speak up one at a time, otherwise it will be hard to distinguish the comments on tape. Please say your first name each time before speaking, but know that names will not be attached to any comments in the report. Finally, we would ask that you please turn off all cell phones and pagers during this time or if that is not possible, please use the vibrate or silent mode on your device. We would ask that you do not text message during the focus group as this may be distracting to others in the group.

When I ask each question, I will give you some time to write down a few things that pop into your mind. Then we will discuss the question together. You will keep your notes; we will not collect them.
The session should last no longer than 90 minutes.

Let's begin by introducing ourselves. Share something about yourself, like whether you are married and have children (ages) or an interesting hobby.

Part I: Eating Habits
We will start today with some discussion about eating habits.

1. **When I say "eating right" or "eating healthy," what comes to mind for you?**

2. **Where have you heard about nutrition in the past? What did you hear? What did you think about those messages?**
   Note to moderator: Look for information sources they consider trustworthy. Where do they prefer to get nutrition information?

3. **Are there things about your children's eating habits you would like to change? What keeps you from making changes?**
   Note to moderator: Probe for internal barriers (feelings, beliefs, personal traits) and external barriers (influence of family and friends, finances, community, time, etc.).

4. **Is there anyone or anything currently in your life that helps you make healthy choices?**

5. **What are some things that could help you make changes in your children's eating habits?**
   Note to moderator: Look for the positive. What is already happening that could be reinforced? Again probe for internal (feelings, beliefs, personal traits) and external factors (influence of family and friends, finances, community, time, etc.).

   Probe: how could the community help you make these changes? (look for family, schools, grocery stores, workplace, church)

Part II: Physical Activity
Now we are going to talk about physical activity habits. When we talk about "physical activity," we mean both lifestyle activities, such as walking, heavy cleaning, gardening, etc. and also "exercise" (such as going to the gym or weight room) and sports activities.

4. **When you hear the term "physical activity," what comes to mind? Do you think your children get enough physical activity? Why/why not?**
   Note to moderator: Do participants prefer the word "exercise" or "physical activity?" Do they have positive or negative associations with these words?

5. **What physical activities and/or recreational activities do your children enjoy? What is it about these activities that your children find enjoyable?**

6. **What physical activity issues do you think are most pressing for your children?**

Probe: What makes it hard to be more physically active? What are some things that KEEP your children from getting more physical activity?

Note to moderator: Probe for internal barriers (feelings, beliefs, personal traits) and external barriers (influence of family and friends, finances, community, lack of opportunity, safety concerns, time, etc.).

7. **What impact does your neighborhood or community have on your children's physical activity?**
   Probe: Do they make it more easy or hard?

8. **Is there anyone/anything you can think of that helps your children get more physical activity?**

9. **What are some things that could help your children be more physically active?**
   Note to moderator: Look for the positive. What is already happening that could be reinforced? Again probe for internal (feelings, beliefs, personal traits) and external factors (influence of family and friends, finances, community, time, etc.).

   Probe: how could the community help you make these changes? (look for family, schools, grocery stores, workplace, church)

Part III: School Safety

We are also interested in knowing about how safe parents feel their children are at school.

10. **What concerns (if any) do you have about your children's safety while at school? How do you handle concern about your child's school safety?**
    Note to moderator: Look for concern about violence and bullying.

Lastly, we would like you to help us think about positive things in the Delta.

11. **What positive things can you tell me about the Mississippi Delta?**