

UNIVERSITY OF OKLAHOMA  
GRADUATE COLLEGE

UTILIZING A SOCIAL DETERMINANTS OF HEALTH FRAMEWORK TO ELICIT  
AFRICAN AMERICAN'S PERCEIVED CONTROL BELIEFS  
ABOUT PHYSICAL ACTIVITY

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RHONDA BERNARD  
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UTILIZING A SOCIAL DETERMINANTS OF HEALTH FRAMEWORK TO ELICIT  
AFRICAN AMERICAN'S PERCEIVED CONTROL BELIEFS ABOUT PHYSICAL  
ACTIVITY

A THESIS APPROVED FOR THE  
DEPARTMENT OF HEALTH AND EXERCISE SCIENCE

BY

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Dr. Sarah Maness, Chair

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Dr. Marshall Cheney

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Dr. Amanda Wilkerson

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## **Abstract**

African Americans' Perceived Behavior Control (PBC) beliefs about physical activity were evaluated utilizing the Healthy People 2020 (HP2020) Social Determinants of Health (SDoH) framework. Thirty one-on-one semi-structured interviews were conducted with African Americans aged 30-50 in Oklahoma. Interviews were audio recorded, transcribed, coded, and analyzed for themes. Qualifying themes met or exceeded a threshold of 25%. Among the sample, 40% (n=12) had completed some college, 26% (n=8) had a bachelor's degree, and 6% (n=2) had a master's degree. Additionally, 86% (n=26), reported having a primary care physician, 57% (n=17) described themselves as healthy, and 53% (n=16), reported having a health condition that affects physically active. The sample was homogenous regarding socioeconomic status (SES), where 80% (n=24) were employed and 93% (n=8) did not receive government assistance. Both internal and external factors were found to impact physical activity behavior. Economic Stability themes represented beliefs that SES facilitates physical activity, yet, employment duties impede physical activity. SES barriers to physical activity did not emerge within this sample. Neighborhood and Built Environment themes represented beliefs that accessibility facilitates physical activity, while inclement weather impedes physical activity. Motivation emerged as a theme and represented beliefs about how motivation impacts behavior in the absence barriers. Results from this study suggest that motivation potentially impacts behavior to a greater degree in the absence of barriers. Findings from this research suggest that physical activity interventions targeting African Americans of similar SES should focus on both internal and external factors influencing behavior.



# Chapter 1: Introduction

## Introduction

Cardiovascular disease (CVD) is the leading cause of death in the United States, killing nearly 801,000 people annually (Benjamin et al., 2017). One stroke occurs every 40 seconds; and one heart attack occurs every 43 seconds (American Heart Association [AHA], 2016). Each year, nearly 500,000 Americans are newly diagnosed with congestive heart failure (Yang et al., 2014). In 2015 CVD mortality rates increased by .09%--the first rise since 1999 (CDC, 2016). CVD can affect anyone, but health disparities exist both by geographic location and race/ethnicity (Kaiser & Baumann, 2010).

Oklahoma is ranked second in the nation for having the highest heart disease mortality rate (CDC, 2017). According to the Oklahoma State Department of Health, approximately 58.2% of premature deaths among Blacks in Oklahoma were from CVD, compared to that of 38.4% in non-Hispanic Whites (Oklahoma State Department of Health, 2016). Vulnerable populations are diagnosed at higher rates than the invulnerable (Kaiser & Baumann, 2010). Infants, elderly, and minorities are often considered to be vulnerable populations (Shi & Stevens, 2010). The state of vulnerability refers to a populations' degree of susceptibility to harm or neglect by acts of the community. The degree of susceptibility varies by factors such as: socioeconomic status (SES), social capital, and genetics (i.e., age, sex, ethnicity). Higher risks for poorer health based on demographic variables create health inequities (Shi & Stevens, 2010). These inequities threaten the constitutional foundation of the nation: [social]

justice for all. In order to decrease the incidence of health disparities, the poor health of disadvantaged populations must be effectively addressed (Wilkensky, 2016).

The Surgeon General suggests that CVD can be prevented by modifying physical activity behavior; adequate aerobic physical activity can reduce the risk of CVD diagnosis and mortality (CDC, 2016). The United States Department of Health and Human Services' (USDHHS) 2008 Physical Activity Guidelines for Americans advise that adults should get two hours and 30 minutes of moderate-intensity physical activity (i.e. brisk walking or bicycling) per week or one hour and 15 minutes of vigorous-intensity aerobic physical activity (i.e. jogging or swimming laps) per week. In addition to aerobic activity, adults should engage in muscle strengthening activities for two or more days per week (USDHHS, 2008). Physical activity benefits the heart with cardio-protective effects such as reduced inflammation in vessels and reduced blood pressure (Mora, Cook, Buring, Ridker, & Lee, 2007). Approximately 22.9% of US adults meet the recommendation outlined in the 2008 Physical Activity Guidelines for Americans (Blackwell & Clark, 2018). African American adults report the lowest levels of physical activity among all ethnic groups (Cogbill, Sanders, & Deshpande, 2011; ODPHP, 2017). These findings corroborate the history of higher rates of CVD disease morbidity and mortality among minority populations (Wilkensky, 2016). Physical activity and heart disease risk are inversely correlated (Leon et al., 2005).

Previous research suggests that CVD disparities within the African American community can be addressed by developing a better understanding of how the environment influences physical activity behaviors (Harley et. al, 2014; Schroeder, 2016). Social Determinants of Health (SDoH) refers to the relationship between social

or environmental factors and health (USDHHS, 2008; Maness & Branscum, 2017). That is, the relationship between employment and health; neighborhood and health; or economic stability and health. Health status typically follows a gradient. Desirable health is associated with high educational attainment, high access to healthcare, and a high annual household income (Wilensky, 2016). Conversely, populations that encounter low educational attainment, low access to healthcare, and poverty exhibit poorer health (Wilensky, 2016). An improved understanding of how SDoH influence health is pertinent to achieve the goal of eradicating health disparities (Williams, Costa, Odunlami, & Mohammed, 2008).

### **Healthy People 2020 SDoH framework**

SDoH frameworks can support theory-based research to address health disparities (Maness & Branscum, 2017). Multiple SDoH frameworks exist. This study will use the Healthy People 2020 (HP2020) SDoH framework due to its focus solely on societal level interactions that influence health. HP2020 is the federal health agenda for the nation and is updated every ten years. (ODPHP, 2017) The agenda identifies priority Topic Areas and sets goals for the nation to be achieved within the decade. The first Healthy People agenda was published in 1980 with no mention of SDoH (Glanz, Rimer, & Viswanath, 2008). However, an increased awareness of the correlation between key SDoH components and health outcomes has led to new approaches in research (Glanz et al., 2008). Commissioners from the World Health Organization (WHO) have advised that an increased focus on improving social determinants that influence health could potentially decrease rates of premature death, health disparities, and the amount of

federal spending on healthcare. The inclusion of SDoH in the HP2020 agenda suggests that SDoH significantly influence health status in the United States.

HP2020's SDoH framework suggests that the following are the most relevant influencers of health status: (1) economic stability, (2) education, (3) social and community context, (4) health and health care, and (5) neighborhood and built environment (ODPHP, 2017). Each of these components consist of a unique set of causal factors that are believed to shape the individual's perceptions (or experiences) of the specific determinant. That is, the framework posits that economic stability is influenced by employment, food insecurity, housing instability, and poverty. Education is influenced by early childhood education and development, enrollment in higher education, high school graduation, and language and literacy. Social and community context is influenced by civic participation, discrimination, incarceration, and social cohesion. Health and healthcare perceptions are influenced by access to health care, access to primary care, and health literacy. Finally, neighborhood and built environment perceptions are influenced by access to foods that support healthy eating patterns, crimes and violence, environmental conditions, and quality of housing (ODPHP, 2017).



*Figure 1 Healthy People 2020 Social Determinants of Health Framework (ODPHP, 2017).*

## **Theory of Planned Behavior**

The theory of planned behavior (TPB) is a health behavior theory that links behavior intentions to behavior performance. (Icek & Fishbein, 1980; Ajzen, 1991) (Figure 2). That is, the TPB posits that behavior can be predicted by measuring an individual's *intention* to perform the behavior. The TPB uses three proximal constructs to measure intentions, namely, (1) attitude towards the behavior, (2) subjective norm, and (3) perceived behavioral control (PBC; Ajzen, 1991). For the purpose of this commentary, the primary focus will be on one of the three constructs—PBC. Each of the three proximal constructs are influenced by two underlying distal constructs. The two distal constructs of PBC are: control beliefs and perceived power beliefs. Control beliefs are an individual's beliefs about the presence of internal and external factors that have the ability to influence behaviors (Ajzen, 1991). Beliefs about the degree to which said factors facilitate or impede behavior refers to perceived power beliefs (Glanz et al., 2008). That is, perceived power is one's perception of the degree of ease or difficulty of performing the behavior in the presence of certain factors.

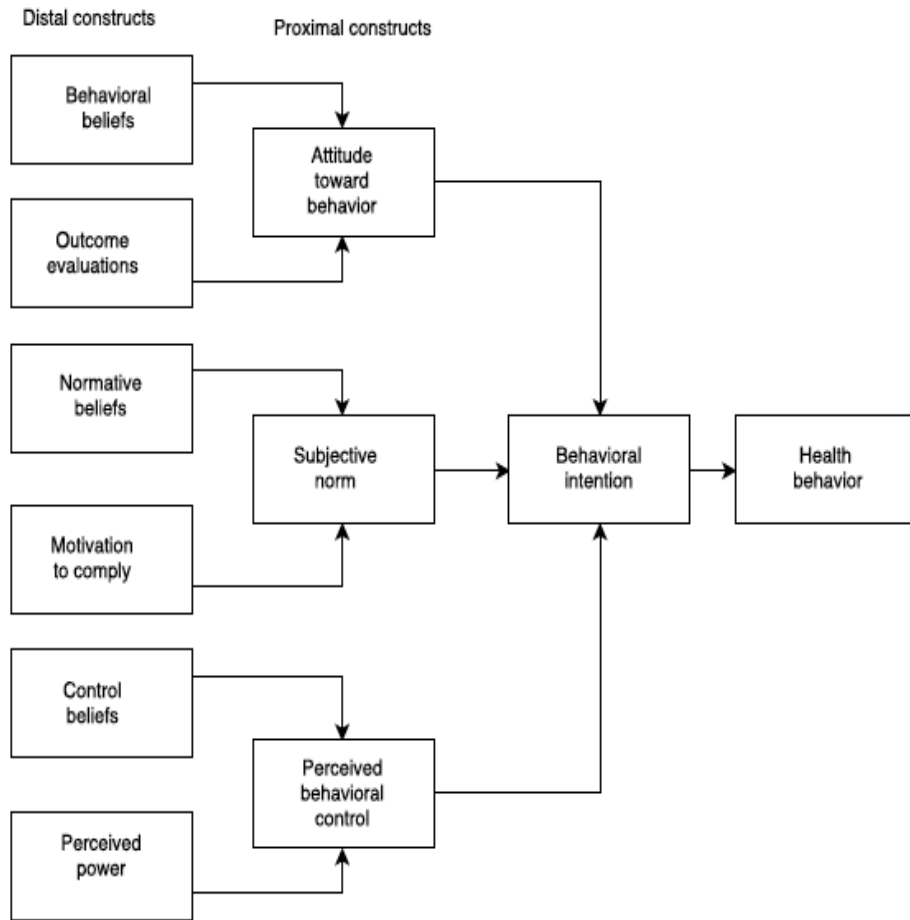


Figure 2 The Theory of Planned Behavior (Icek & Fishbein, 1980; Ajzen, 1991).

## **Operationalizing PBC with a SDoH Framework**

PBC measures the impact of environmental and societal-level influences on health. PBC is measured by the distal constructs control beliefs and perceived power beliefs. The perception of the degree to which various internal or external factors facilitate or impede one's ability to perform the behavior reflect one's control beliefs (Ajzen, 2002; Yzer, 2012). The control beliefs construct relies on the identification of specific external or internal factors that impact one's ability to enact the behavior. Perceived power is one's perception of the ease or difficulty of performing the behavior in the presence of the identified external or internal factors. Icek Ajzen (1991; 2002) developed the PBC construct to account for factors beyond an individual's volitional control. However, there are no guidelines for identifying which items should be used when measuring control beliefs. This ambiguity is problematic. This lack of direction has caused researchers to rely on intuition or assumptions when measuring PBC (Yzer, 2012).

SDoH (i.e. neighborhood environment, socioeconomic status, employment, and education) are examples of environmental and societal-level factors that are beyond an individual's control. Operationalizing the construct PBC with a unified SDoH framework acknowledges the complex relationship between environment, social classifications, and health. Thus, a SDoH framework could be used as an effective measure of PBC beliefs (Maness & Branscum, 2017).

## **Purpose of Study**

Using a SDoH framework to measure PBC beliefs has been suggested in previous research in order to account for the multi-level interactions that influence



behavior (Maness & Branscum, 2017). The purpose of this study is to utilize the HP2020 SDOH framework to qualitatively elicit African Americans' PBC beliefs about physical activity. Understanding these perceptions is the first step towards developing culturally tailored interventions to promote physical activity to help mitigate CVD health disparities in this population.

### **Research Questions**

RQ1: How do elements of the Healthy People 2020 SDOH framework, reflect the reported barriers and facilitators beliefs about physical activity among African Americans?

RQ2: What are African Americans' salient barrier and facilitator beliefs about physical activity?

### **Research Hypothesis**

Exploratory research seeks to understand the causal factors of a problem from the perceptions of the individuals directly affected. After being informed by data collected from interviews with the population of interest, the researcher is then able to analyze the data and form hypotheses. Thus, many qualitative studies are hypothesis generating, as oppose to hypothesis testing (Sullivan & Joan, 2011). In order to develop an in-depth understanding of the population, this research design will follow an interpretivist qualitative approach. Interpretivist inquiry seeks to elicit the participants' priority beliefs and perceptions by guiding interviews with semi-structured questions and encouraging participants to speak freely (Ulin, Robinson, & Tolley, 2005). A research hypothesis will not be formed due to the exploratory nature of this inquiry.

## **Significance of the Research Problem**

CVD can affect everyone, but minorities are diagnosed and killed by the disease at a higher rate. Higher proportions of African Americans die prematurely due to CVD in Oklahoma than other citizens (Oklahoma State Department of Health, 2016). CVD is preventable in most instances and risk can be reduced by engaging in the recommended levels of physical activity for adults. However, African Americans report the lowest levels of physical activity compared to other ethnicities in the US (Cogbill, Sanders, & Deshpande, 2011). In order to decrease health disparities, one must first understand what causes them. In the absence of biological or genetic predispositions for disease, theoretically, people are born generally healthy. However, the environment in which people live, grow, work, and age begins to influence health (USDHHS, 2008). Perhaps the key to understanding what perpetuates health disparities is understanding experiences that influence health behaviors. Utilizing SDoH frameworks to understand African Americans' perceptions of physical activity is a vital step in working to decrease the incidence of CVD disparities and improve the health of the nation.

## **Operational Definitions**

Social Determinants of Health- Conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health outcomes and risks (USDHHS, 2013).

### Healthy People 2020 Social Determinants of Health

#### (1) Neighborhood and Built Environment

- a. Environmental Conditions: Safe air, land, and water are fundamental to a healthy community environment. Environmental hazards like

secondhand smoke, carbon monoxide, allergens, lead, and toxic chemicals, can cause disease and other health problems. (USDHHS, 2013).

(2) Health and Healthcare

- a. Access to Health Services- including clinical and preventative care: Includes components of health insurance coverage, usual and ongoing source of care, ability to receive care quickly after a need is recognized, and an adequate number of primary care providers from which to receive care (USDHHS, 2013).

(3) Social and Community Context

- a. Social Cohesion and Civic Participation: The ways in which citizens participate in the life of a community in order to improve conditions for others or to help shape the community's future (Adler & Goggin, 2005).

(4) Education

- a. High School Graduation Rates: Graduation with a regular diploma, 4 years after starting 9<sup>th</sup> grade (USDHHS, 2013).
- b. Enrollment in Higher Education: Enrollment in a 2 or 4-year college. (USDHHS, 2013).

(5) Economic Stability

- a. Employment Status: Whether individuals in the civilian non-institutional population did work for pay or profit within the last

week or were temporarily absent from a job or business in the last week (U.S. Bureau of Labor Statistics, 2012).

Perceived Behavior Control -Perceptions of the ease or difficulty of performing a given behavior (Ajzen, 2002).

Control Beliefs- Beliefs about the presence of factors that may facilitate or impede performance of the behavior. (Glanz et.al, 2008)

Perceived power- Beliefs about the power of situational and internal factors to inhibit or facilitate the performing of the behavior (Glanz et.al, 2008).

2008 Physical Activity Guidelines- Two hours and 30 minutes of moderate-intensity physical activity (i.e. brisk walking or bicycling) per week or one hour and 15 minutes of vigorous-intensity aerobic physical activity (such as jogging or swimming laps) per week. Adults should also engage in muscle strengthening activities for two or more days per week (USDHHS, 2008).

Aerobic Physical Activity- [Slowly] stimulates the heart rate and breathing rate in a way that can be sustained for the exercise session (Weil, 2015).

Moderate Physical Activity- Involves a moderate level of effort relative to an individual's aerobic fitness. On a 10-point scale, where sitting is 0 and all-out effort is 10, moderate-intensity activity is a 5 or 6 and produces noticeable increases in heart rate and breathing (Nelson et. al., 2007).

Vigorous Physical Activity - Involves a moderate level of effort relative to an individual's aerobic fitness. On a 10-point scale, where sitting is 0 and all-out effort is

10, vigorous-intensity activity is a seven or eight and produces large increases in heart rate and breathing (Nelson et. al., 2007).

## **Chapter 2: Literature Review**

### **CVD Disparities**

CVD is the cause of one out of every three American deaths annually (Benjamin et al., 2017). According to the AHA Heart Disease and Stroke Statistics Report of 2017, CVD claims the lives of nearly 2,200 Americans daily (Benjamin et al., 2017).

Although heart disease affects the entire population, minority populations have an overwhelming prevalence of CVD (Singh, Siahpush, Azuine & Williams, 2015).

Approximately 47.7 percent of African American females and 46.0 percent of African American males have some form of heart disease. In 2013, African Americans experienced 30% higher CVD mortality than Whites, and 113% higher than

Asian/Pacific Islanders (Singh, Siahpush, Azuine & Williams, 2015). CVD is a non-communicable and, in most cases, a preventable disease. The surgeon general suggests that adults can mitigate CVD risk with adequate aerobic physical activity (CDC, 2015).

Physical activity and CVD are inversely correlated (Cogbill, Sanders, & Deshpande, 2011). African Americans have the lowest self-reported rates of physical activity; about 41.8% of African Americans report compliance to the aforementioned physical activity guidelines for Americans (ODPHP, 2017). One method of improving the overall heart health of the African American community is to understand what facilitates or impedes physical activity behaviors.

### **Barriers to Physical Activity**

Physical activity behavior can be facilitated or impeded by a variety of factors. Psychosocial, environmental, societal, and even cultural influences have the ability to influence behavior. Many studies have been conducted to investigate physical activity

behaviors in the African American community. Studies of low-income African American women have found that common barriers to physical activity include lack of financial stability and lack of leisure time due to family responsibilities (Harley et al., 2014; Mansyur, Pavlik, Hyman, Taylor, & Goodrick, 2013). Additionally, other studies have found that, in some ways, African American culture can be a barrier to physical activity. That is, sometimes African American women avoid physical activity for weight management because having a high BMI is often seen as more attractive to the opposite sex (Harley et al., 2014; James et al., 2012). Additionally, African American women have expressed that regular physical activity makes it hard to maintain hairstyles that are aesthetically pleasing (Huebschmann, Campbell, Brown, & Dunn, 2016). Understanding what factors motivate or discourage physical activity is an important step in developing culturally tailored effective interventions.

Exploitative research can lead to an in-depth understanding of what influences physical activity behaviors within the target population. Qualitative inquiry illuminates the unique perceptions and needs of the target population. Historically African American physical activity interventions have shown little success and no long-term maintenance partially due to a lack of understanding of the unique needs of the community (Cleland et al., 2014; Harley et al., 2014). Together, health behavior theories and qualitative inquiry can lead to an advanced understanding of the populations' unique needs and experiences.

### **Theory of Planned Behavior**

The TPB seeks to understand and predict behaviors by incorporating constructs which account for the multi-level interactions that influence behaviors (Icek & Fishbein,

1980; Ajzen, 1991). The TPB posits that intentions are linked to behavior performance. The TPB uses three proximal constructs to measure intentions: attitude, subjective norm, and PBC.

Attitude towards the behavior is a measure of the distal constructs behavioral beliefs and outcome evaluations. That is, the emotional responses to the thought of performing the behavior, and beliefs about the benefits of performing the behavior are determine behavioral beliefs and outcome evaluations, respectively (Icek & Fishbein, 1980). Theory developers reason that an individual's attitude, or assessment of the outcomes that result from performing the given behavior directly influences an individual's intentions to change behavior. In other words, positive assessments of the resulting outcome lead to positive intentions. Whereas, negative assessments lead to negative intentions. Measuring an individual's attitude toward the intended outcome of the particular behavioral change is important when predicting health behaviors. There are many significant factors that contribute to developing and individual's attitude towards a particular outcome. According to the TPB changing an individual's attitude toward behavior, increases the probability of changing intentions (Icek & Fishbein, 1980).

The TPB also considers the subjective norms of an individual when predicting behavioral change intentions. Subjective norm is a measure of social identity. The distal constructs normative beliefs and motivation to comply determine an individual's subjective norm. Normative beliefs are the individual's beliefs about how their social group expects them to behave, while motivation to comply is the degree of the individual's drive to comply with valued referents (Icek & Fishbein, 1980).



Icek Ajzen added the construct PBC to the theory of reasoned action (TRA) in 1991 and created the TPB. Ajzen felt the TRA did not place enough weight on external factors which influence behavioral intentions, especially factors that individuals can (or in some instances, cannot) exercise a significant amount of volitional control. The TRA operates under the assumption that behavior performance is almost always under an individual's volitional control (Ajzen, 2002). Ajzen added PBC to the TRA to account for circumstances when an individual's volitional control is reduced (Ajzen, 2002). PBC is a function of two distal constructs, namely, control beliefs and perceived power beliefs. An individual's beliefs about factors that are beyond their control and said factors' ability to impede or facilitate performance of the behavior, is the individual's control beliefs (Ajzen, 2002). Perceived power is one's perception of the ease or difficulty of performing the behavior in the presence of these certain factors. When PBC is low, then the TPB posits that behavior intentions are negatively affected.

### **Social Determinants of Health and PBC**

PBC beliefs can be affected by societal and environmental factors of low volitional control. One qualitative study found that health insurance cost and lack of transportation negatively influenced Hispanics mother's intentions on getting their daughters vaccinated for HPV (Dillard, 2011). Another study investigating the lack of African American participation in physical activity community interventions found that common barriers to participation were: lack of access to facilities, lack of childcare, neighborhood safety concerns, and low feelings of community engagement (Cleland et al., 2014). Environmental influences on health have been long documented. In 1969 people dwelling in more deprived areas (i.e. low SES) had an 11% higher chance of

CVD morbidity and mortality. In 2013, people dwelling in more deprived areas had a 40% higher chance of CVD mortality (Singh, Siahpush, Azuine & Williams, 2015). Data from these studies demonstrate how environmental and societal factors impact health and health behaviors.

The purpose of the construct PBC is to have a better understanding of how internal or external factors impact one's behavior (Ajzen, 2002). Internal factors represent personal characteristics (i.e self-efficacy) while external factors represent larger structural influencers (i.e employment, education, environment). The TPB does not specify which internal or external factors to evaluate when applying the theory (Yzer, 2012). However, the PBC construct may be enhanced by utilizing a SDoH framework as a measure of external PBC beliefs (Maness & Branscum, 2017).

The HP2020 SDoH framework represents societal and environmental interactions that impact health. Operationalizing the construct PBC with a unified SDoH framework acknowledges the complex relationship between environment, social classifications, and health. The HP2020 suggest that the following five components are significant influencers of health: (1) economic stability, (2) education, (3) social and community context, (4) health and health care, and (5) neighborhood and built environment (ODPHP, 2017). These components should be measured together due to their overlapping nature; the components of the framework intersect and influence one another. That is, neighborhood and built environment is often determined by one's degree of economic stability, which is in turn influenced by educational attainment. According to the United States Census Bureau (2016) African Americans with an advanced degree earn an average of \$80,976 annually; while African Americans with

only a high school diploma earn an average of \$29,211. Lower earners have a higher chance of living in poor quality neighborhoods, and thus have poorer health (Singh et al., 2015). SDoH is an important concept to understand when striving to achieve health equity and eradication of health disparities.

### **Literature Search Results**

Articles for a review of previous literature were gathered electronically. Primary databases were Googlescholar.com and Libraries.ou.edu. Access to libraries.ou.edu provided further access to databases such as Cinahl, Medline, and PsychINFO. Eligible articles were saved for review. Eligibility criteria for articles were as follows:

- Published from 2008 to 2018
- Found with the following keywords or phrase: Theory of Planned Behavior, Application of TPB, Disparities, Social Determinants of Health (SDoH), Cardiovascular disease, Heart disease, Physical activity, Perceived behavior[al] control, Measuring PBC and African American.
- Content discussed in proper context (i.e. SDoH, PBC, and TPB in relation to health behavior).

## **Chapter 3: Research Methods**

### **Research Design**

This study is an exploratory investigation following an interpretivist qualitative approach. Interpretivist research acknowledges that individuals' perceptions are developed by lived-experiences (Ulin, Robinson, & Tolley, 2005). Through in-depth qualitative analysis the researcher seeks to understand the populations' salient beliefs, or perceptions, about a particular phenomenon. The purpose of this study was to elicit African American's salient beliefs about physical activity within the context of the HP2020 SDoH framework, thus this methodology is appropriate.

One-on-one interviews were conducted with each participant. Before interviews participants were asked to complete a brief demographic questionnaire to gather descriptive data such as race/ethnicity, gender, average height and weight, education level, income level, history of heart disease (yes/no), and report of primary care physician [Appendix A]. After completion of the demographic questionnaire, interviews began and were audio recorded. Each interview was guided by the same question path [Appendix B]. The question path was composed of semi-structured open-ended questions and participants were encouraged to speak freely to encourage the priority beliefs of the population to emerge. This was to allow the researcher to gain valuable insight which could only be discovered through open dialogue (Ulin et al., 2005).

### **Instrument**

The question path targeted only one health behavior—physical activity. Instrument development was guided by two frameworks—the HP2020 SDoH framework and the TPB. Regarding the TPB, only one of three constructs was used to guide instrument

development—namely, PBC; regarding the HP2020 SDoH framework, only four of five components were used to guide instrument development, namely, Neighborhood and Built Environment, Social and Community Context, Economic Stability, and Health and Healthcare. Each of these components had a unique subset of questions intended to elicit PBC beliefs [Appendix B]. Probes were developed for each question to be used when necessary in order to delve deeper into participants' general responses. The instrument was piloted by five members of the target population before use to allow members of the community to provide feedback on its effectiveness. The fifth HP2020 SDoH, Education, was removed after pilot testing due to a lack of relevancy regarding the behavior of interest. However, education characteristics (i.e. highest level of education completed) were documented in the demographic questionnaire (Table 1).

### **Sample Characteristics**

Qualitative inquiry is unique in that the results are not meant to be generalized (Ulin, Robinson, & Tolley, 2005). Qualitative inquiry is typically used to evaluate a very specific population, in order to understand a specific phenomenon. A small information rich sample can adequately answer qualitative research questions (Malterud, Siersma, & Guassora, 2016). Previous studies have shown that SDoH significantly influence African Americans' cardiovascular health (Singh et al., 2015). The research is specifically targeting one population, African Americans, and their perceptions of how the HP2020 SDoH influence physical activity. Thirty African Americans participants (n=30) made up the sample. Eligible participants were of an age range from 30-50. This age range is an attempt to target working adults with similar physical activity lifestyles. Participants were not eligible for participation if they did not

meet the inclusion criteria. The inclusion criteria for the study was as follows:

- Must self identify as African American
- Age 30 - 50
- Oklahoma resident
- No severe language disabilities
- United States Citizen
- Non-University of Oklahoma Employee

### **Recruitment**

The sample was recruited by convenience sampling techniques. Recruitment occurred in two counties in Oklahoma with the highest percentage of African American residents—namely, Oklahoma and Comanche county. In order to diversify the sample data collection was done at multiple sites during various times. Fifteen participants were recruited from each county. Interviews were conducted at the recruitment sites in a private office space. Gift cards in the amount of \$10 were provided to participants who completed interviews.

### **Data Collection**

Data collection occurred in the winter season, February 2018 through March 2018, at recruitment sites, in private office spaces. Efforts were made to protect the privacy of all participants. Demographic data were reported in aggregate including descriptive data by race/ethnicity, gender, average height and weight, education level, income level, history of heart disease (yes/no), and report of primary care physician. While in the field, data were de-identified by storing signed informed consents and demographic sheets separately in locked filed boxes. All interviews were recorded to be transcribed at

a later time. All audio recorded interviews were stored on a password protected USB device. When not in the field conducting interviews, the USB was stored in a locked office in the Collums building on the University of Oklahoma campus. A password protected excel file was used to store linked audio file names to unique identifiers on each demographic sheet.

### **Data Analysis**

Interviews were transcribed verbatim. The student researcher transcribed 23 interviews and the company Verbal Ink transcribed seven. Verbal Ink adheres to a non-disclosure agreement and confidentiality procedures to protect data files. After transcription, the researchers read through all interviews to ensure saturation was met. Saturation was achieved when participants did not begin to report new information. After reaching saturation, the researchers developed a codebook based on participants' general responses and the interview question path [Appendix C]. Then transcripts were uploaded into Nvivo software. Four rounds of independent and cooperative coding were done to achieve a satisfactory coder agreement level of at least 90%. After all interviews were transcribed, analysis of themes began. With a sample size of thirty, qualifying themes had to meet or exceed a threshold of 25% ( $n=7.5$ —rounded up to 8). All emerging themes were documented.

### **Delimitations**

1. The qualitative inquiry was conducted in two counties in Oklahoma with the highest African American population (i.e. Oklahoma and Cleveland county) due to resource availability and accessibility to the population.
2. The interviews focused on only one particular behavior, physical activity.

3. Interview questions were guided by the HP2020 SDOH framework.
4. Interview question path focused on only one of the constructs in the TPB, PBC.

### **Assumptions**

1. Most African Americans (age 30-50) living in Oklahoma and Comanche county have similar experiences with regards to physical activity.
2. The five components listed in the HP2020 SDoH framework adequately represent the top priorities of the population's perceptions of physical activity.
3. A relationship exists between PBC and SDoH.



## **Chapter 4: Results**

### **Introduction**

The purpose of the study was to qualitatively elicit African Americans' PBC beliefs about physical activity regarding the relevant components of the HP2020 SDoH framework. Instrument and codebook development were guided by the framework and further informed by pilot testing. Four of the five major components of the HP 2020 SDoH framework were used in the codebook, namely: (1) Economic stability, (2) Health and Healthcare, (3) Neighborhood and Built Environment, and (4) Social and Community Context. Each of these components had a unique subset of questions intended to elicit the populations' salient beliefs, or themes regarding that determinant. The fifth determinant, Education, was removed after pilot testing due to a lack of relevancy regarding the behavior of interest. However, education characteristics were documented in the demographics portion of interviews. This chapter will describe the sample, and present emerging themes with examples of direct quotes from participants.

### **Sample Characteristics**

The sample consisted of 30 African American participants 50% (n=15) female and 50% (n=15) male. Participants ranged in age from 30-50 years old, with an average age of 39. Among the sample, 40% (n=12) had completed some college, 26% (n=8) had a bachelor's degree, and 6% (n=2) had a master's degree, and 27% (n=8) of participants worked in an office setting. The majority of participants, 93% (n=28), were not recipients of government assistance. Participants were asked to self-report their health status, 57% (n=17) described themselves as generally healthy, however, 53% (n=16), reported having a health condition that affects their ability to be physically active.

Additionally, 86% (n=26), reported having a primary care physician, and 40% (n=12) of the sample reported visiting physicians once per month or several times per year (Table 1).

Table 1. Sample Characteristics

<b>Descriptive Demographics</b>	<b>Category</b>	<b>Total</b>
Gender	Female	50% (n=15)
	Male	50% (n=15)
Age (average)		39
Weight (average)	Female	202 lbs.
	Male	215 lbs.
Height	Female	5'6''
	Male	5'9''
Highest level of education completed	High School Diploma/GED	13% (n=4)
	Some college	40% (n=12)
	Vocational College	13% (n=4)
	Bachelor's degree	26% (n=8)
	Master's degree	6% (n=2)
Occupation	Office setting	27% (n=8)
	Manual labor	20% (n=6)
	Healthcare	17% (n=5)
	Homemaker	10% (n=3)
	Retired	10% (n=3)
	Childcare	7% (n=2)
	Disability	7% (n=2)
	Unemployed	3% (n=1)
Has a primary care provider?	Yes	87% (n=26)
	No	13% (n=4)
Receives government assistance?	Yes	7% (n=2)
	No	93% (n=28)
Meets 2008 Physical Activity Guidelines for Adults (self-reported)?	Yes	53% (n=16)
	No	33% (n=10)
	Don't know	13% (n=4)

## **Thematic Analysis**

Interviews (n=30) were coded by two coders and analyzed for themes that met or exceeded a threshold of a 25% (n=7.5—rounded up to 8). The codebook was developed by two coders based on the interview guide and emerging themes after reading transcripts [Appendix C]. Coders met and coded one interview together, then two separately and compared. Next, two more interviews were coded separately, and compared. Another five interviews were coded separately, and compared by coders. Finally, the remaining 20 interviews were coded separately and coder agreement was calculated based on only these 20. Coders achieved 99.2% coder agreement on 20 interviews.

Thematic analysis revealed six themes for Neighborhood and Built Environment; four for Health and Healthcare; four for Economic Stability; and two for Social and Community Context. Facilitator and barrier type questions (i.e. What makes this easy to do/What makes this hard to do, respectively) were asked regarding each of the four components as well. However, only two had qualifying facilitator or barrier themes —namely, Economic Stability, and Neighborhood and Built Environment. Additionally, participants were asked to name their most significant barrier to physical activity and their most significant facilitator to physical activity. Economic stability and Neighborhood and Built Environment were identified as most significant barriers and facilitators to physical activity, respectively. Outside of the HP2020 SDoH framework an additional theme emerged—motivation. Themes will be described separately below. The findings will be used to answer the following:

**RQ1:** How do elements of the Healthy People 2020 SDOH framework, reflect the reported barrier and facilitator beliefs about physical activity among African Americans?

**Neighborhood and Built Environment**

Table 2. Summary of Neighborhood and Built Environment Themes

<u>Code</u>	<u>Themes</u>
Description of neighborhood	<ul style="list-style-type: none"> <li>• Single-family residences (n=13)</li> </ul>
Description of physical activity	<ul style="list-style-type: none"> <li>• Access to trails/tracks/sidewalks (n=16)</li> <li>• Access to parks (n=9)</li> <li>• Access to gyms (n=11)</li> </ul>
Built environment facilitators	<ul style="list-style-type: none"> <li>• Accessibility (n=12)</li> </ul>
Natural environment barriers	<ul style="list-style-type: none"> <li>• Weather (n=9)</li> </ul>

Single-family residence

The code ‘Description of neighborhood’ was used to understand the general environment of the population. Participants were asked to describe their neighborhood and were encouraged to speak freely. In general, participants described their neighborhoods as safe and quiet. However, descriptions of dwelling in single-family residences (n=13), was the only theme from the code ‘Description of neighborhood’.

*“It’s a regular neighborhood. It’s got mostly probably three bedroom houses, family oriented. It’s off a main road. There are parks around. There are schools, so yeah”*

*“Um the neighborhood is nice, it’s quiet. Um the structure I would say most of it is three to four bedrooms one level. Um they have uh I think a lake somewhere back there and its nice for walking it actually has sidewalks so you can walk.”*

#### Access to walking trails/tracks/sidewalks

The code ‘Description of physical activity’ was used to document participants’ responses to the question “Can you describe what it would be like to perform physical activity within your neighborhood?” This question was intended to gauge what, if any, environmental resources were available to the population regarding physical activity. Responses included examples of what they could do or where they could go to be physically active within their neighborhood and the surrounding community. Participants detailing access to walking trails, sidewalks, and tracks was a dominating theme (n=16). Particularly, participants spoke about how they could be active within their neighborhood due to the availability and access to tracks/sidewalks/or pathways.

*“It’s be easy to walk or jog the neighborhood, because the streets and the environment that it is in, it’s a real nice environment. There are several gyms that are also easily accessible out there.”*

*“Oh, yeah. We do it all the time. We walk. We have a three-mile track, and a lot of girls get together sometimes and walk it.”*

#### Access to gyms

Participants were also asked to think about the area surrounding their neighborhood and describe nearby recreational facilities for physical activity. The code

‘Description of physical activity’ was also used to document responses to this question. Another theme within the code ‘Description of physical activity’ was access to gyms (n=11). The degree of access to gyms varied among participants living in homes and apartments. Those dwelling in apartments detailed availability of gyms within the apartment complex. While those dwelling in homes often detailed the ability to commute to a local gym.

*“You have trails you can go walking or jogging. You can play tennis, you can go to the gym, lift weights, ride the bikes. So, there’s a lot to do.”*

*“Uh, there’s some gyms but it’s probably about a five-mile commute to those gyms. Uh to the nearest gym.”*

#### Access to parks

A final theme within the code ‘Description of physical activity’ was access to parks (n=9). However, participants did not detail experiences with using parks for recreational physical activity (i.e. playing soccer, basketball, or other sports/recreational activities). Instead, descriptions of parks were often coupled with statements about the availability of walking trails at or near the park.

*“It would be peaceful. They have walking trails at the park. They have sidewalks around the neighborhood.”*

*“Yes, there is another park, Elmer Thomas Park, which has the playground and a nice big track around the lake.”*

#### Accessibility

After allowing participants to describe how, or what, they could do in their neighborhood to be physically active, subsequent questions captured facilitator beliefs. The code ‘Built environment facilitators’ was developed to document references

describing how, or why, participants believed their neighborhood/environment facilitated physical activity. Specifically, after participants described having resources for physical activity within their community, they were asked “What makes it (i.e. said resources) easy to use?” Responses consistently referred to the degree of access to environmental and community resources for physical activity. Accessibility (n=12) was a dominant response and the only theme that met the 25% threshold for the code ‘Built environment facilitators’. This theme reflects the populations’ belief that accessibility to environmental resources facilitates physical activity.

*“Because it’s literally, like two minutes away from my house. So, it’s easy access.”*

*“Because it’s pretty much open 24 hours. It’s free and if any time you’re ready to go there, if it’s not unlocked, one of the coaches or the athletic director will come open the doors for you, for you to go in there and workout.”*

### Weather

Participants were also asked to describe in what way, if any, does their neighborhood and built environment impede their physical activity. The code ‘Natural environment barriers’ was developed to account for any and all responses referring to beliefs about ways in which their natural environment negatively impact their physical activity, weather (n=9) was the only emerging theme. Participants spoke about the temperatures being too low to enjoy physical activity outside.

*“Um the weather. I mean sometimes it’s cold outside.”*

*“It’s really hard to enjoy outside exercise, or outside physical activity when it’s cold outside.”*

*“The weather was the main issue during the summer we did a lot of walking and jogging around the neighborhood, but when it got cold and winter time came, then we had to move to indoor location, it was cold.”*

## Health and Healthcare

Table 3. Summary of Health and Healthcare Themes

<u>Code</u>	<u>Themes</u>
Physician’s recommendations	<ul style="list-style-type: none"> <li>• Physician encourages physical activity (n=17)</li> <li>• Physician gives guidelines for physical activity (n=13)</li> </ul>
Physician's recommendation impact	<ul style="list-style-type: none"> <li>• Positive impact on physical activity (n=10)</li> <li>• Little/no impact on physical activity (n=8)</li> </ul>

### Physician encourages physical activity

Participants were asked to describe their experiences with health and healthcare with regards to physical activity. Characteristics of the sample show that 86% (n=26) of the sample reported having a primary care physician, and 40% (n=12) reported visiting the doctor once per month or several times per year (Figure 3). Participants were asked to describe what, if anything, did their physician recommend regarding physical activity. The code, ‘Physician’s recommendations’, was used to document any reference to recommendations from physicians concerning physical activity. There were a variety of responses including participants having similar experiences with physicians recommending physical activity for weight loss (n=7), however, this did not qualify as a theme. Additionally, some participants detailed experiences with physicians



recommending physical activity to simply improve their general health. However, in general, the populations' belief was that primary care physicians do encourage physical activity. Thus, the dominant theme was *physicians encourage physical activity* (n=17).

*“He encourages me to exercise as much as possible every day without over doing it. But he does encourage me.”*

*“Um she tells me that I do need to um be engaging in physical activity as far as um weight loss goes um and also just overall just um increase in health.”*

#### Physician gives guidelines for physical activity

Interview questions were open ended and explorative to encourage the population's salient beliefs to emerge. As participants spoke about physicians promoting physical activity probes were used to gain a deeper understanding. Participants were asked, “What does your physician recommend to you regarding physical activity?” The code, ‘Physician’s recommend guidelines for physical activity’ was used to document all references to guidelines for physical activity from physicians. Responses varied due to guidelines being personalized to fitness level, health, or weight loss goals. However, the emerging theme, *physicians gives guidelines for physical activity*’ (n=13), was centered around physicians giving specific objectives (i.e. 30 minutes per day) for physical activity.

*“Yes at least thirty minutes a day of um constant physical activity. Which means you know um its frequent movement as far as getting a heart rate as high as, I think its 120 beats per minute I think that’s what it is. Maintaining that for at least uh ten to thirty minutes that heart rate. That’s what he recommends.”*

*“He told me you know, maybe at least two times a week. You know, 20 to 30 minutes a day, whatever I can tolerate.”*

### Physicians' recommendations positively impact physical activity

After participants described their experiences with primary care physicians regarding physical activity, subsequent questions were intended to gauge facilitator and/or barrier beliefs. The code 'Physician's recommendation's impact' was used to document all references to how physician's recommendations impact physical activity. Positive and negative beliefs were placed within this code. Negative beliefs will be reported separately. To capture facilitator beliefs participants were asked, "What makes it easy to follow your physician's recommendations?" The question was intended to understand in what way, if any, did their physician's recommendations facilitate physical activity. The theme, physician's recommendations positively impact physical activity (n=10), emerged and was centered around beliefs about feeling motivated by recommendations.

*"I don't think it's harder, but it's like the next time you see them you want to make sure you do what you needed to do. So, it kind of gives you that motivation to continue what you're doing."*

*"If anything, I would say that my physician influenced me positively because of the things he tells me and my progress since I've been with him."*

### Physicians' recommendations have little to no impact on physical activity

Additionally, barrier questions were intended to gauge barrier beliefs about physician's recommendations. Negative or neutral feelings about recommendations were documented within the code, 'Physician's recommendation's impact'. Participants were asked "What makes it hard to follow your physician's recommendations?" This question was intended to understand in what way, if any, did physician's recommendations impede physical activity. The theme, physician's recommendations

have little to no impact on physical activity (n=8), was centered around feelings of indifference towards physician’s advice. These responses seemed to reflect a belief that physician’s advice is irrelevant without personal motivation, and that sometimes motivation is intermittent.

*“To be honest, no. What makes it easy for me is me just wanting to get up and do it. I mean, somebody could talk to you about something till they’re blue in the face, but until you decide you wanna do it for you, then it’s not gonna matter.”*

*“At first, they did, but it just goes in one ear and out the other. Just being honest. I started off thinking yeah I need to do these things, I need to get out and be active but then it just drops off”*

### **Economic Stability**

Table 4. Summary of Economic Stability Themes

<u>Code</u>	<u>Themes</u>
Physical activity in work life	<ul style="list-style-type: none"> <li>• <i>Employment duties require physical activity (n= 10)</i></li> </ul>
Employment barriers	<ul style="list-style-type: none"> <li>• <i>Tired or in pain from work (n=9)</i></li> </ul>
Financial facilitators	<ul style="list-style-type: none"> <li>• <i>Employment/money gives more options for physical activity (n=9)</i></li> </ul>
Financial status has no impact	<ul style="list-style-type: none"> <li>• <i>Neutral financial beliefs (n=13)</i></li> </ul>

#### Employment duties require physical activity

In order to understand the population’s relationship with employment and physical activity participants were asked, “How do you incorporate physical activity into your work life?” The code, ‘Physical activity in work life’ was used to document all references to how physical activity is incorporated into their daily work life.

Participants reported various occupational settings including: offices, healthcare facilities, field work, and child care facilities (Figure 3). Although occupations varied, the emerging theme, employment duties require physical activity (n=10), was observed. Healthcare workers detailed experiences of having to stand or walk for long hours. Participants who worked with children described that having to keep up with the children required physical activity (i.e. periods of walking and running). The working proportion of the sample believed that their responsibilities at work are physical and strenuous.

*“It’s a lot of bending, fast paced movements, a lot of lifting. It’s quite a workout. I can definitely compare it to sports.”*

*“Well my work consists of walking up three flights of stairs daily and down. So, it’s pretty rigorous.”*

#### Tired or in pain

Additionally, participants were asked barrier questions to develop an understanding of how employment impedes physical activity. After participants described how they did or did not incorporate physical activity into their work lifestyle, probes followed. Participants were asked to describe in what way, if any, did their employment status impede their physical activity. The question was intended to elicit barrier beliefs about employment and physical activity. The code, ‘Employment barriers’ was used to document barrier beliefs. The emerging theme, tired or in pain (n=9), emerged and reflected the population’s beliefs that employment status could act as a barrier by causing feelings of pain or fatigue that discourage physical activity.

*“Yeah because say for instance right say I didn’t work last night, I wouldn’t be tired the next day. But if I work like two to three days back to back then I’m tired. You know what I’m saying? So, I really don’t feel like doing nothing.”*

*“It’s not. It’s not easy. I actually have to motivate myself after work to be physically active, because it kind of makes you lazy and not wanna do anything from doing so much at work. So—.”*

### Socioeconomic status gives more options for physical activity

In order to understand how socioeconomic status facilitates physical activity, participants were asked, “How does your financial status influence your ability to be physically active?” The question was intended to elicit beliefs about in what way, if any, did their socioeconomic status impact their physical activity. Positive and neutral beliefs were documented. Neutral beliefs will be discussed separately. The code, ‘Financial facilitators’ was used to document all references to how socioeconomic status facilitates their physical activity. *Socioeconomic status gives more options for physical activity (n=9)*, emerged as a theme. Within this theme participants described that having monetary resources for gyms and equipment helped them to be physically active.

*“If you want to go buy extra weights or something you can do that. It’s not going to be an issue like oh I got to wait until I get paid. Think that having good finances gives you more options.”*

*“It makes it easy, because if I need to pay for a trainer or the gym I can. It makes it easy.”*

### Neutral financial beliefs

Additionally, participants were asked barrier questions to develop an understanding of how socioeconomic status impedes physical activity. Participants were

asked to describe how their socioeconomic status impedes their physical activity. The code, ‘Finances have no impact’, was used to document all references to neutral beliefs about the impact of finances on behavior. Neutral financial beliefs (n=13) emerged as a theme. Participants expressing neutral financial beliefs often also expressed the availability of free resources for physical activity.

*“Um it really doesn’t because a lot of the stuff you can do is free. I don’t really have to have any money to walk the neighborhood or go to a park because that’s free so it doesn’t influence it at all.”*

*“Well I have access to the gymnasium, the Fort Sill Gymnasium. They’ve got all the exercise equipment that I could think about there to use. So I don’t think about—it doesn’t cost me anything to use it.”*

### **Social and Community Context**

Table 5. Summary of Social and Community Context Themes

<u>Code</u>	<u>Themes</u>
Description of engaging in community events	<ul style="list-style-type: none"> <li>• <i>No engagement recently, or ever (n=14)</i></li> <li>• <i>Awareness of events (n=19)</i></li> </ul>

#### No engagement recently, or ever

Participants were asked to describe their experiences with participating in community or social physical activity events. The code, ‘Description of engaging in community events’ was used to document references to engagement or lack of engagement in community events. Participants gave a variety of responses. Some participants expressed no engagement due to a lack of interest or poor health. Others

detailed a lack of participation, but an interest in community events. However, only, *no engagement recently, or ever* (n=14) met the threshold as a theme.

*“I haven’t done that in about four years. So, it’s been a while since I’ve done that.”*

*“I have never done that. I have never done a marathon but I want to.”*

*“Well I am not a runner, so a marathon is out of the question. That is actually on the bucket list though to do a half marathon or a relay. I’ve gone out to support my friends who do marathons. But I’ve never done anything as an individual. I would do it if I was built for it.”*

#### Awareness of community events

To further understand the populations’ social and community context beliefs participants were asked to describe a time when members of their community came together to participate in physical activity events. The code, ‘Description of engaging in community events’, was also used to document these experiences. Participants detailed any knowledge of community physical activity events. In the description participants would often describe who they supported in the event, and the cause for the event. Awareness of community events (n=19), was classified as a theme.

*“My nephews they run in some type of marathon every year, but I don’t.”*

*“I know Cameron University they do those walks for lupus and cancer awareness and stuff like that and a color run I think.”*

*“Yes, we actually got T-shirts made. We were supporting one of our coworkers that was dealing with breast cancer or some kind of cancer at the time.”*

#### **Motivation**

Table 6. Summary of Motivation Themes

<u>Code</u>	<u>Themes</u>
Motivation	<ul style="list-style-type: none"> <li>• Motivation (n=10)</li> <li>• Laziness (n=8)</li> </ul>

### Motivation

The research was designed to be exploratory. Questions were open-ended and participants were encouraged to speak freely to allow salient beliefs to emerge. Each of the four SDoH components consisted of facilitator and barrier questions (i.e. What makes this easy to do/What makes this hard to do). Responses to facilitator and barrier questions varied for each participant and each SDoH component. Not all of the SDoH components had barrier/facilitator themes emerge, nor did all participants report barrier/facilitator beliefs. There were no direct questions about physical activity and motivation or lack of motivation. However, it was necessary to develop the code ‘Motivation’ to account for the emerging motivation (n=10) theme. Patterns of describing a lack of motivation in response to barrier questions was noticed among participants who expressed having no barriers.

*“Getting there, that’s just it not being lazy, motivation.”*

*“Um nah I don’t think it’s particularly difficult. I think it’s more about finding the motivation.”*

*“Well I’m not self-motivated to work out. I don’t have any impediments to working out. I have gym equipment inside the house. I have a nice neighborhood to walk through. If I want to challenge myself I invite my sons to go workout*



*with me, and they will definitely do that. So, I think it's more just being self-motivated."*

**Laziness**

Additionally, patterns of describing feelings of laziness in response to barrier questions was also noticed among participants who expressed having no barriers. *Laziness* (n=8), also emerged within the code 'Motivation'.

*"I just really didn't want to do it. Just lazy."*

*"Uh, I really don't have any challenges it's just laziness. I mean but once I'm up and moving, I'm up and moving."*

*"No because you know I was always physically active most of my life anyway. Now so it's more like the laziness in me."*

**RQ2:** What are African Americans' salient barrier and facilitator beliefs about physical activity?

Table 7. Summary of Most Significant Barrier and Facilitator Themes

<b><u>Most Significant Barrier</u></b>	
<u>Code</u>	<u>Themes</u>
Most significant barrier	<ul style="list-style-type: none"> <li>• <i>Economic stability (n=8)</i></li> </ul>
<b><u>Most Significant Facilitator</u></b>	
<u>Code</u>	<u>Themes</u>
Most significant facilitator	<ul style="list-style-type: none"> <li>• <i>Accessibility/Convenience within neighborhood and built environment (n=8)</i></li> </ul>

**Most Significant Barrier**

**Most significant barrier**

Throughout the interview participants were asked barrier questions (i.e. What makes this hard to do?) to elicit barrier beliefs about physical activity. At the end of the interview participants were asked, “Of everything we talked about today, which is your most significant barrier to physical activity?”. Participants were encouraged to speak openly and freely. There were a variety of responses, including motivation, injury, and community. However, within the code ‘Most significant barrier’, economic stability was the only emerging theme. Participants collectively expressed that feeling fatigued after work, and working long hours was an impediment to physical activity.

*“Um, I would say work because after working for so long and so many hours I be exhausted and the only thing I can just do is go to sleep.”*

*“Work. Wanting to maintain on my job and be consistent with my money. You know, that’s the main factor that’s stopping me from working out.”*

#### Most significant facilitator

Additionally, at the end of each interview participants were asked to name their most significant facilitator to physical activity. Specifically, participants were asked “Of everything we talked about today, which is your most significant facilitator to physical activity?” Some responses included employment, health, and family. However, the only theme was accessibility/convenience (n=8) within their neighborhood and built environment. Participants expressed that having access to close and convenient resources for physical activity decreased the need to have to travel far to work-out.

*“I’m going to say my community because where I live I have access to a gym. I don’t have an excuse of why I can’t go. It’s just simply right there.”*

*“The location, because seeing that I do have access to the trails around the neighborhood, I really don’t have to travel to workout unless I choose to.”*

## **Chapter 5: Discussion**

### **Introduction**

This explorative study was used to investigate African American's PBC beliefs about the impact of SDoH on physical activity. Four components of the HP2020 SDoH framework were relevant to the behavior of interest—namely (1) Economic Stability, (2) Social and Community Context, (3) Health and Healthcare, and (4) Neighborhood and Built Environment. For the purpose of this study, Economic Stability was explored within the scope of employment, and poverty; Social and Community Context within the scope of civic participation, and social cohesion; Health and Healthcare within the scope of access to healthcare, and access to primary care; and Neighborhood and Built Environment within the scope of crimes, violence, and environmental conditions (ODPHP, 2017). Qualitative inquiry was used to gain an in-depth understanding of the experiences of the target population. This chapter will discuss implications of the study results, conclusions drawn from the research, study limitations, recommendations for future research, and suggestions for implementing knowledge into health promotion practice.

### **Implications of study results**

There were unique findings within each component of the framework. Some findings supported the HP2020 SDoH framework, and some did not. Some components overlapped with other components of the framework, and with constructs within the TPB. Findings will be discussed based on SDoH area.

For the purpose of this study, Economic Stability was explored within the scope of employment, and poverty. In the case of determining PBC beliefs about the presence of economic facilitators and barriers to physical activity, findings reflect the sample's

belief that socioeconomic status can either be a facilitator or have no impact on physical activity. Participants described that socioeconomic status facilitates physical activity by increasing the availability of resources for physical activity. Specifically, participants frequently referenced the available resources within their neighborhood and community environments. Further, the sample also identified *accessibility* (n=8) as their most significant facilitator to physical activity. Previous research documenting the impact of socioeconomic status on physical activity also acknowledges the effect socioeconomic status has on access to physical activity resources. With regards to physical activity, topic areas Economic Stability and Neighborhood and Built Environment seem to have overlapping properties. Low-income individuals have a higher chance of living in poorer quality neighborhoods (Singh et al., 2015). Additionally, Bhurosy & Jeewon (2014) found that neighborhoods of low to moderate socioeconomic status have significantly lower physical activity resources, and majority of individuals of low socioeconomic status are unable to afford resources that require payment. These findings suggest that within an African American population with similar SES characteristics, the availability of neighborhood and community resources may impact physical activity behaviors.

A closer look at the neutral financial beliefs theme provides deeper insight on the relationship between SES and behavior. These neutral beliefs emerged from a sample that often expressed the availability of access to free physical activity resources (i.e. walking trails, parks, gyms) within their neighborhoods. These neutral financial beliefs suggest that in the presence of readily available physical activity resources, socioeconomic status impacts behavior to a lesser extent. However, it is important to

consider that participants did not identify any socioeconomic barriers to physical activity. Yet, in a separate study, low-income African American women did identify economic barriers to physical activity, namely, financial instability, and lack of access to facilities (Harley et al., 2014; Mansyur, Pavlik, Hyman, Taylor, & Goodrick, 2013). The experiences of African Americans identifying as low-income versus those identifying as moderate to high-income may vary. Attempts were made to diversify the sample; however, 80% of the participants in the current study were employed and 93% did not receive government assistance. Future research evaluating the effects of economic stability on physical activity within the African American community should work to diversify the sample as much as possible. Behavior intentions among African Americans of high SES may differ from those of lower SES.

Neutral financial beliefs also provide an opportunity to explore the idea of investigating the impact of providing equal access to physical activity resources across demographics. The emergence of neutral financial beliefs among this sample suggests that if resources are accessible then behavior can be performed—regardless of SES. That is, if resources to physical activity are available in low-SES neighborhoods to the same extent as those in high-SES neighborhoods, physical activity disparities may be mitigated. To my knowledge, there have been no studies designed to assess the impact of equalizing physical activity resources across the SES spectrum, particularly within the African American community. Findings from this type of research could have the potential to inform future design policies and impact health and wellbeing in this population.

Social and Community Context within the scope of civic participation, and social cohesion examines how resources and support within a population's community impact health. The sample detailed a high degree of awareness of community physical activity events coupled with a high degree of a lack of participation. When participants were asked to describe experiences with community physical activity events, many of the responses did not include any descriptions of the promotion of health and wellness within the African American community specifically. African Americans suffer from CVD at a higher rate than other Americans and would benefit from community events that raise awareness and promote health habits to combat the disease. Yet nearly all descriptions of community events included causes for cancer, multiple sclerosis, diabetes, and even drugs. However, there was only one participant who described a physical activity event targeted for overweight African American women. This finding suggests that the lack of participation could potentially be due to a lack of inclusion in Oklahoma.

Most studies of African American community engagement focus on participation in religious groups or institutions. Some participants described experiences with physical activity and their church group when asked about community involvement. The Woodland Study, a 20-year prospective study of African Americans, found that women who reported higher levels of community engagement (secular or religious) also reported higher levels of physical and mental health (Fothergill et al., 2014). This suggests that community engagement is positively correlated with health outcomes. Most participants did not mention any culturally tailored community wellness programs or initiatives in Oklahoma. However, such programs do exist within

other states. For example, The National African American Male Wellness Initiative (n.d.) is non-competitive 5k marathons for men, women, and children aimed to promote healthy habits within the community. This particular program has a goal of obtaining 60,000 participants by the end of 2018 and has been operating for 13 years. The success of this organization in addition to findings that community engagement promotes long-term health indicate that African Americans in Oklahoma could potentially benefit and enjoy culturally tailored community physical activity events.

The Health and Healthcare topic area of the HP2020 SDoH framework was examined within the scope of access to healthcare and access to primary care. The HP2020 SDoH framework posits that access to healthcare and access to primary care are relevant influencers of health outcomes. Sample characteristics show that 87% (n=26) of the population reported having access to a primary care physician (figure). Physicians' recommendations for physical activity was were the impact on behavior was noted. There was a split in beliefs about the degree of the impact healthcare providers have on behavior. Analysis shows that one portion of participants felt that recommendations from their healthcare provider positively influenced their behavior. However, another portion of the sample described beliefs that their physician's recommendations had little to no impact on their behavior. Some participants were motivated to comply with their physicians' advice while others were not. The split in beliefs suggest that the relationship between primary care physicians and members of the African American community vary and should be further explored.

Relationship dynamics are developed over time via a series of interactions. It is important to consider how interpersonal interactions impact the relationship between

primary care physicians and members of the African American community. African Americans have experienced a history of racial discrimination in research and health services. These experiences include intentionally being denied treatment after diagnoses of disease, and having health information used without knowledge or consent (Boulware, Cooper, Ratner, LaVeist, & Powe, 2016). Graham (2015) found that minorities diagnosed with Acute Coronary Syndrome—a type of CVD—were less likely to receive potential beneficial treatments like angiography or coronary intervention. This legacy potentially contributes to African Americans low-level of trust in healthcare. Boulware et al. (2016) assessed fear and suspicion of physicians and hospitals and found that non-Hispanic Blacks were less likely to trust their physicians than non-Hispanic Whites. Additionally, non-Hispanic Blacks were more likely to be concerned with harmful experimentation in hospitals than non-Hispanic Whites (Boulware et al., 2016). Currently there is an underrepresentation of literature assessing the relationship between primary care physicians and African Americans concerning physical activity. Primary care physicians are at the forefront of CVD disease prevention.

During the elicitation of beliefs about health and healthcare, the topics of trust and distrust did not emerge. However, the finding that some participants were motivated to comply with their physician while others were not implies that the interpersonal interactions between physicians vary. The significance of interactions between African Americans and primary care physicians corresponds to the subjective norms construct within the TPB. Subjective norms are influenced by an individual's perceptions about the normative beliefs of an important referent (i.e. physicians) and further influenced by



the individual's motivation to comply with this referent. Understanding how and why physicians become important referents to members of the population is significant, as well as learning how to increase the population's motivation to comply with physicians. Additional research can be used to help build strong relationships between primary care physicians and African Americans, which can promote healthy lifestyles and decrease disease.

Neighborhood and environmental conditions were explored within the scope of physical neighborhood conditions, crime, and violence. Primarily, participants lived in single family homes or apartment complexes. In general, the sample seemed to be pleased with their environmental conditions. In regard to perceptions about how their environment impacts physical activity, *accessibility* (n=12) to resources was the dominant theme among both participants residing in homes and apartments. Specifically, descriptions of a high degree of access to walking trails, parks, and gyms emerged as themes. However, the degree of accessibility did vary slightly depending on type of residences. Descriptions of immediate access were more frequently attributed to participants living in apartment complexes; moderate access (i.e. requiring a short drive) were attributed to participants living in single-family homes. However, even with varying degrees of accessibility, no built environment barrier themes emerged from the sample. This finding suggests that perceptions of a high degree of access to resources has the ability to impact behavior or behavior intentions. 53% (n=16) of the sample self-reported meeting the 2008 Physical Activity Guidelines for Adults, and 27% (n=8) reported *accessibility* (n=12) as their most significant facilitator to physical activity.

Perhaps an effective way to promote this behavior within this community is by increasing access to necessary resources.

Interestingly, the identified environmental barrier almost negates the positive effects of the most important facilitator. That is, the natural environmental barrier, *weather* (n=9), almost cancels out the positive outcomes of the identified built environment facilitator, accessibility (n=12). Two out of three accessible resources identified were outside resources, however, weather (n=9), was described as being a natural environmental barrier to physical activity. This means that in the presence of inclement weather (i.e. cold temperatures) the sample's most significant facilitator is limited—thus, natural environment barriers significantly impact behavior. It is important to note that data collection was done during the winter season, and may have impacted participants' responses. What is unique about the emergence of weather as a barrier to physical activity is the fact that the HP2020 SDoH framework makes no mention of how the natural environment impacts health. Perhaps this is due to the fact that the framework is constructed of factors that can be reasonably changed or controlled on an economic, political, or societal level. Weather, conversely, cannot be controlled or changed, instead, individuals must adjust according to changing weather conditions. In relation to physical activity, adjustments come in the form of either: exercising in climate controlled environments, purchasing weather-permitting gear, or not performing the behavior if the weather does not permit. A different qualitative study of African American women identified weather as a barrier to physical activity as well (Gothe, & Kendall, 2016). Research documenting how weather influence physical

activity within this population is needed, in addition to research exploring how to overcome this barrier.

Each component of the framework had a unique set of questions intended to elicit salient beliefs. Facilitator and barrier questions (i.e. “What makes this easy to do/What makes this hard to do?”) were asked for all components. There were many instances of participants expressing beliefs about having no barriers to physical activity. These types of responses were often coupled with statements about motivation. Specifically, participants expressed that their motivation or lack of motivation is what impacts their decision to be physically active in the absence of any barriers. This theme was unanticipated, and emerged as a result of using open-ended interview questions. In addition, as participants expressed beliefs about motivation, many began to use the adjective lazy to describe themselves. Subsequently, laziness (n=8) emerged as a theme and generally represented beliefs about simply being unwilling to be active even in the absence of barriers—emphasizing their degree of motivation. When evaluating the underlying meaning of motivation as a theme, it is important to consider the characteristics of the sample. 80% were employed, 93% did not receive government assistance, and as a whole, the sample did not identify any SES barriers to physical activity. This suggests that when SES barrier perceptions are low internal factors potentially influence behavior to a greater degree.

## **Conclusions**

When evaluating perceptions of how the HP2020 SDoH influence physical activity among African Americans in Oklahoma results revealed both internal and external factors impact physical activity. The external influencers, Economic Stability

and Neighborhood and Built Environment, were found to both facilitate and impede physical activity to some degree. Economic Stability and Neighborhood and Built Environment were also found to be the most significant barrier and facilitator to physical activity, respectively. Motivation was found to be an internal influencer of physical activity behavior especially in the absence of perceived barriers. It is interesting that an internal factor impacting physical activity emerged as a theme in a study designed to examine solely external factors. The magnitude of the impact of motivation on behavior should be researched further, specifically within the African American community of similar SES backgrounds. Results from this study suggest that the degree of impact motivation has on behavior is magnified when perceptions of SES barriers are low.

### **Study Limitations**

This study is not without limitations. Recruitment was done at sites where elective cosmetic services were offered. African American salons and barbershops are facilities where the target population is conveniently accessible. These sites were chosen due to the low population of African Americans in Oklahoma. This recruiting method may have influenced the sample to be homogenous in regard to SES, based on the financial ability to receive salon and barber services. Among the sample, 80% were employed and 93% did not receive government assistance. Subsequently, there was an underrepresentation of low-income African Americans. The experiences of moderate to high-income African Americans may be different than those identifying as low-income. This potentially impacts the interpretation of the findings from this research.

Additionally sampling was done in the two counties in Oklahoma with the highest African American populations. These counties are also locations of military bases. Many participants detailed having access to free resources for physical activity. These resources were sometimes directly related to an affiliation with military service (i.e. retired service member, spouse of service member, or government employment). Military involvement was not mentioned enough to be classified as a theme, but may have influenced other themes in the study. For example, the theme that reflected sufficient access to environmental resources for physical activity. This impacts the interpretation of results because African Americans not affiliated with military service may not have the same degree of access to these free resources for physical activity.

### **Recommendations for Future Research**

Future researchers should work to diversify the sample of African Americans as much as possible, especially based on socioeconomic status. Recruitment should be done in ways that allow low-income and moderate to high-income African Americans to be represented. This can potentially increase the validity of the results.

Future researchers should investigate the relationship between primary care physicians and African Americans, specifically regarding physical activity. Research documenting factors that impact African Americans' respect for and motivation to comply with healthcare providers can help build strong relationships between primary care physicians and African Americans. This is necessary to promote healthy lifestyles and decrease CVD disease within this population.

The relationship between community engagement and African Americans' health should be further investigated. Specifically, what factors encourage participation in

culturally tailored community physical activity events, and the impact participation has on longitudinal physical activity behavior. African Americans who choose to participate in African American community wellness programs and initiatives would be information-rich sources for gaining an in-depth understanding of these experiences. Finding from this type of research could potentially inform the development and design of culturally tailored community programs that positively influence social cohesion and health.

Findings from this research revealed interesting dynamics between motivation, SES, and SDoH perceptions. Results from this study suggest that within this population motivation is a more significant determinant of behavior when SES is high and SDoH barrier perceptions are low. The degree of the impact of motivation on physical activity within the African American community should be researched further. However, research evaluating the relationship between motivation, SES, and SDoH barrier perceptions can benefit everyone. The following research questions should be considered:

- i. To what degree does motivation impact behavior when barrier perceptions are low, in low SES individuals?
- ii. To what degree does motivation impact behavior when barrier perceptions are low, in high SES individuals?
- iii. To what degree does motivation impact behavior when barrier perceptions are high, in low SES individuals?
- iv. To what degree does motivation impact behavior when barrier perceptions are high in high SES individuals?

## **Health Promotion Practice**

### Targeting Economic Stability

Although participants listed Economic Stability as a facilitator to physical activity it was also listed as the most significant barrier to physical activity. That is, the sample described beliefs that SES facilitates physical activity by providing resources, yet, employment duties impede physical activity due to long hours or by causing fatigue. The sample's perceptions about the impact of Economic Stability on physical activity seem to be paradoxical. However, another finding on economic perceptions was the belief that employment duties provided an opportunity to be physically active while working. Thus, future interventions could potentially target work-site physical activity interventions within this population to overcome economic conflicts to physical activity.

### Targeting Neighborhood and Built Environment

The sample identified barrier and facilitator beliefs about the environment. By providing convenient access to walking paths, sidewalks, parks, and trails, the environment acts as a facilitator to physical activity. Convenient access to environmental resources was also listed as the most significant facilitator to physical activity. Participants listed weather as an environmental barrier to physical activity. These beliefs cause the sample's most significant facilitator to physical activity to be subjected to weather conditions. Climate controlled environments for physical activity can be used as a means to overcome environmental barriers. In order to promote continuous physical

activity behaviors within this population future interventions should focus on coping methods to overcome inclement weather.

### Targeting Motivation

Patterns of describing motivation as an influential determinant of behavior was documented. Motivation was described as a determinant of physical activity behavior most frequently in participants expressing perceptions of having no barriers to physical activity. Expression of having no barriers were frequently coupled with statements about having plenty of resources to perform physical activities. Participants described resources coming from employment or SES. These findings suggest that external factors (i.e. SDoH) are potentially less influential on behavior than internal factors (i.e. motivation) in individuals who do not self-identify as low-income. Future interventions targeting African Americans of similar SES should target motivation in addition to relevant SDoH when promoting physical activity.



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## Appendix A: Demographic Questionnaire

### DEMOGRAPHICS

1	What is your current age? ____ Gender Identity _____ (optional) Height _____ (optional) Weight _____ (optional)
2	What is your race/ethnicity? Please check all that apply. <ul style="list-style-type: none"><li>• White ____</li><li>• Black or African American ____</li><li>• Hispanic ____</li><li>• Asian ____</li><li>• Other ____</li></ul>
3	What is the highest level of education you have completed? <ul style="list-style-type: none"><li>▪ Less than high school diploma ____</li><li>▪ High school diploma or GED ____</li><li>▪ Some College ____</li><li>▪ Vocational/Career College ____</li><li>▪ Bachelor's degree ____</li><li>▪ Master's degree or above ____</li></ul>
4	Do you have a primary care physician? <ul style="list-style-type: none"><li>▪ Yes ____</li><li>▪ No ____</li></ul>
5	Have you ever been diagnosed with heart disease? Please describe. <ul style="list-style-type: none"><li>• High blood pressure</li><li>• Cardiac arrest</li><li>• Congestive Heart failure</li><li>• Stroke</li><li>• Coronary artery disease</li><li>• Other heart-related condition</li></ul>
6	Do you currently receive food, housing, childcare, or healthcare assistance (i.e. Soonercare or Medicaid) from the government? <ul style="list-style-type: none"><li>▪ Yes ____</li><li>▪ No ____</li></ul>

- 
- 7 Can you tell me what type of PA you do throughout the week?
- How often do you get moderate intensity PA?
  - How often do you get vigorous PA?
  - Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

- 
- 8 The 2008 Physical Activity Guidelines states that adults should get:
- 2 hours and 30 minutes of moderate-intensity physical activity (i.e. brisk walking or bicycling) per week
- OR
- 1 hour and 15 minutes of vigorous-intensity aerobic physical activity (such as jogging or swimming laps) per week.

Over the past month have you met these physical activity recommendations?  
Please explain.

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## Appendix B: Question Path

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### INTERVIEW PURPOSE

The purpose of this interview is to learn about your personal experiences with physical activity.

Thank you for participating in this interview with me. I am interested in learning about your experience. There are no wrong answers to any of these questions so please feel free to speak openly. You may ask me any questions you would like at the conclusion of this interview. In order to have an uninterrupted interview please turn off your phone and other devices. Before we begin, do you have any questions for me?

Now we will begin the interview.

The 2008 Physical Activity Guidelines states that adults should get:

2 hours and 30 minutes of moderate-intensity physical activity (i.e. brisk walking or bicycling) per week

**OR**

1 hour and 15 minutes of vigorous-intensity aerobic physical activity (such as jogging or swimming laps) per week.

For the purpose of this interview physical activity (PA) refers to this recommendation.

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### NEIGHBORHOOD AND BUILT ENVIRONMENT

1	Can you describe your neighborhood to me? <ul style="list-style-type: none"><li>▪ Structure</li><li>▪ Type of housing</li><li>▪ Public spaces</li></ul>
2	Can you describe what it would be like to perform PA around your neighborhood? <ul style="list-style-type: none"><li>▪ What makes it hard perform PA in your neighborhood?</li><li>▪ What makes it easy to Perform PA in your neighborhood?</li></ul>



- |          |  |
|----------|--|
| <b>3</b> | <p>Now let's think about the community around your neighborhood in a larger context. What type of recreational facilities are nearby?</p> <ul style="list-style-type: none"> <li>▪ Parks</li> <li>▪ Gyms</li> <li>▪ Running/biking trails</li> </ul> |
| <b>4</b> | <p>Can you tell me about how often you go these community places to engage in physical activity?</p> <ul style="list-style-type: none"> <li>▪ What makes it easy to go?</li> <li>▪ What makes it hard to go?</li> </ul>                              |

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## SOCIAL AND COMMUNITY CONTEXT

- |          |   |
|----------|---|
| <b>1</b> | <p>Tell me about your experience with engaging in community physical activity events.</p> <ul style="list-style-type: none"> <li>• Marathons</li> <li>• Fun runs/mud runs</li> </ul>  |
| <b>2</b> | <p>Sometimes members of the community come together to promote healthy habits, or raise awareness about diseases. For example, in Oklahoma we have the Oklahoma City Memorial Run, the St. Jude Walk/Run to End Childhood Cancer, and the 2018 Central Oklahoma Heart Walk.</p> <p>Based on your experience, can you describe a time when members of your community came together to participate in an event like this?</p> |
| <b>3</b> | <p>Can you tell me about how often you engage in PA with the people in your community?</p> <ul style="list-style-type: none"> <li>▪ What makes this easy to do?</li> <li>▪ What makes this hard to do?</li> </ul>   |

---

## HEALTH AND HEALTHCARE

- |          |  |
|----------|--|
| <b>1</b> | <p>How would you describe your general health? How does this influence your PA?</p> <ul style="list-style-type: none"> <li>▪ Good health</li> <li>▪ How does this influence PA performance?</li> </ul> |
| <b>2</b> | <p>Can you tell me about any health conditions that affect your physical activity?</p>   |

	<ul style="list-style-type: none"> <li>• Have you visited a doctor for these conditions?</li> <li>• How have they made it harder/easier to exercise?</li> </ul>
3	<p>How frequent are your doctor's appointments?</p> <ul style="list-style-type: none"> <li>▪ How has healthcare influenced physical activity in your life?</li> </ul>
4	<p>What does your physician recommend to you regarding PA?</p> <ul style="list-style-type: none"> <li>• How often do they ask you about your PA?</li> <li>• Do they recommend the CDC guidelines?</li> <li>• Does your physician's advice make it easier or harder to exercise?</li> </ul>

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## ECONOMIC STABILITY

1	<p>Can you tell me about what type of work you do to make a living?</p> <ul style="list-style-type: none"> <li>▪ Type of labor <ul style="list-style-type: none"> <li>○ Facilitate PA?</li> <li>○ Impede PA?</li> </ul> </li> <li>▪ Time spent working <ul style="list-style-type: none"> <li>○ Facilitate PA?</li> <li>○ Impede PA?</li> </ul> </li> <li>▪ If not employed, ask about nontraditional employment lifestyle</li> </ul>
2	<p>How do you incorporate PA into your work/non-work lifestyle?</p> <ul style="list-style-type: none"> <li>○ What makes this easy to do?</li> <li>○ What makes this hard to do?</li> </ul>
3	<p>How does your financial situation influence your ability to exercise?</p> <ul style="list-style-type: none"> <li>▪ Why/How does this make it easier or harder to exercise?</li> </ul>

---

## ENDING QUESTIONS

- |          |   |
|----------|---|
| <b>1</b> | Of everything we talked about, which of these factors makes it the most difficult for you to engage in physical activity?<br>Of everything we talked about, which of these factors makes it easiest for you to engage in physical activity? |
| <b>2</b> | Are there any other things that you can think of that impact your physical activity?  |
| <b>3</b> | Do you have any questions for me?   |

## Appendix C: Code Book

### Neighborhood and Built Environment

Short code	Code	Participant References to...
Description neighborhood	Description of neighborhood	Participant describes area they live in terms of structures, type of housing, public spaces
Description PA	Description of what it would be like to perform physical activity in neighborhood	Describe what they would do within neighborhood and the context
Other Facilitators	Facilitators that don't fall into natural or built environment	Friends going, in military
Other Barriers	Barriers that don't fall into natural or built environment	Crowds at the gym, lazy not motivated
Built Env Facilitators	Built Environment facilitators to physical activity	Sidewalks, paths, local gym, playground
Natural Env Facilitators	Natural Environment facilitators to physical activity	Green spaces, nice weather,
Built Env Barriers	Built Environment barriers to physical activity	Traffic, lack of sidewalks, etc.
Natural Env Barriers	Natural Environment barriers to physical activity	Weather, allergens, bugs,
Description Safety	Description of Safety	Participant describes safety of neighborhood
Safety Facilitators	Safety facilitators to physical activity	Safe neighborhood, quiet, low crime
Safety Barriers	Safety barriers to physical activity	Crime, dogs,

## Social and Community Context

Short code	Code	Participant References to...
Engage in community events	Description of experience engaging in community events	Participant describes events they have or have not been involved with (answers to first and second community question)
Facilitators community events	Why they participated, what made it easy	Friend had disease, supporting others, job/group experience
Barriers community events	Why didn't participate, what made it hard	Didn't know, wasn't advertised, no time, not interested

## Health and Healthcare

Short code	Code	Participant Reference to
General health	Description of general health	How their general health is, healthy, poor health, etc.
General health influence	How health influences physical activity	Participant description of how their general health impacts PA
Health conditions that affect PA	Health conditions that affect physical activity	Participant description of any conditions that impact their PA
Freq of doctor appt	Frequency of doctor's appointments	How often goes to the doctor
Physician Recommendations	What physician recommends regarding PA	Certain amounts of exercise, etc.
Rec impact on PA	Physician recommendation impact on PA	Follow doctor's advice/don't, etc.

## Economic Stability

Short code	Code	Participant Reference to...
Employment status	What participant does for work	Nurse, mechanic, stay at home mom,
PA Work Life	How physical activity is incorporated into work lifestyle	Manual labor, staying active at office jobs
Work facilitators	What about their job makes it easier to do PA	Job active in itself
Work barriers	What makes it harder to do PA	Caregivers, have to take kids, no time
SES facilitators	How does financial stability positively influence PA	Have enough money for gym, or treadmill
SES barrier	How does finances negatively impact PA	Not enough money for gym
SES no impact	Finances do not impact PA	No impact, relation

## Additional Codes

Short code	Code	Participant References to...
Most important facilitator	Of all facilitators, which most important	Whichever factor/s was most important
Most important barrier	Of all barriers, which most important	Whichever barriers were most important
Other impacts on PA	Description of other impacts on PA that weren't discussed	Attitude, Motivation, lifestyle
Motivation	Any mention of motivation or lack of	Laziness, motivation, "don't want to"
Military	Any reference to military	Living on base, military exercises, facilitators