

**A WALK IN THE PARK: A STUDY OF AFRICAN AMERICAN WOMEN  
AND AN OPPORTUNITY FOR PHYSICAL ACTIVITY**

**By**

**LAUREN GARROTT**

**A REPORT**

**Submitted in partial fulfillment of the requirements for the degree**

**MASTER OF REGIONAL COMMUNITY PLANNING**

**Department of Landscape Architecture/ Regional & Community Planning**

**College of Architecture, Planning & Design**

**KANSAS STATE UNIVERSITY**

**Manhattan, Kansas**

**2014**

**Approved by:**

**Major Professor**

**Mary Catherine (Katie) Kingery-Page**

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LAUREN GARROTT





African American women exercising outdoors, copy right free image from <http://healthyounow.com>



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## Abstract

In the United States, minorities are less physically active and in turn at higher risk for heart disease, diabetes and obesity. The purpose of my study is to examine the factors that influence physical activity in neighborhood parks and to answer: What aspects of park design and programming discourage physical activity participation in African American women? My goal is to identify barriers to physical activity and make recommendations for improving design and programming of a neighborhood park. The results of my research are relevant to the planning profession because planners can use public policy to combat inequality in the built environment.

Many studies have related recreation access to socioeconomic status, race, ethnicity, age, and gender. While African American women are not the only disadvantaged population when it comes to access to recreation, they do have a higher risk for obesity. In trying to answer why African American women have higher rates of obesity, some studies have found that while willingness to participate in physical activity does not differ in white and black women, duration of physical activity does.

My research employs a mixed methods approach to understand the barriers to physical activity experienced by African American women, in context of a neighborhood park. This study uses a physical assessment of James Mulligan Park and the surrounding neighborhood within Alexandria, Virginia. Following the physical assessment I piloted a survey to gather information on the barriers to physical activity. The pilot guided a final survey of seventeen participating African American women in the neighborhood.

I hypothesized that the perception of park safety will have an effect on the rate of physical activity in African American women. This hypothesis points to a general barrier for all women. Based on literature review, I also expected to find barriers unique to African American women.

The study concluded that African American women in this neighborhood share some barriers with all women and they also expressed some barriers unique to African American women. I found that personal barriers like “exercise tires me” was the most common, rather than perceptions of safety. In addition, I found culturally specific barriers, such as “exercising is not my cultural activity” and “I avoid exercise to protect my hairstyle.” Based on my analysis of the setting and surveys I make several recommendations for the park and neighborhood.

<b>01</b>	INTRODUCTION & BACKGROUND.....	1
<b>02</b>	LITERATURE REVIEW.....	7
<b>03</b>	METHODOLOGY.....	15
<b>04</b>	FINDINGS.....	23
<b>05</b>	CONCLUSIONS & DISCUSSION.....	55
<b>06</b>	APPENDICES.....	68

# List of Figures

FIGURE 2.1 CDC 2008 Physical Activity Guidelines for Americans.....	12
FIGURE 3.1 Percent African American by Census Tract .....	16
FIGURE 3.2 Process Diagram.....	17
FIGURE 3.3 Aerial View of James Mulligan Park.....	18
FIGURE 4.1 Aerial View of James Mulligan Park with Bounding Streets Noted.....	25
FIGURE 4.2 Aerial Photo of Neighborhood Highlighting Hampton Street.....	26
FIGURE 4.3 Hampton Street: Land Use.....	27
FIGURE 4.4 Hampton Street: Public Transportation.....	27
FIGURE 4.5 Hampton Street: Quality of Environment.....	27
FIGURE 4.6 Aerial Photo of Neighborhood Highlighting Braddock Road.....	28
FIGURE 4.7 Braddock Road: Land use.....	29
FIGURE 4.8 Braddock Road: Parking.....	29
FIGURE 4.9 Braddock Road: Quality of Environment.....	29
FIGURE 4.10 Aerial Photo of Neighborhood Highlighting Beauregard Street.....	30
FIGURE 4.11 Beauregard Street: Places to Walk or Bicycle.....	31
FIGURE 4.12 Beauregard Street: Non-residential Land Use.....	31

FIGURE 4.13 Beauregard Street: Street Characteristics.....	31
FIGURE 4.14 Aerial Photo of Neighborhood Highlighting King Street.....	32
FIGURE 4.15 King Street: Types of Residential.....	33
FIGURE 4.16 King Street: Predominant Land Use.....	33
FIGURE 4.17 King Street: Quality of Environment.....	33
FIGURE 4.18 On Road Lanes.....	34
FIGURE 4.19 Map of Bike Lanes.....	34
FIGURE 4.20 Image of Beauregard Street Facing North.....	35
FIGURE 4.21 Sidewalks & Connectivity Map.....	36
FIGURE 4.22 Pedestrian Environment Continuum.....	39
FIGURE 4. 23 PARA Signage: Park Sign at North Entrance.....	39
FIGURE 4.24 PARA Signage: Hours of Operation.....	39
FIGURE 4.25 PARA Signage: Dog Sign for Park.....	39
FIGURE 4.26 PARA Lighting.....	39
FIGURE 4.27 PARA Signage: Park Sign at South Entrance.....	39
FIGURE 4.28 PARA Amenities: Stairs at South Entrance.....	40
FIGURE 4.29 PARA Amenities: Slope at South Entrance(facing north).....	40
FIGURE 4.30 PARA Amenities: Slope at South Entrance(facing south).....	40
FIGURE 4.31 PARA Amenities: Bench.....	40

FIGURE 4.32 PARA Amenities: Landscaping Efforts.....	40
FIGURE 4.33 PARA Amenities: Trash Receptacle.....	40
FIGURE 4.34 PARA Amenities: Picnic Table.....	40
FIGURE 4.35 PARA Incivilities: Litter in Leaves.....	41
FIGURE 4.36 PARA Incivilities: Litter in Leaves.....	41
FIGURE 4.37 PARA Incivilities: Litter in Leaves.....	41
FIGURE 4.38 PARA Incivilities: Litter in leaves.....	41
FIGURE 4.39 PARA Playground Features: See-saw.....	42
FIGURE 4.40 PARA Playground Features: Swing Set Facing West.....	42
FIGURE 4.41 PARA Playground Features: Accessible Swing.....	42
FIGURE 4.42 PARA Playground Features: Four Seat Swing Set.....	42
FIGURE 4.43 PARA Playground Features: Kid Force Spinner.....	43
FIGURE 4.44 PARA Playground Features: Standing Spinner .....	43
FIGURE 4.45 PARA Playground Features: Modular Structure.....	43
FIGURE 4.46 Reasons to Exercise in the Park.....	48
FIGURE 4.47 Reasons not to Exercise in the Park.....	48
FIGURE 5.1 Barriers to Physical Activity Diagram.....	56
FIGURE 5.2 Image of Fence.....	59
FIGURE 5.3 Sidewalks Map.....	60

# List of Tables

Table 1 Physical Inactivity Among Adults 18 & over: 2011.....	11
Table 2 Survey Administration and Response Rate.....	21
Table 3 Survey Results.....	45
Table 4 Response to Adequate Sidewalks.....	46
Table 5 Response to “I am fatigued by exercise”.....	47
Table 6 Response to “Too few places to exercise”.....	49
Table 7 Response to “Avoiding exercise to protect hair”.....	50
Table 8 BMI of Respondents.....	51
Table 9 Educational Attainment.....	52
Table 10 Marital Status.....	52
Table 11 Typical Physical Activity .....	53
Table 12 Time of day.....	53
Table 13 Respondents with Gym Memberships.....	54
Table 14 Respondents use of Public Recreation Cente.....	54

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## **Dedication**

This is dedicated to my family, Rodney and Angelique. Your support and encouragement keep me going. I couldn't have done it without you.

To my mom for instilling in me the importance of being healthy.

To all the strong black women in my life this is for you. You have shown me our worth and the tremendous value of this work.

## Preface

The purpose of this document is to investigate the use of James Mulligan Park by African American women for physical activity (i.e. exercise). I focus on the barriers to physical activity in the park as they are perceived by the African American women in this community. The document is organized in five chapters: introduction and background, literature review, methodology, findings, and conclusion, recommendations and discussion. The target audience for this report is planners, park and recreation managers, landscape architects and public health officials.



# **chapter one.**

## **INTRODUCTION & BACKGROUND**

## Introduction

At a time when the obesity epidemic is a major concern in United States (US) a particular group, African American (AA) women, suffers disproportionately partially due to lower physical activity (PA) levels. In the US, minorities are less active and in turn at higher risk for heart disease, diabetes and obesity. According to the Centers for Disease Control and Prevention, four out of five black women have a body mass index above 25 %, the threshold for being overweight or obese. In comparison, nearly two thirds of Americans overall are in this category (“African-American women have highest obesity rate,” n.d.). Furthermore 55% of AA adults are inactive, meaning they do not meet federal physical activity guidelines. The purpose of my study is to examine the factors that discourage physical activity for AA women in a neighborhood park and answer this question: Are there aspects of park design and programming that discourage PA participation in AA women? I will summarize literature to establish background of major recreation and public health concepts to frame my research by focusing on known factors that discourage participation in PA in the general population.

## Value Statement

The designed environment influences an individual’s participation in PA. Everyone should have the option to live in an environment that promotes active living. If one can understand the factors that influence women’s PA then one can begin to intervene in parks to successfully improve health through design. By studying the physical environment and individual behavior my research will thoroughly address affordance theory. J. J. Gibson defines affordance theory as the perception of the environment that inevitably leads to some course of action. Affordance theory has various implications for design and some believe that good design makes affordances explicit (Gibson, 1977).

## Background

This study focuses on barriers to PA for AA women in relation to a neighborhood park. My research is relevant to planning because planners can use public policy to combat inequality in the built environment and prevent diseases like diabetes and heart disease

through designing environments that encourage physical activity. Many studies address a need for research in sub-populations of both women and minorities (Ding & Gebel, 2012; Day, 2006; Hall, 1998; Taylor, Floyd, Whitt-Glover, & Brooks, 2007). Few studies have examined the relationship between AA women and park use.

Although little research has been done at the neighborhood park level there has been research that addresses minority use of national parks. Studies consistently show that visitation of national parks is lowest by minorities. In a comprehensive study done by the National Park Service in 2000, only 13 % of AA respondents reported visiting a national park within a two year time span. That is compared to 27 % for Latinos, 29 % for Asians and 36 % for whites, who reported using national parks in that same time span (Navarro, 2010). This is an issue that has been reported since the 1960s. In response to the low visitation from AAs, the National Park Service is making efforts to diversify its guests and workers (Navarro, 2010). In the article, “Red white and black of the national parks” Meeker et al. (1973) suggest this task might not be that easy because AAs place a different value on nature when compared to traditional park users. The article suggests that without balance, nature can be a drawback for AAs visiting parks. The visitation at the national level can be representative of park visitation at the neighborhood level. Therefore the results of my research can be useful to help park managers understand how to serve AA women in other park settings.

While not specifically about AA women, several studies examine adult behavior in parks. In an observational study conducted by Floyd et al. (2009), researchers studied use of public parks in diverse communities in Tampa (42-70% AA) and Chicago (60-99% AA). Their results showed that 70% of Tampa and 51% of Chicago park users observed were engaged in sedentary behaviors. In both cities, adults were less likely than children to be observed in walking or vigorous activity. Floyd et al. also found that fewer women and girls were observed in parks than men and boys (especially in Chicago) and that females were significantly less likely to be observed in walking or vigorous physical activity than males in Tampa parks. The study findings suggest that specific configurations of park environments may enhance or discourage PA by women in parks.

Studying AA women is significant since they have some of the highest rates of obesity in respect to all minorities. In Glestu and Tovin's 2010 journal review article, they reveal

that AA women have lower PA rates than all other races except Mexican Americans. Some major findings in this review article are that there are three facilitators of PA for women in general, which are setting goals, safe places to exercise and social support. The barriers that were identified are caretaker roles, lack of child care, and unsafe neighborhoods. I am studying all of these aspects to understand the significance of each and how it contributes to an individual's participation in PA in the setting of a neighborhood park. Gletsu and Tovin suggest, "Future studies should focus on promoting family physical activity, as social support is a key component of successful adoption of physical activity in this population" (Gletsu &Tovin, 2010).

A study conducted by Boston University's Slone Epidemiology Center collected health questionnaires from a variety of AA women in different regions of the U.S. The findings show that most AA women gain weight in the decades around the time they experience menopause. A possible explanation for weight gain is that between 60% and 70% of AA women have their first children before age twenty five. At this time, priorities switch to raising a child. In addition, AA families face unique difficulties and have family ties different from other races. "Women choose single motherhood partly because the general expansion of their options since the 1960s makes it more possible for them to forego marriage or leave an unhappy relationship, partly because black women have a strong tradition of economic independence and collective child rearing that makes them less dependent on men than are many white women, and partly because the black community has always valued children, in or out of wedlock, more than has mainstream white culture" (Coontz, 1992, p. 252).

Along with barriers like time, park access and childcare, AA women face barriers specific to their demographic. Biological factors, body image, and traditional diet are culture specific aspects that affect PA participation in AA women. "Black and Latino populations may face an extra risk of obesity and obesity-related health problems because of physiology and body composition (Day, 2006). Attitudes towards bodies are another cultural difference in AA women that can contribute to obesity. According to Day, black women's ideal body sizes are larger than those of white women and obesity does not necessarily generate negative body images among black women. Blocker and Freudenberg found black women compare themselves to their own community, and not to broader societal ideals, when developing ideas about weight and obesity (Day, 2006). The phrase "preference for a larger body habitus" was referred to by Johnson-Askew et al, 2011.

They claim that AAs preference for a larger body habitus contributes to obesity. The cultural standards set by AA women can affect the perceived need for weight loss as well as the motivation to do so (Komar-Samardzija et al., 2012). Furthermore, the traditional AA diet is high in cholesterol and saturated fats, which contributes to health risks for this group, AA women.

Another barrier unique to AA women is that participating in PA can ruin hairstyles (Gletsu & Tovin, 2010). A study in Winston Salem, North Carolina found a statistical significance of relationships between hair care practices and PA. Fifty percent of AA women surveyed have modified their hairstyle to accommodate exercise and nearly 40% (37.9%) avoid exercise at times owing to hair-related issues (Hall et al., 2013). The questionnaire used by Hall et al. will influence questions I ask of respondents in my research.

It is one thing to note that different people use parks in different ways, but a totally different thing to find out why. I am specifically interested in answering: **do AA women use a neighborhood park for recreation and are there barriers that might keep AA women from exercising in the park?** The following section is a review of literature which pertains to parks and recreation, perception, physical activity and environmental justice.



# **chapter two.**

## **LITERATURE REVIEW**

## Parks and Recreation

Jin Hyung Lee et al. outline the history of research related to physical activity in parks, starting as early as the 1950s. Their summary of literature shows how research focus has changed over time. The literature has been evolving over the years: many of studies have looked at the relationship between leisure participation and socio-economic status (SES), race, ethnicity, age and gender (Jin-Hyung, Scott, & Floyd, 2001). The researchers identify a key point: AA women are not the only disadvantaged population when it comes to recreation participation, but they do have a higher risk for health issues like obesity. It is clear from Lee et al.'s summary of literature that the built environment impacts everyone differently because of individual perception. Very little literature explores reasons for the inactivity specific to AA women.

Ching-hua et al. acknowledge that America has been called a “melting pot” for years and whether you agree with this term or not, it is true that America is a diverse nation. “However, if park managers, recreation agencies, and leisure science researchers are to meet the needs and interests of these diverse populations, it is important to understand how the expectations and desires of men and women in such ethnic groups differ from those traditional park users” (Ching-hua, Sasidharan, Elmendorf, & Willits, 2005, p. 282). Park designs should match the behavior of the changing demographics because recent projections show ethnic populations on the rise. “Current demographic trends indicate that the growth rate of racial and ethnic minority groups in the US is increasing faster than that for the population as a whole” (Ching-hua et al., 2005, p. 281). Results of this 2005 study showed that AAs and Hispanics were likely to rate a traditional park landscape as important, while whites preferred more wildlife and water in parks. African Americans did not find the availability of water to be an important amenity. They also found that ethnicity played a stronger role in park preference than gender did. Ching-hua et al. reported that “African Americans preferred more developed settings/ facilities and scenery with more open space and built structure than others” (Ching-hua et al., 2005, p.285).

## Perception

Evenson et al. (2007) examined the association of perceived physical neighborhood factors with PA, sedentary behavior, and BMI among adolescent girls. The researchers found that seeing walkers and bikers on neighborhood streets, not having a lot of crime in the neighborhood, seeing other children playing outdoors, having bicycle or walking trails in the neighborhood, and access to physical activity facilities were factors associated with lower BMI. Evenson et al. identified factors that contributed to a lower BMI and others that contributed to a higher BMI. For example, perceptions that traffic is not a problem (i.e., disagreeing that there is too much traffic) was associated with lower BMI (Evenson et al., 2007). Even though the population they studied was much younger than my subjects it is still useful to note any comparison between the two, as adolescent girls grow into women. The methodology used was a questionnaire that addressed several neighborhood factors. It is important to explore how the neighborhood factors are perceived by their users and how that affects their PA. This research is helpful because it can influence designers to change the design of neighborhoods.

Arlene Hall's 1998 literature is important for my research because it compares the PA of AA and white women. It also explores the theory of perception as it studies women's perceived barriers to PA. This source is especially useful to help me gain an understanding of racial disparities in PA participation. The diversity of human nature adds to the cognitive, social, and environmental factors that either encourage or discourage participation. It states that women are less physically active than men in all races and socio-economic statuses, with black women reporting lower levels of PA than white women. The fact that women's PA has been studied less than men's influenced my decision to study AA women in my research. This source provides many findings that confirm the purpose and need for my research. For example, the research found that black women had a significantly higher BMI than white women. Hall discusses how understanding the factors that influence women's PA can help designers improve health through design. Another finding reports there was no significant difference between the groups regarding the overall amount of physical activity they reported. However, middle-income women were

more likely to report time expenditure as a barrier than low income women, and it was more likely for white women to report time as a barrier than black women. Hall's research uses illuminative evaluation and ethnomethodology to understand the behavior of women and PA. The goal of Hall's research is exploratory; she aims to understand why women do what they do. Some of the concepts that are discussed in Hall's work are the basis for my survey and interview questions, for example, the Exercise Benefits Barriers Scale (EBBS). The EBBS has questions that address barriers to physical activity and compares them with the perceived benefit of PA.

In an article by Bai et al. (2013) researchers examined how perceptions of park characteristics relate to PA and health. The researchers say, "Parks are used by a vast majority of people and thus can enhance physical activity at the population level across ages, cultures, ethnicities, genders, income levels, and abilities." (Bai et al.,2013). Based on the framework of Bendimo-Rung the park characteristics that influence park-based PA are identified as access, safety, features, condition, and attractiveness. Bai et al. identify particular features that enhance park based PA, such as the presence of trails, wooded areas, and water features. The results show that perception of the park is related to physical activity. Specifically, greater perceptions of neighborhood parks as a benefit to people in the neighborhood was associated with higher levels of overall moderate-to-vigorous physical activity, higher levels of park-based weekly physical activity, and lower BMI (Bai et al.,2013). This is crucial because people make their decisions based on perception, not on the objective measures that some researchers use. The researchers also find that understanding the nonusers' perceptions of the neighborhood park is important as well. Their research shows that the perception of quality can positively affect visitation rates, but not necessarily PA. I believe it is important to explore characteristics of a park and its perceived quality as I study barriers to PA of AA women in parks, as their preference for characteristics may differ from those reported by Bai et al.

## Physical Activity

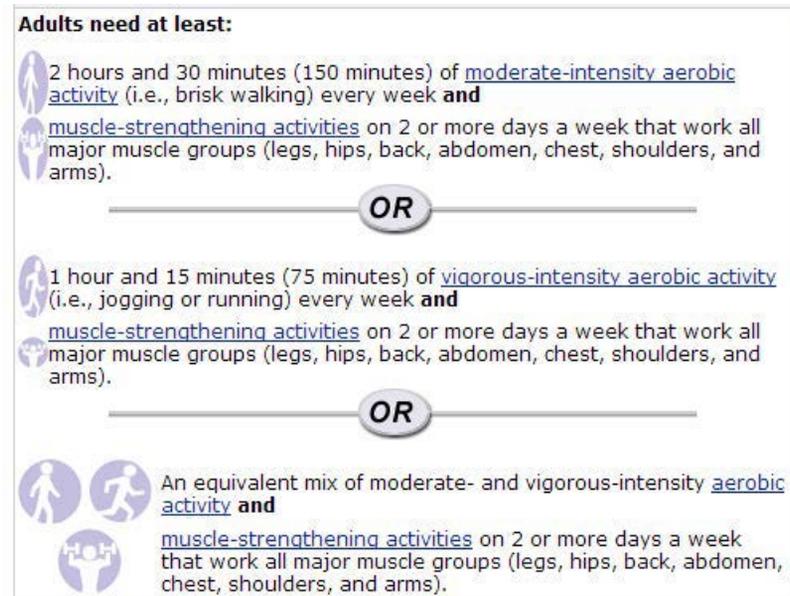
Kristen Day's 2006 article, "Active Living and Social Justice", explores ways to help address obesity risks through appropriate urban design and planning. Day examines the physical environment and other factors that shape opportunities for physical activity in low income communities of color. She demands emphasis be made on minority communities based on the severity of statistics for the obesity epidemic. Factors that contribute to obesity are biological, attitudes towards bodies, and traditional diets. These are outside of the control of planners. But other factors, such as food insecurity and physical inactivity, are more amenable to intervention by planners and urban designers. Rates of PA are tied to socioeconomic status among adults and youth (Cauley, Donfield, Laporte, & Warhafig, 1991; Frank et al., 2003; Carcia et al., 1995; Giles-Corti & Donovan, 2002; King et al., 1999; Kitamura, Mokhtarian, & Laidet, 1997; Sallis, Hovell, Hofstetter, & Barrington, 1992; Sallis, Simons-Morton, et al., 1992; Sallis, Zakarian, Hovell, & Hofstetter, 1996; U.S. Department of Health and Human Services, 1996). In the US, AAs and Latinos are more inactive than are non-Latino White individuals, which can be seen in the table below (GDC, 1994; Crawford et al., 2001; Gannon, DePietro, & Poehlman, 2000; U.S. Department of Health and Human Services, 1996; Weinsier et al., 2000).

**Table 1 Rate of Physical Inactivity Among Adults 18 & over: 2011**

<b>Non-Hispanic Black</b>	<b>Non-Hispanic White</b>	<b>Non-Hispanic Black/ Non-Hispanic White Ratio</b>
55.2	44.1	1.3

Source: CDC 2012. Summary Health Statistics for U.S. Adults: 2011.  
<http://minorityhealth.hhs.gov/templates/content.aspx?ID=6456>

Caution is urged in interpreting physical inaction, because the way PA is measured can make statistics misleading. The conceptual model for active living in minority communities acknowledges that active living is affected by societal, individual, group level, and physical environmental features (Day, 2006, p. 91). Societal factors, poverty, no access to health information, limited opportunities for physical activity, and individual factors all play a role in the health of minorities. Cost, time, limited knowledge, language barriers and the fear of crime influence the level of PA. Day's article provides fundamental features that can support active living. "According to the 2008 Physical Activity Guidelines for Americans, you need to do two types of physical activity each week to improve your health— aerobic and muscle-strengthening" ("Physical Activity for Everyone," n.d.)



**FIGURE 2.1** Source: CDC 2008 Physical Activity Guidelines for Americans

Grant et al. (2010) identify four barriers to addressing health concerns in design among designers who participated in a focus group. The four barriers are financial barriers (building and maintenance, through funding programs), legacy issues (historic decisions), governance barriers and cultural issues (car-oriented, don't feel safe with kids outside, what becomes the norm). Grant et al. focus on optimizing investment in the built environment, taking a policy making perspective. This source points out successful solutions to improve the built environment like farmer's market initiatives and city ordinances promoting walking and biking.

Bruce et al. (2007) determined the extent to which the factors associated with BMI vary by race and gender. Studies link economic disadvantages to racial disparity in obesity, but there are more factors. These findings suggest that the combination of race and gender amplify potential health risks for AA women. Human capital, relationship and support, health status and health behavior, and stress outlook were identified as factors that are associated with BMI. The human capital measures were found to have a statistically significant relationship with BMI. The results show that social support was not relevant to AA females, which contradicts Glestu & Tovin's hypothesis. "This study is significant because it highlights the potential implications that race and gender can have for health outcomes, such as, in the case, BMI" (Bruce, Sims, Miller, Elliott, & Ladipo, 2007, p. 1157). This study highlights the complexity of all of the factors that influence BMI.

Ding and Gebel (2012) inform many decisions in my research because their review is critical of mistakes made by past researchers. They state four recommendations for future research on my topic which are improving methodological rigor, improving specificity of reporting, conceptual match, and more emphasis on measurement mode. This essay addressed my concerns of how specific I should make my sample population and how I should narrow my research question. Focusing on only adult AA women will help me avoid misleading conclusions. Using the advice of Ding and Gebel I will make my research stronger by incorporating both objective and perceived measures of the built environment, improving understanding of population subgroups through subgroup specific analyses, and improving the identification and definition of a place on a societal scale.



# **chapter three.**

## **METHODOLOGY**



## Overview of Methods

The study employs a mixed-method approach to study barriers to PA for AA women in neighborhood parks. The physical observations and survey are a combination of qualitative and quantitative measures. While the surveys address the qualitative measures, I will study the neighborhood, park and residents near James Mulligan Park in City of Alexandria, Virginia to gain an understanding of park recreation in the area. I will use the Active Neighborhood Checklist (Christine Hoehner, 2011) to observe the neighborhood surrounding the park. By documenting the neighborhood I can see if the area supports or discourages physical activity and therefore influences the activity in the park. In order to assess the park I will use PARA, Physical Activity Resource Assessment (Lee, Booth, Reese-Smith, Regan, 2005). This instrument describes the features, amenities, incivilities and quality of the park. Using this instrument I can document what the park needs to promote PA in AA women. To account for weather, I will be conducting my observation in November as well as March and will seek to schedule site visits during projected days of fair weather. I will use a detailed survey, adapted from the Environmental Benefits and Barriers Scale, to study residents within a block of the park (see appendix d). The survey captures the users' perception of the environment and will be analyzed.

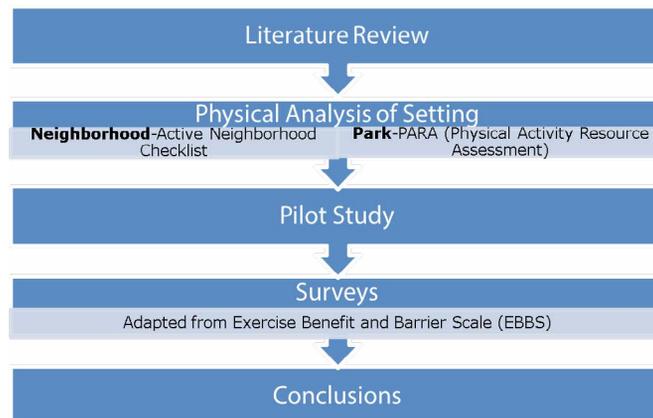
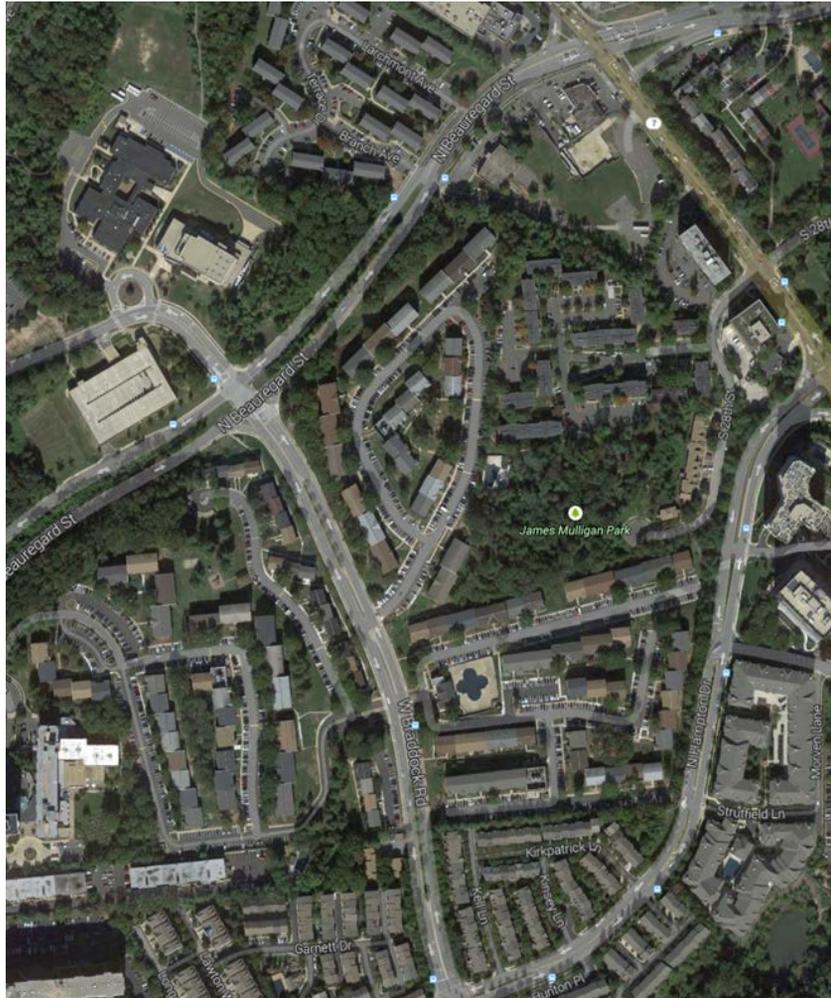


FIGURE 3.2



**FIGURE 3.3**

Aerial view of James Mulligan Park and the surrounding neighborhood.  
Aerial Photo of Neighborhood.  
Google Maps source image. Retrieved February 10, 2014.

## Active Neighborhood Checklist

The Active Neighborhood Checklist (Hoehner, 2011) is an observational tool designed to assess key street level features of the neighborhood environment that are thought to be related to physical activity behavior. The Checklist assesses five general areas: land use, public transit stops, street characteristics, quality of the environment for a pedestrian, and places to walk and bicycle. The data collected can be used to provide recommendations based in evidence. The data collected can be used to raise community awareness about the role of the environment in supporting or discouraging physical activity.

## PARA

The PARA (Lee, Booth, Reese-Smith, Regan, 2005) is a one-page, check-box instrument used to assess the type, features, amenities, quality and incivilities of a variety of physical activity resources (e.g, parks, churches, schools, sports facilities, fitness centers, community centers, and trails). The assessment took fewer than 10 minutes for me to complete. Features, amenities and incivilities were rated using discrete operational definitions (with pictures as aids) on a rating scale of poor, mediocre or good. The instrument also requires counts for features like baseball and soccer fields, amenities like drinking fountains and picnic tables.

## Pilot Study

I conducted a pilot study to explore in-depth attitudes and behaviors of AA women regarding PA in the park. There were five eligible respondents in a pilot study on January 19th and 20th. The surveys were conducted in the Bolling Brooks apartments that are closest to the park. Of the five women I spoke with four women wanted improvements related to kids. They also expressed concerns about the lighting in the park. Based on the response from the draft survey I saw a need to reword my survey questions to address my research question. The most common themes were more activities for the kids, better lighting and better trails. The pilot study assisted me in developing questions for my final survey.

## Survey

The survey instrument was developed drawing upon previous studies dealing with park preferences and perceived benefits. The survey is adapted from questions on the Environmental Benefits and Barriers Scale created by K. Sechrist, S. Walker, N. Pender (1985), focusing specifically on those questions that address barriers. The survey is divided into six sections; PA in general, PA in the community, safety, open ended and classification. The questions were influenced by key findings of my literature review. There were a total of 40 questions, with the first two sections, PA in General and PA in the community, consisting of statements that are answered on a likert-type scale. The range includes strongly agree, agree, disagree and strongly disagree, where strongly agree is 4 and strongly disagree is 1. The statements in this section address barriers. Therefore, the higher the score, the greater the perception of barriers to exercise. The questions and statements in the next section address alternative options for PA that might deter park use at James Mulligan. The questions mostly focus on the type of PA users participate in and the time of day. Question 13 was used based on Myron's park use study (2006), which states that most adults observed in the park engaged in sedentary behaviors. Perception of safety is addressed in the next section, focusing mainly on the neighborhood in general. The open-ended questions seek to discover barriers to PA specific to AA women. Question 33: "If James Mulligan Park offered group fitness programs like zumba, yoga, or pilates would you attend?" is based on the Gletsu & Tovin (2010) study. The last section consists of questions that were used for classification purposes.

The survey was administered verbally door-to-door on Friday, Saturday, and Sunday. I chose to conduct my research during different times of the day, evenings and afternoons. I specifically administered surveys after typical church hours on Sunday to increase my opportunity to survey more individuals. I knocked on a total of 267 doors and approached thirty-nine individuals, however seventeen were eligible, based on the requirements of my target audience. Out of the seventeen AA women fifteen consented to the survey, making the response rate 88.24 % (Table 2).

**Table 2 Survey administration and response rate**

date	start time	end time	doors knocked on with no response	doors knocked on with response	consent to survey	eligible
3/7/2014	5:00	6:25	18	11	5	5
3/8/2014	3:25	4:45	11	7	3	3
3/9/2014	3:00	7:15	199	21	7	9
		<b>Total</b>	<b>228</b>	<b>39</b>	<b>15</b>	<b>17</b>
		<b>Response Rate</b>	<b>88.24%</b>			



# **chapter four.**

## **FINDINGS**

# Physical Analysis Results

## Active Neighborhood Checklist

While the Active Neighborhood Checklist is not a detailed tool it does help give an overall view of the neighborhood. The neighborhood plays a role in supporting or discouraging PA and can affect PA at the neighborhood park. The neighborhood boundaries were identified as Hampton Street to the southeast, Braddock Road to the southwest, Beauregard Street to the northwest and King Street to the northeast (fig. 4.1). The predominant land use for the neighborhood immediately surrounding the park is residential. However Beauregard is in a transitional area, as one moves north the street becomes more commercial. King Street's land use was predominantly commercial and has more curb cuts. Consequently Beauregard and King Street are rated as mediocre for supporting PA.

The quality of the environment for pedestrians on Hampton Street, Braddock Road and South Beauregard Street was good (figs 4.2-4.11) . There were adequate sidewalks, which were covered with shade trees in some spots (figs 4.9, 4.15, and 4.17). There were buffers with trees between the sidewalk and street( fig 4.15). Hampton Street and Braddock Road had medians as well as painted crosswalks. Braddock Road and Beauregard Street had bike-friendly lanes, but only Beauregard had the bike symbol painted on the road accompanied by a yield for bicyclists sign (figs 4.19 and 4.20). None of the streets, Hampton Street, Braddock Road, Beauregard Street or King Street, had pedestrian scale lighting, water fountains, or public art.

The following pages present a summary of neighborhood conditions.



**FIGURE 4.1**

Overview of the neighborhood, with bounding streets noted



**FIGURE 4.2**

Author, 2014. Aerial Photo of Neighborhood highlighting Hampton Street . Adapted from Google Maps source image. Retrieved. March 10, 2014.

## Hampton Street

Figure credits (facing page): Author, 2013. except fig. 4.3 Google Maps source image.



**FIGURE 4.3**

**Land use (fig. 4.3)**

- Residential and Non-Residential

**Predominant Land use**

- Residential (Bolling Brook)

**Types of Residential (fig. 4.3)**

- Apartments or condominiums (>4 units, 1-4 stories)

**Parking**

- On-street, including angled
- Medium to large lot

**Public Recreation Facilities**

- James Mulligan Park

**Non-Residential Land use**

- Commercial

**Public Transportation (fig. 4.4)**

- Bus stop with bench or covered shelter on both sides of the street

**Street Characteristics**

- Posted speed limit is 25 miles per hour
- Two lanes with a turning lane
- Crosswalk

**Quality of environment (fig. 4.5)**

- Tree shade on walking area
- Moderate slope

**Places to Walk or Bicycle (fig. 4.5)**

- Sidewalk is present with grass buffer with trees between curb and sidewalk
- Sidewalk is not present on continuously on both sides of the road
- The width is greater than 3 feet for most of the sidewalk



**FIGURE 4.4**



**FIGURE 4.5**





**FIGURE 4.7**

**Land use (fig. 4.7)**

- Residential and Non-Residential

**Predominant Land use (fig. 4.7)**

- Residential (Newport Village)

**Types of Residential (fig 4.8)**

- Apartments or condominiums (>4 units, 1-4 stories)

**Parking (fig. 4.8)**

- Medium to large lot

**Public Recreation Facilities**

- James Mulligan Park

**Non-Residential Land use**

- Commercial

**Public Transportation (fig. 4.9)**

- Bus stop with bench or covered shelter on both sides of the street

**Street Characteristics**

- Posted speed limit is 35 mph
- Two lanes
- Turning lane
- Crosswalk

**Quality of Environment (fig. 4.9)**

- Tree shade on walking area
- Moderate slope

**Places to Walk or Bicycle**

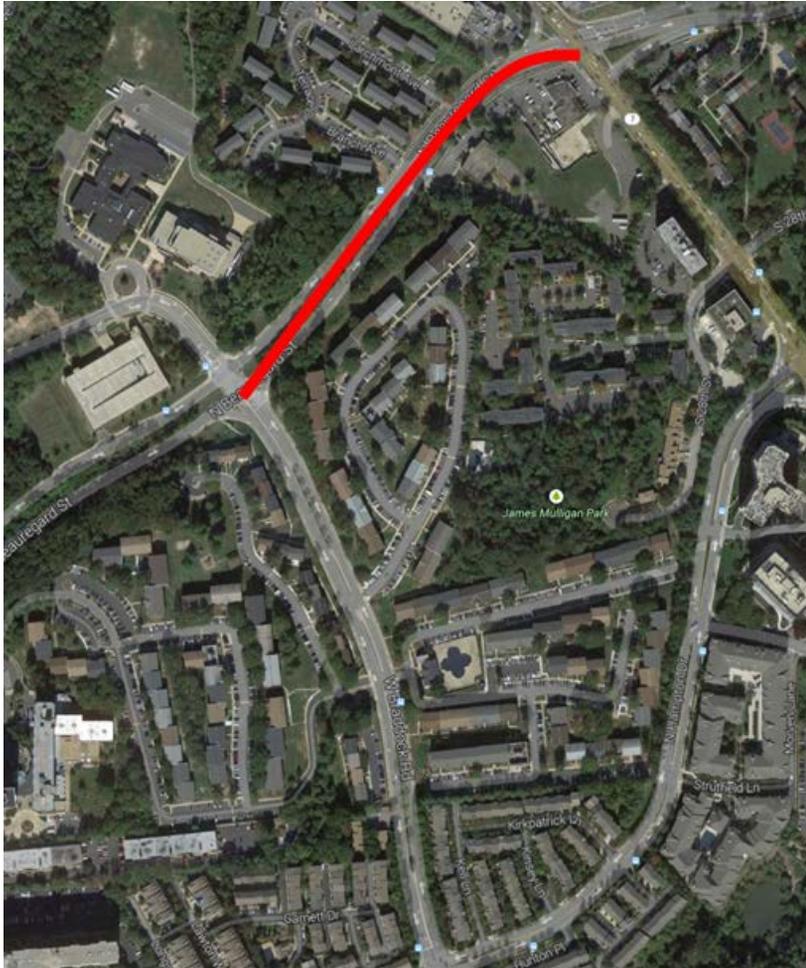
- Sidewalk is present with grass buffer between curb and sidewalk
- Sidewalk is present continuously on both sides of the road
- The width is greater than 3 feet for most of the sidewalk



**FIGURE 4.8**



**FIGURE 4.9**



## Beauregard Street

**FIGURE 4.10**

Author, 2014. Aerial Photo of Neighborhood highlighting Beauregard Street . Adapted from Google Maps source image. Retrieved. March 10, 2014.

Figure credits (facing page): Author, 2013.  
Google Maps source image.(except fig. 4.11)



FIGURE 4.11

### Land use

- Residential and Non-Residential

### Predominant Land use

- Residential (Bolling Brook)

### Types of Residential

- Apartments or condominiums (>4 units, 1-4 stories)

### Parking

- On-street, including angled
- Medium to large lot

### Public Recreation Facilities

- James Mulligan Park

### Non-Residential Land Use (fig. 4.12)

- Commercial

### Public Transportation

- Bus stop with bench or covered shelter on both sides of the street

### Street Characteristics ( fig. 4.13)

- Posted speed limit is 35 mph
- Two lanes
- Turning lane
- Crosswalk

### Quality of Environment

- Tree shade on walking area
- Moderate slope

### Places to Walk or Bicycle (fig. 4.11)

- Sidewalk is present continuously on both sides of road with grass buffer with trees between curb and sidewalk
- The width is greater than 3 feet for most of the sidewalk
- Designated bike route sign or marking or “Share the Road” sign



FIGURE 4.12



FIGURE 4.13





**FIGURE 4.15**

**Land use (fig. 4.15)**

- Residential and Non-Residential

**Predominant Land use (fig. 4.16)**

- Commercial

**Types of Residential (fig. 4.15)**

- Apartments or condominiums (>4 units, 1-4 stories)

**Parking**

- Small lot

**Public Recreation Facilities**

- James Mulligan Park

**Non-Residential Land use**

- Commercial

**Public Transportation**

- Bus stop with bench or covered shelter on both sides of the street

**Street Characteristics**

- Posted speed limit is 35 mph
- Four lanes with median turning lane
- Crosswalk



**FIGURE 4.16**

**Quality of environment (fig. 4.17)**

- Tree shade on walking area
- Moderate slope

**Places to Walk or Bicycle**

- Sidewalk is present with grass buffer with trees between curb and sidewalk
- Sidewalk is not present continuously on both sides of the road
- The width is greater than 3 feet for most of the sidewalk



**FIGURE 4.17**



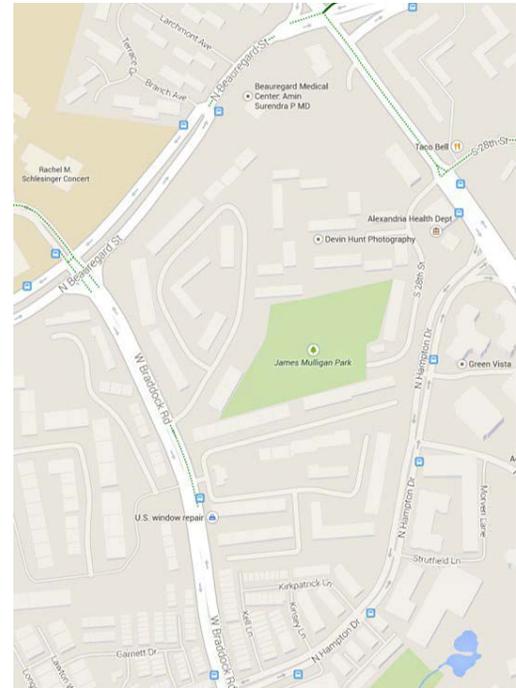
**FIGURE 4.18** Bike lane types in Alexandria

Source

[http://alexandriava.gov/uploadedFiles/localmotion/info/Alexandriacvrside20130107\(1\).pdf](http://alexandriava.gov/uploadedFiles/localmotion/info/Alexandriacvrside20130107(1).pdf)

## Bicyclists

There are three types of bike lanes in Alexandria, travel lane, shared travel lane and bike routes. The travel lanes are designated lanes that are the most comfortable for bicyclists. The shared travel lanes bike- friendly, but less comfortable. Shared bike lanes are present in the neighborhood surrounding James Mulligan Park. The dashed green lines in figure 4.19 show the shared travel lanes along Braddock Road and Beauregard Street.



**FIGURE 4.19** Shared travel lanes

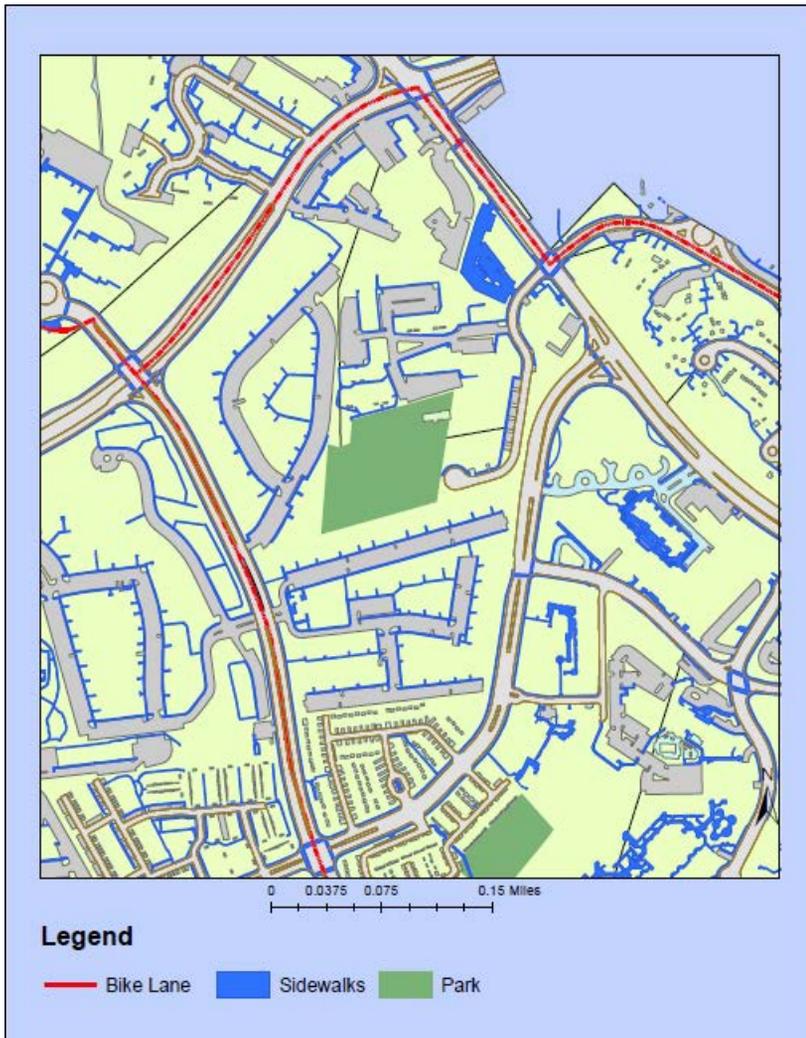
Adapted by Author, 2013.

Google Maps source image.



**FIGURE 4.20**

Image of Beaugard Street facing north. Author, 2014



## Pedestrians

The map at left shows the sidewalks in the neighborhood immediately surrounding James Mulligan. The sidewalks are not continuous in the Hampton Street segment of the neighborhood. This interruption in sidewalk breaks the connectivity for pedestrians.

**FIGURE 4.21**

Sidewalks & Connectivity Map

Author, 2014

# Pedestrian Environment Continuum



comfortable uncomfortable



Hampton Rd



Braddock Rd



South  
Beauregard St



North  
Beauregard St



King St

FIGURE 4.22

## Physical Analysis of James Mulligan Park

The park level physical analysis using PARA is more detailed. The results show the average feature rating was 2.5, amenity 2.5, and incivility was 1 (the scale for incivilities was reversed). The scale works as follows: 0 = Not Present 1 = Poor 2 = Mediocre 3 = Good. A special note of quality was made when documenting the playground equipment. The playground equipment was updated during the October, 2012 renovation. It includes swings, standing spinners, kid force spinners, a see saw, and a modular structure. The park has picnic tables, benches, barbeque pits and trash receptacles. As in the neighborhood, there is not pedestrian scale lightning. The access point on the south side is a barrier to residents. The south entrance has a steep slope that needs to be paved. The only incivility found was litter near the south entrance. The following pages present the park analysis in detail.



FIGURE 4.23



FIGURE 4.24



FIGURE 4.25



FIGURE 4.26



FIGURE 4.27

## Signage and Lighting

Examples of signage in the park can be seen in figures 4.23-4.27. There is adequate signage at the north and south entrances to the park (Figure 3.1). The hours of operation sign at the main entrance could be made clearer. The sign should display the hours it is open, instead of the hours the park is closed. It currently reads “ PARKS CLOSED from 10PM-5AM (Figure 4.24). There is only one lighting fixture that is used for the park and the parking lot.(Figure 4.26).



FIGURE 4.28



FIGURE 4.29



FIGURE 4.30



FIGURE 4.31

## Amenities

The park amenities consists of access points, benches, landscaping efforts, and picnic tables. Not all access points are paved. For example, the south entrance was partially paved. It is obvious by a worn path in the dirt that park users access the park from the south (fig 4.28-4.34).



FIGURE 4.32



FIGURE 4.33



FIGURE 4.34



FIGURE 4.35



FIGURE 4.36



FIGURE 4.37



FIGURE 4.38

## Incivilities

Based on the operational definitions of the PARA tool the park received a 1 or poor rating for incivilities. As you can see in figures 4.35-4.38 a few items (more than five) are on the ground. Litter was the only incivility found.



FIGURE 4.39

## Playground Features

Special note was made of the play equipment because it was not typical equipment. The play equipment at this park received a good rating considering it was renovated in recent years. The playground equipment includes a swing set with four seats, see-saw, kid force Spinner (manufacturer name spinner bowl), standing spinner, modular structure and stepping pods with various climbers, which can be seen in figures 4.39-4.45. The accessible swing allows children with disabilities the opportunity to swing( fig. 4.41).



FIGURE 4.40



FIGURE 4.41

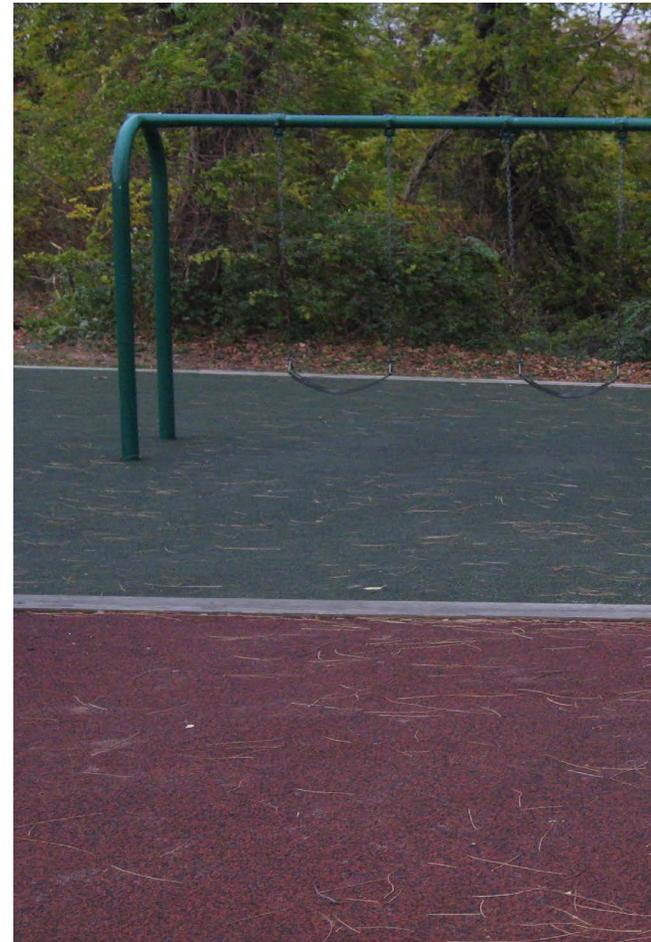


FIGURE 4.42



FIGURE 4.43



FIGURE 4.44

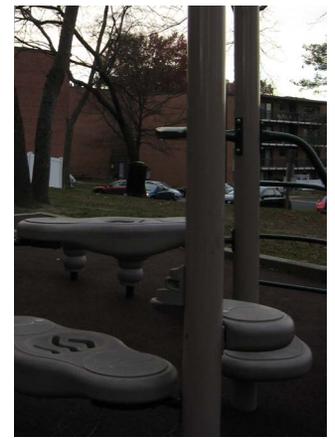


FIGURE 4.45

## Survey

As you can see in the table on the next page, the strongest barriers to exercise were exercising tires me (mean = 2.5, sd = 0.8) and I am fatigued by exercise (mean = 2.4, sd = 0.5). In general, respondents perceived their neighborhoods to be relatively safe (mean = 3.00, sd = .000). However, they were slightly less likely to agree that their neighborhood was well lit at night (mean = 2.9, sd = 0.4). Respondents expressed that the park was not well lit at night. The respondents were also concerned with safety in the park specifically related to landscaping. All respondents that typically exercise alone also had safety as a barrier to exercising in the park. These same respondents typically exercise in the evenings.

**Table 3 Survey Results**

	frequency	minimum	maximum	mean	std. deviation
Participant age	14	23	73	40.50	17.487
Exercising takes too much of my time	15	1	2	1.67	.488
Exercising tires me	15	1	4	2.47	.834
Places for me to exercise are too far away	15	1	3	1.87	.516
I am too embarrassed to exercise	15	1	2	1.47	.516
Exercise facilities do not have convenient schedules for me	15	1	3	1.93	.704
I am fatigued by exercise	15	2	3	2.40	.507
My spouse (significant other) does not encourage exercise	13	1	3	2.00	.577
Exercising takes too much time from family relationships	15	1	3	1.87	.516
My family members do not encourage me to exercise	15	1	2	1.73	.458
Exercising takes too much time from family responsibility	15	1	3	1.80	.561
There are too few places for me to exercise	15	1	3	1.87	.640
My neighborhood adequate sidewalks	14	3	4	3.43	.514
My community is safe from crime	14	3	3	3.00	.000
My neighborhood is well lit at night	14	2	3	2.86	.363

The scale is: 4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree

To make comparisons between age groups, I divided the respondents into two groups (1 = < 35 years, n = 8; 2 = ≥ 35 years, n = 6). Age was missing for one respondent, so they were not included. With the help of committee member Dr. Heinrich, I conducted chi-square analysis to determine if there were any statistically significant differences between the two age groups for any of the exercise barriers or safety issues.

The only significant difference was for “my neighborhood has high quality sidewalks,”  $\chi^2 = 7.02, p = .026$ . As you can see in the table below (Table 4), older respondents were more likely to strongly agree with this statement than younger respondents (83.3% versus 12.5%, respectively). The difference in perception may be due to the fact that older respondents use sidewalks in the neighborhood for PA, whereas the younger respondents reported using public recreation centers and gyms. Possibly, older respondents are more likely to judge sidewalks as high quality because they apparently find the sidewalks to be serviceable for walking.

**Table 4 Response to Adequate Sidewalks**

My neighborhood has adequate sidewalks	Count		Percent within age group	
	< 35	≥35	< 35	≥35
age divided into two categories				
agree	7	1	87.5%	12.5%
strongly agree	1	5	16.7%	83.3%
total	8	6		

With regard to survey response to “I am fatigued by exercising”, respondents who reported completing physical activity in the morning were less likely to report being fatigued by exercise,  $\chi^2 = 9.1$ ,  $p = .011$ .

**Table 5 Response to “I am fatigued by exercise”**

I am fatigued by exercise	Typical time of day for PA			Total
	AM	PM	Both AM and PM	
disagree	5	0	3	8
agree	0	4	2	6

The pie charts below summarize the responses to the following questions:

What are the top three reasons you do exercise in the park?

What are the top three reasons you don't exercise in the park?

The majority of respondents use a park to enjoy nature. Only three respondents said they would go to a park to exercise. These findings are consistent with Myron's study which found children more active in parks than adults. He also found adults to be in low energy expenditure zones, like picnic shelters, in the park (2009).

I found several respondents would avoid exercise in the park due to poor safety. Lighting and landscaping were two issues reported that influence perception of safety.

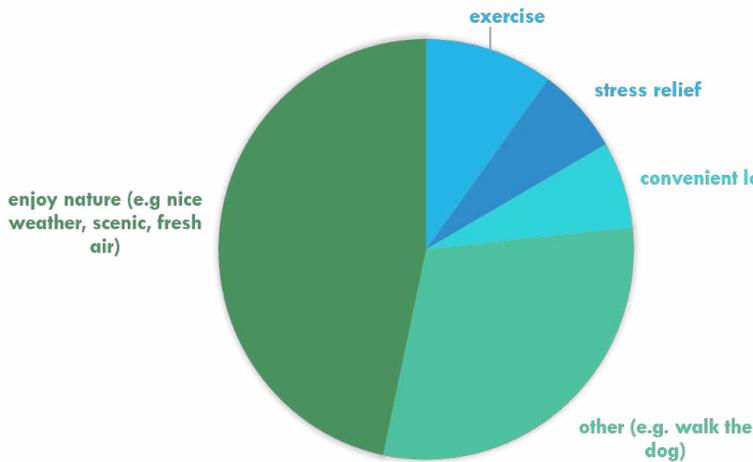


FIGURE 4.46 Reasons to Exercise in the Park

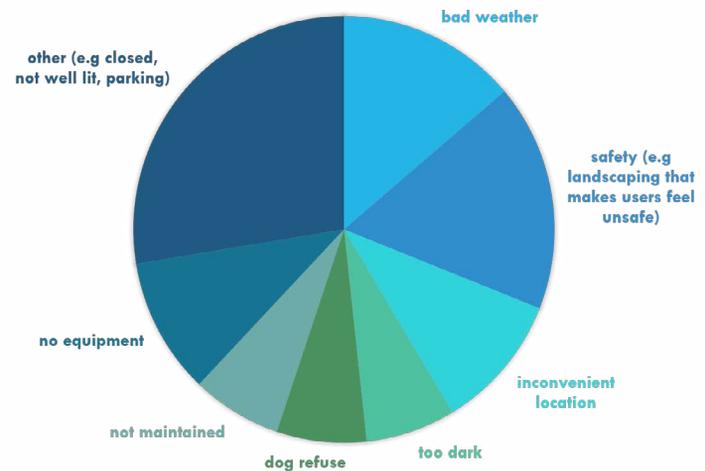


FIGURE 4.47 Reasons Not to Exercise in the Park

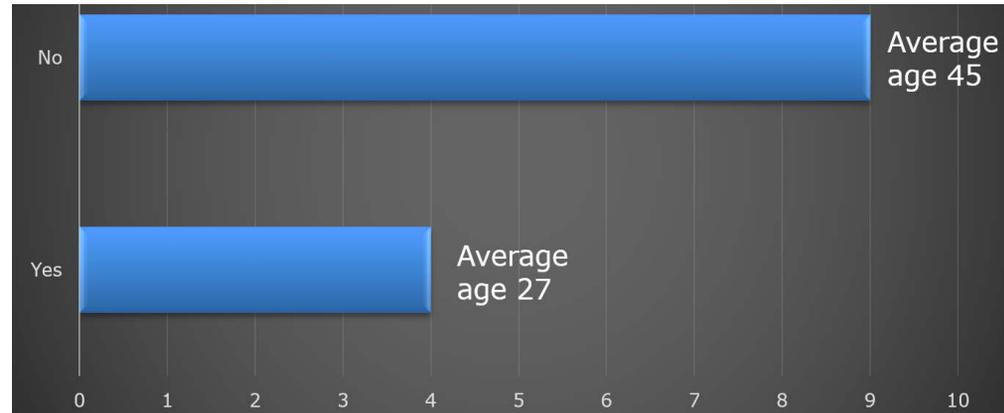
As you can see in the table below (Table 6), respondents who reported using a public recreation center for exercise were more likely to agree that “there are too few places for me to exercise,”  $\chi^2 = 10.31, p = .006$ . The difference in perception may be due to the fact that respondents who use public recreation centers do not see the park as a place to participate in PA. Respondents who reported using public recreation centers consider an indoor facility with equipment appropriate for exercise. Since the majority of respondents mentioned going to a park to enjoy being it is clear participation in PA is not a priority in parks (fig 4.46 and 4.47).

**Table 6 Response to “Too few places to exercise”**

There are too few places to exercise	Did the participant use a public recreation center?		Total
	no	yes	
strongly disagree	3	1	4
disagree	9	0	9
agree	0	2	2

The study by Hall et al. found nearly 40% of AA women avoid exercise at times owing to hair-related issues (Hall et al., 2013). Based on their study I would have expected more respondents to say they did avoid exercise to protect their hair. Younger respondents were more likely to cite hairstyles as a reason to avoid exercise.

**Table 7 Response to “Avoiding exercise to protect hair”**



The height and weight for each participant was used to calculate the BMI, which is displayed in the table below (Table 8). The BMI was calculated using the standard BMI calculator from the U.S. Department of Health & Human Services. Once the BMI was calculated it was then used to organize the respondents in four categories: underweight, normal weight, overweight, and obese. The majority of respondents were overweight or obese which is consistent with literature. The CDC says four out of five black women have a body mass index above 25.

**Table 8 BMI of Respondents**

<b>BMI Categories</b>	<b>Number of Persons</b>
Underweight = <18.5	0
Normal weight = 18.5-24.9	1
Overweight = 25-29.9	6
Obesity = BMI $\leq$ 30	5
Missing	2

Table is missing responses from 2 respondents

Table 9 Educational Attainment

Level of Education	Frequency
HS diploma/GED	1
Some college	3
Bachelor's degree	6
Master's degree	4
Missing	1

Table 10 Martial Status

Status	Frequency
Single	7
Significant other	3
Married	3
Divorced	1
Missing	1

Table 11 Typical Physical Activity

Type of physical activity	Frequency
cardio	3
walking	5
running	2
basketball	2
other	3

As seen in table 11 the most common PA was walking. The majority of walkers were active in the morning.

Table 12 Time of Exercise

Time of Day	Frequency
AM	5
PM	4
Both AM and PM	5
Missing	1

Table 13 Respondents with Gym Memberships

Gym Membership	Frequency
no	6
yes	9

Table 14 Respondents' Use of Public Recreation Center

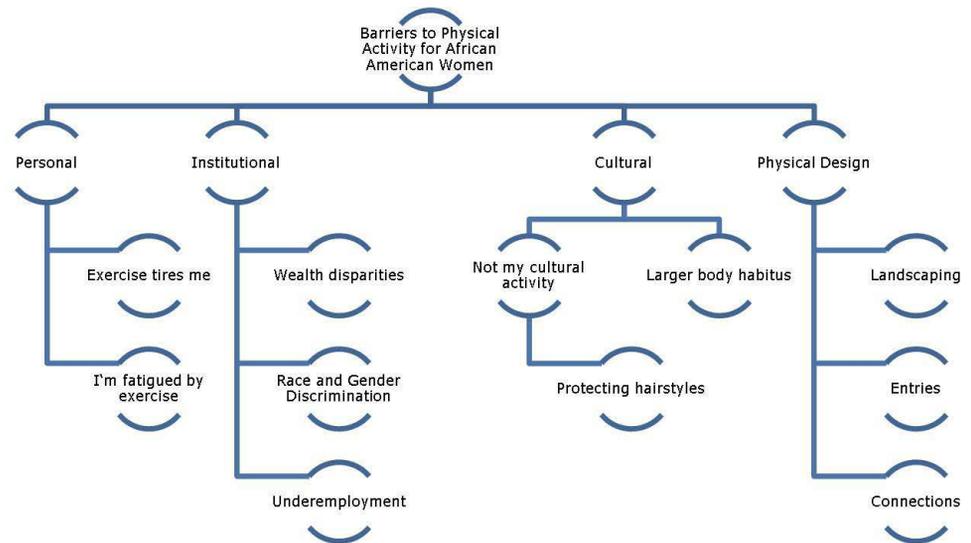
Use public recreation center	Frequency
no	12
yes	3

# **chapter five.**

## **CONCLUSION, RECOMMENDATIONS & DISCUSSION**

## Conclusion

All of the barriers to PA for AA women in this neighborhood are organized in the diagram below. Without environmental justice and social support the efforts of barrier removal won't be effective. AA women face obstacles due to inequality in the US. As it was said by one survey respondent, PA is not a priority because AA women are “struggling to survive”(fig 5.1). Ching-hua et al. have argued that it is reasonable to expect that racial discrimination is prevalent in leisure places and affects leisure decision making and participation(Ching-hua et al., 2005, p. 284).Until AA women can overcome institutional barriers PA will always be perceived as a leisure activity.



**FIGURE 5.1** Summary of barriers to PA found in survey results

Currently, there are physical activity guidelines; however guidelines alone are not enough. Nor is the presence of a park in the neighborhood enough. In the *Design of Everyday Things*, Norman says, “the presence of an affordance is jointly determined by the qualities of the object and the abilities of the agent that is interacting”(Norman, 2010, p. 11).

He goes on to say, “whether an affordance exists depends upon the properties of both the object and the agent.” (Norman, 2010) In this study the object is the park and the agent is the AA women surveyed. There are no trails or equipment to be used by adults in the park, therefore this park does not afford a place to be physically active. In fact the majority of the respondents to my survey did not even know the park existed. Therefore, what appears good in principle sometimes fails because of the complexity of the world.

There are different expectations for AA woman and they can be controlled by their perceptions of themselves. These expectations were addressed earlier in the background section. Historically AA woman have demonstrated flexibility in roles, effective ways of pooling resources, and building community while coping with poverty and growing unemployment rates”(Coontz, 1992 p. 242). An older woman I surveyed listed some differences AA woman face, such as “having to raise their husbands” and “not having a nanny”.

According to Ching-hua et al., “African Americans preferred more developed settings/ facilities and scenery with more open space and built structure than others”(Ching-hua et al., 2005, p. 285). During the survey many women expressed that “too many bushes make a park scary”. However, not enough landscaping, either trees or bushes does not provide enough privacy. I suggest the park find a balance between enough landscaping, but not too much.

By eliminating the barriers to PA, AA women will have the opportunity to participate in PA in this neighborhood park. The ultimate goal is to have healthy citizens who make contributions to society. Getting AA women to participate in PA benefits not only their group, but also the communities they live in. Active citizens enrich the quality of life and help create vibrant and livable places to live.

In addition to eliminating the barriers to PA that AA women face, it is just as important to recognize the opportunities a park can offer. What a park affords AA women is different than traditional park users. Some adults engage in sedentary behavior because they use the picnic tables and benches to sit and relax while their children play. But what if the bench could be used for something else?

When asked about changes to the park that would make her use it for PA, one woman mentioned, “incorporating instructions about moving your body and warming up.” James Mulligan Park offers benches, swings and grass that can be used for PA. The benches and swings in the park present an opportunity for PA for adults. Swings can be used for crunches and benches for tricep dips. James Mulligan Park could post signs that explain these exercises with images. According to Reed and Henert short bouts of moderate aerobic exercise improve affect in sedentary AA females (Reed & Henert, 2009). Shorter bouts of exercise are also likely to result in better exercise adherence (Reed & Henert, 2009). Issues like environmental justice are out of the control of planners; however planners can act as advocates for underrepresented groups, so that their voices can be heard. Involving minorities in public meetings is valuable because receiving their input helps planners serve the public interest. Incorporating underrepresented groups in the planning process gives these groups a chance to share their needs and ultimately designers can match these needs to the spaces they design.

## Recommendations

### Park

The following changes could be made at the park level to improve visitation and the experience at the park.

#### *Add new programs*

All of the women surveyed said they would attend group classes like yoga, pilates or zumba. Classes are a good option for those who need structure and instructions to get the most out of their workout. The classes could also be a form of advertisement because residents could promote the classes through word-of-mouth. I think AA women would feel more comfortable exercising if there were more women of color out there exercising. For example, groups like black girls RUN! have started to promote AA women can be physically active. Offering classes in James Mulligan Park could create a sense of place, build community, and make a place where people who don't normally exercise can exercise. Group classes also provide an opportunity for social interaction give these women a reason to come to the park. Start a black girls RUN! event here; even if people are participating its social and they will see AA women are physically active, which rejects the barrier that “PA is not my cultural activity”.

### *Increase advertisement and awareness*

The majority of respondents did not know where the park was. Increasing awareness lets the residents know what the park is doing. Events like the ones mentioned above could be marketing online or with flyers. In turn this creates an opportunity for the residents to participate in PA.

### **Neighborhood**

The following changes could be made at the neighborhood level to improve visibility for other residents to experience the park. These improvements can also make residents aware of potential PA opportunities outside of the park.

#### *Create a gate to connect Newport Village residents to the park*

Due to a fence between the Newport Village property and James Mulligan Park, some respondents did not know about the park. The fence is a physical barrier to accessing the park. Figure 5.2 shows a picture of the fence between the properties. Creating a gate would give Newport Village residents convenient access to the park.



**FIGURE 5.2**

### *Design signage that leads to the park*

An alternative to adding the gate would be designing signage that leads to the park. The signage can increase awareness of the park and make it more visible. Places a sign at King Street would catch the attention of more people because there is more traffic on this street. Signs then could be posted along 28th Street to draw people into the park. Being strategic about the placement of signs could increase park awareness and potentially visitation.

### *Add mile markers along the sidewalk*

Mile markers along the sidewalk in the neighborhood surrounding James Mulligan park provide an opportunity for PA as well. Mile markers would be used as signifiers that show the sidewalk is a place for PA. They could also be a motivators and reminder for women to keep track of how far they walk or run. Figure 5.3 shows the distance of each segment of sidewalk in the neighborhood. At a brisk pace walking around the neighborhood would take approximately 30 minutes and would fulfill the daily PA guidelines set by the CDC.



**FIGURE 5.3**

## Discussion

Poor park maintenance and poor lighting were found to be design factors that discourage participation in physical activity. This is consistent with literature that suggests just that these factors influence all women regardless of ethnicity. Many women surveyed suggested improvements in the park specific to children. They also noted that children are most active in the neighborhood, consistent with Floyd et al. (2009) findings.

“Exercising tires me” was the most common barrier followed by the similar “I am fatigued by exercise”. These are personal barriers that aren’t specific to AA women. However “exercising is not my cultural activity,” avoiding PA to protect hairstyles, and a desire for a larger body habitus are cultural barriers to PA specific to AA women in the neighborhood surrounding James Mulligan Park.

The perception that AA women do not exercise is a fallacy that is reinforced in the media. Television shows and songs do not associate AA women with thin bodies. Children have no preconception of PA, the negativity is learned from parents, peers, and mainstream media. Along with the media, the AA community buys into this and spreads this myth further. That is why it crucial for AA mothers to be active because they are role models for their children. The perception that “exercise is for white women” is a common fallacy that was expressed in the surveys. When asked if she runs or bikes on trails in the community one woman said, “Do I look like I’m white to you?” Her reaction is similar to the other respondents. Some women in this community feel PA is not their cultural activity so they don’t participate.

One woman, in particular, said there are fewer AA women joining her gym than any other group. Furthermore, when they are exercising they don’t want to “lose their thighs and butt.” This anecdote supports the Johnson-Askew et al. (2011) literature that states AA women have a preference for a larger body habitus. Joseph Neil a full-time trainer and certified nutritionist, in the Washington D.C. area says, Among his clients, white women “are self-conscious about the numbers. They say I want to weigh 110, 115, 120.” AA women, who always say they want to keep their curves, “give me sizes — 6, 8, 10, 12.” (Parker, 2012). “Black women have fashioned their own definitions of beauty” without the help of mainstream culture (Parker, 2012).

The fact that older woman were less likely to avoid PA to protect their hairstyles can be a sign of a changing trend in the importance of hair. One explanation may be that older woman are not as concerned with protecting their hair, because they know how to manage their hair or because they are retired and do not need to keep work appropriate hairstyles any longer. In addition, styles have changed with fashion and self-awareness has changed. Another factor is personal responsibilities and dating needs have changed. AA women spend billions of dollars in the hair industry each year (“The Changing Business of Black Hair, a Potentially \$500b Industry,” 2014). The amount of money spent in this industry shows hair is an important aspect of AA female culture. The importance some AA woman put on hair limits the amount of PA they can participate in. According to an article published in 2012, “28 percent of black women say that being physically attractive is ‘very important,’ compared with 11 percent of white women. White women were more likely than black women to say being attractive was “somewhat important.” This fact can explain why PA is not a priority. As more research is done AA woman can learn of protective hairstyles that accommodate their hair needs while allowing them to participate in PA.

## Limitations

This research is just the starting point for understanding barriers to park use by AA women. One must realize the limitations of my study. My participation rate shows that only 88% of people eligible completed the survey. Three reasons people did not complete my survey were not being eligible, not being interested and not being available. Seventeen people were eligible, yet 15 consented to the survey. This study is not generalizable due to the number of respondents. The findings can only be used to describe behaviors specific to AA women in the neighborhood surrounding James Mulligan Park. Their opinions about this park cannot be transfer to other parks.

The method of administering the survey may have been a limitation. Making a call through an intercom system for each resident slowed down the survey process and lowered the participation rate. I believe research conducted in a neutral space would yield a higher participation rate. Respondents could not see who I was and they were not able to build enough trust to let me in to complete the survey.

Conducting research in public places such as a community centers, would allow the researcher to see who is eligible for the study and respondents would be more comfortable if they are not approached at their residence.

## Directions for Future Research

Researching human perception is difficult door-to-door using a survey. Some of the difficulties of using a survey in this research included: potential subjects were unwilling answer their doors to a stranger, subjects had limited time to complete the survey, and short answer questions limited elaboration on topics. Future research could use an interview or focus group approach. In addition, I suggest approaching subjects through a public setting ( such as a community center) rather than knocking on doors of private homes. The benefits include: knowing your subjects fit your target audience.

Other directions for future research could include:

- Exploring perception of AA women as it relates to PA being for children as opposed to adults.
- Explore the PA barriers for other minorities because as the US population grows it will become more diverse.
- A comparison between property values and park use could determine if residents avoid parks in lower income areas.
- As the natural hair movement has grown in popularity and acceptance, research on the effect of the natural hair movement on PA in AA women would advance the study of AA women avoiding exercise to protect hairstyles.



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# **appendix a.**

## GLOSSARY

**Access:** ability to interact with nature by walking or biking in close proximity to one's residence

**Active living:** a strategy of urban planning and design to promote physical activity- to combat growing obesity (Day, 2006)

**Affordance:** is the relationship between the properties of an object, or environment, and the capabilities of the agent that determine just how the object could possibly be used (Norman, 2013)

**Body image:** one's perception of body size and the emotional attitude toward that perception and is influenced by many factors especially cultural standards.

**Body mass index:** a weight-to-height ratio, calculated by dividing one's weight in kilograms by the square of one's height in meters and used as an indicator of obesity and underweight

**Institutional barriers:** is an intentionally established rule or practice that repeatedly and regularly puts a specific group of people or entities with a common feature or trait at a disadvantage versus others

**Environmental justice:** social movement in the United States whose focus is on the fair distribution of environmental benefits and burdens (Taylor, Floyd, Whitt-Glover, & Brooks, 2007)

**Leisure time exercise:** this is any exercise that is done on top of exercise that normally takes place in a person's daily life. Some examples are golf gardening, walking and biking (Harvard Health Publications)

**Neighborhood park:** serves as a social and recreational focal points for neighborhoods and are the basic units of a park system (this may include a playground)

**Physical activity (PA):** according to the World Health Organization it is any bodily movement produced by skeletal muscles that requires energy expenditure. The Surgeon General recommends a target of 30 minutes of moderate to vigorous physical activity most days of the week (Office of the Surgeon General, 2005)

**Walking distance:** the quarter-mile (0.4 km) has become a standard threshold distance used in park

**Self-efficacy:** the confidence one can successfully execute a behavior required to produce a specific outcome

# **appendix b.**

## RESEARCH TOOLS

**Link to PARA assessment form**

[http://grants.hhp.coe.uh.edu/undo/wp-content/uploads/2009/10/PARA-instrument.](http://grants.hhp.coe.uh.edu/undo/wp-content/uploads/2009/10/PARA-instrument.pdf)

pdf

**Link to PARA protocol and defintions**

[http://grants.hhp.coe.uh.edu/undo/wp-content/uploads/2009/10/PARA-Protocol.](http://grants.hhp.coe.uh.edu/undo/wp-content/uploads/2009/10/PARA-Protocol.pdf)

pdf

**Link to operational definition with pictures**

[http://grants.hhp.coe.uh.edu/undo/wp-content/uploads/2009/10/PARA-operational-](http://grants.hhp.coe.uh.edu/undo/wp-content/uploads/2009/10/PARA-operational-definitions-with-pictures.pdf)

definitions-with-pictures.pdf

**Link to Active Neighborhood Checklist**

[http://activelivingresearch.org/sites/default/files/Protocol\\_ActiveNeighborhood-](http://activelivingresearch.org/sites/default/files/Protocol_ActiveNeighborhood-Checklist.v2.pdf)

Checklist.v2.pdf

# **appendix c.**

## LITERATURE MAP

# Literature Map

Resources			Subjects							
Title	Author	Format	Affordance	Benefits of Park	Perception	Access	Barriers	EJ*	Health	PA**
Active Living and Social Justice	Kristen Day	journal article								
Affordances and the Perception of Landscape: An Inquiry into Environmental Perception and Aesthetics	Harry Heft	journal article	█							
Affordances of children's Environments: A Functional Approach to Environmental Description	Harry Heft	journal article	█							
African American women and physical activity	Gletsu et al.	journal review article					█		█	█
Attitudes of African American Advocates toward Childhood Obesity	Johnson-Askew et al.	journal article			█				█	█
Built environment, physical activity, and obesity: What have we learned from reviewing the literature?	Ding and Gebel	journal review article				█	█			
Design of Everyday Things	Norman	book	█							
City structure, obesity, and environmental justice: An integrated analysis of physical and social barriers to walkable streets and park access	Cutts et al.	journal article		█			█	█		
Effect of exposure to natural environment on health inequalities: an observational population study	Mitchell and Popham	journal article						█		█
Environmental Justice: A Framework for Collaboration Between the Public Health and Parks and Recreation Fields to Study Disparities in Physical Activity	Wendell C. Taylor, Myron F. Floyd, Melicia	journal article	█		█				█	█
Gender and Ethnic Variations in Urban Park Preferences, Visitation, and Perceived Benefits	Ching-hua, Sasidharan, Elmendorf, Willits,	journal article			█		█		█	█
Girls' Perception of Neighborhood Factors on Physical Activity, Sedentary B	Evenson, Scott, Cohen, & Voorhees	journal article				█		█	█	█
Inequality in the Built Environment Underlies Key Health Disparities in Physical Activity and Obesity	Gordon-Larsen et al.	journal article	█							
Making Room for Affordances	Leitche and Lissack	journal article					█			
Measurement of Park and Recreation Environments That Support Physical Activity in Low-Income Communities of Color: Highlights of Challenges and Recommendations	Flyod, Taylor, and Whitt-Glover	journal article		█	█		█	█	█	█
Perceived Barriers To And Benefits Of Physical Activity Among Black and White Women	Hall	journal article			█				█	█
Perceptions of Neighborhood Park Quality: Associations with Physical Activity and Body Mass Index	Hua Bai	journal article						█		█
Structural Inequalities in Outdoor Recreation Participation: A Multiple Hierarchy Stratification Perspective	Jin Hyung and David Scott	journal article						█		
The Social Equity of Urban Service Distribution: An Exploration of Park Access in Pueblo, Colorado, and Macon, Georgia	Talen	research paper						█		
* Environmental justice										
** Physical Activity										

# **appendix d.**

## **SURVEY INSTRUMENT**

# Survey of PA in AA women

## Physical Activity in General

DIRECTIONS: Below are statements that relate to ideas about exercise. Please indicate the degree to which you agree or disagree with the statements by circling SA for strongly agree, A for agree, D for disagree, or SD for strongly disagree.

1. Exercising takes too much of my time. SA      A      D      SD
2. Exercising tires me.
3. Places for me to exercise are too far away.
4. I am too embarrassed to exercise.
5. Exercise facilities do not have convenient schedules for me.
6. I am fatigued by exercise.
7. My spouse (significant other) does not encourage exercise.
8. Exercising take too much time from family relationships.
9. My family members do not encourage me to exercise.
10. Exercising take too much time from family responsibilities.
11. There are too few places for me to exercise.

## Physical Activity in the community

12. Have you visited James Mulligan Park in the last 6 months?      Yes                      No
13. Did you use it for physical activity? (Myron park use study)

Light (walking sitting standing)

Moderate (very brisk walk biking tennis)

Vigorous (walking/hiking, jogging, fast biking)

14. In what types of physical activity do you participate most often?

15. What time of the day do you usually exercise? (AM or PM)

16. Typically when you exercise are you alone or with someone else?

17. I run or bike on trails in the community.      SA                      A                      D                      SD

18. I use public recreation centers in my community.

19. I use public recreation centers for physical activity.

20. I use private membership only facilities in your community.

21. I use private membership facilities for physical activity.

22. In general people in this neighborhood are “physically” active.

**Safety**

23. My neighborhood has adequate sidewalks.      SA                      A                      D                      SD

24. My community is safe from crime.

25. My neighborhood is well lit at night.

**Suggestions for improvements**

26. More family activities in the park increase would increase my use of the park. Yes No

27. If James Mulligan Park offered group fitness programs like zumba, yoga, or pilates would you attend?

28. What improvements if any would you like to see at the park or in the neighborhood?

29. What changes need to be made so that you will use the park more for physical activity? Physical design and programmatic

### **In-Depth**

30. Are you exercising to lose weight?

31. What are the top three reasons you do exercise in the park?

32. What are the top three reasons you don't exercise in the park?

33. Do you avoid exercise at times due to hair related issues?

### **Classification Purposes**

34. What is your marital status?

35. How many children do you have living in your house?

36. How old are your children?

37. What is your age?

38. How tall are you?

39. How much do you weigh?

40. What is your highest level of education?

