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Social Media and Physical Activity Among African American College Women

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Walden University
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Abstract

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MS, Virginia State University, 2015

BS, Virginia State University, 2011

Dissertation Submitted in Fulfillment

of the Requirements for the Degree of

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Abstract

Among African American (AA) college women, physical activity (PA) is decreasing, with less than 20% participating in moderate-intensity cardio or aerobic exercise. Physical inactivity can lead to increased morbidity and mortality from chronic conditions. There is a need for more research on AA women's health practices to develop interventions that can lead to sustainable behavior change among this population. More than 70% of AA college women reported using some form of social media (i.e., Facebook, Twitter, Instagram, TikTok, and Snapchat) daily. Social networking sites (SNS) in particular can provide health information, advice, and an open forum for individuals with health concerns to garner motivation and support to adhere to recommended lifestyle changes, such as PA and weight control. However, there is little evidence of how SNS impacts young AA college women's health status and health behaviors. This quantitative study, guided by the theory of planned behavior, investigated 64 AA college women aged 18-25 using cross-sectional surveys to determine an association between SNS and PA participation. The logistic regression results indicated a statistically significant association between vigorous ($p = 0.000$, $p < 0.05$) and moderate ($p = 0.00$, $p < 0.05$) PA and SNS usage levels among AA college women aged 18-25. The findings revealed an opportunity to create social change among AA women by promoting SNS as effective tools to increase PA. Additionally, public health practitioners can use these study findings to inform the design of culturally tailored interventions that include theory-driven messaging and cues to action that encourage AA college women to be more physically active and achieve better health outcomes.

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Dedication

I dedicate this study to my mother, family, and close friends. Thank you so much for the encouragement and support during this journey. Most importantly, I want to thank God for strengthening and sustaining me to see this process through.

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First, I would like to thank my mother, family, and close friends. I want to thank you all so much for being understanding of my limited availability during this time. The strength and support each of you blessed me with truly helped me make it to the finish line.

Second, I would like to thank my chair, Dr. Kai Stewart, my committee member Dr. Jennifer Oliphant, and my URR, Dr. Chinaro Kennedy. Each of you contributed to this amazing journey in different ways, and I greatly appreciate all your guidance through this process.

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Chapter 1: Introduction to the Study

Introduction

Since their inception nearly 15 years ago, social networking websites such as Facebook, and newer networking websites such as Twitter and Instagram, have fostered a new approach to social interaction. Facebook alone has expanded to include over 500 million active users, both children and adults (Rajani et al. 2011). As a result, these networks have had a considerable impact on lifestyles today, including a change in interpersonal communication (Subramanian, 2017). Despite the now global use of social networking websites, there has been little research that focuses on how this phenomenon may impact health.

According to Rajani et al. (2011), multiple factors support why social networking may be health-promoting. Internet-based social networking eliminates geographical barriers and facilitates communication between people with common interests instead of relationships originating from convenience. Other factors, such as time zones, work schedules, and illness, are eliminated as contributors to social isolation. It is now not uncommon for individuals to have networks that number in the hundreds. Social networking can also provide health information and advice and allow people with health concerns to join virtual groups designed to promote motivation for adhering to recommended lifestyle changes, such as weight loss, and foster a sense of belonging.

In contrast, Kraut et al. (1998) offered preliminary evidence that social networking may expand social circles at the expense of the quality of a person's social interactions, resulting in an increased sense of social isolation. Specifically, the

convenience of social networking sites (SNS) can make individuals more prone to engage their friends superficially or merely monitor their activities via the internet. Several research articles provide arguments for both positive and negative attributes of SNS utilization (Ajibade, 2011). However, there is little research that examines how SNS impacts health and health behaviors in specific populations.

According to Florez et al. (2018), social support and social networks can highlight aspects of social relationships associated with health-promoting behaviors, including physical activity (PA) and weight. The relationship between social support, social networks, PA, and obesity among African Americans (AAs) has been examined in several studies. Flórez (2018) conducted a cross-sectional study with 799 AA men and women living in two low-income neighborhoods in Pittsburgh, examining structural and functional aspects of social relationships. Study variables were social isolation, social network size, diversity, and perception of social support for PA from friends and family. The researcher reported that greater social isolation significantly increased moderate to vigorous PA, and network diversity was significantly associated with reduced moderate to vigorous PA (Flórez et al., 2018). The findings suggest that the perception of social support has a negative impact on AA participation in PA.

While previous research emphasized the effects of social support on facilitating PA, it is also possible that a lack of social network members perceiving PA as a normative behavior may contribute to low rates of PA in AA women. Less than half of AA adults (42.4%) meet the federal PA guidelines compared to 52.9% for European American adults (Ward et al., 2016). An even smaller percentage of AA women (13.6%)

achieve recommended PA levels, representing one of the lowest prevalence for any race and sex demographic group (Office of Minority Health [OMH], 2017). A study conducted by Jemmott and Zhang (2019) concluded that creating PA as a normative behavior within AA women's social networks may be an effective way to establish potentially sustaining PA in the long term. Young adult AA are heavy users of social networking technologies. In 2013, 96% of AA aged 18 to 29 used an SNS of some kind. Ajibade (2011) reported that AA college women who live on campuses have greater access to online social networks than young AA women who are not enrolled in college or living on campus. The Pew Research Center (2018a) reported that 72% of AA college women use at least one SNS such as Facebook, Instagram, Twitter, or Snapchat.

Additionally, the OMH (2017) stated that more than 30% of AA college women are not physically active. Therefore, understanding how online social networks can influence behavior change can bridge essential gaps in how technology can intervene in health among underserved populations. The purpose of this study is to determine whether there is an association between AA college women's SNS utilization and their PA participation. This chapter provides insight into the study background, statement of problem, and purpose. Additionally, the chapter includes the study research questions, theoretical foundation, and rationale.

Background

A lack of adequate PA among young AA women remains a serious public health challenge. .Researchers indicate that 40% of AA college women aged 18-25 report zero days of aerobic exercise for at least 20 minutes (American College Health Association,

2017). Using data from the American College Health Association, Carter (2012) reported that obesity among college women has increased from more than 25% in 2006 to more than 29% in 2011.

The Pew Research Center (2017) stated that more than 50% of AA college women reported using one SNS. In a study by Huang (2007), college women aged 18-25 reported two days of aerobic exercise per week on average. The American College of Sports Medicine recommends at least 30 minutes for 5 or more days per week (American Heart Association, 2014). Nearly 40% of college women reported checking their Facebook and other SNS as soon as they wake up, and 28% reported checking their SNS even before getting out of bed (Pinyerd, 2013). When college women shared insight and feelings about SNS affecting their behavior, 53% stated that their effects were detrimental, while 28% noted that SNS did not affect them at all (Pinyerd, 2013). SNS usage has increased tremendously from 89% in 2014 to 97% in 2016 (Shimoga et al., 2019). Time spent on social media has also doubled from 4.4 hours weekly in 2007 to 11.1 hours weekly in 2011 (Sandhya et al., 2019). AA college women are more likely than any other group to use SNS; 73% used it to connect to their peers (Sandhya et al., 2019).

Few evidence-based interventions are available to increase PA in this population. Fewer have leveraged mobile technologies, even though AAs are among the most avid users of social networking technologies (Jemmott & Zhang, 2019). There is little research available that examines SNS use as a facilitator or barrier to PA participation among AA college women. This gap in the literature reflects a dearth of knowledge and

understanding of the influence of SNS on PA participation in specific populations (Roblyer, 2010).

Statement of Problem

AA college women aged 18-25 are among the highest users of SNS. This population also has alarming rates of physical inactivity and obesity. Researchers suggest that PA can reduce morbidity and mortality resulting from obesity-related chronic conditions such as diabetes, cardiovascular disease, and stroke (CDC, 2017a). Eliminating barriers to PA and increasing participation in PA can lessen the impact of these conditions (CDC, 2017a). Few health interventions in the literature have demonstrated success with increasing involvement in PA among AA women. In this study I aimed to determine if the use of technology through SNS influences participation in PA among the study population.

Virginia has the 29th highest obesity rate in the nation (Trust for America's Health [TFAH], 2017). In 2016, 18.2% of adults in Virginia within the 18-25 age group were considered obese (TFAH, 2017). However, within the same age group, 39.4% of AA women were deemed overweight compared to 27.3% of white women (TFAH, 2017). In addition, the Centers for Disease Control and Prevention (CDC, 2017c) reported that 40% of young adults in Virginia participated in at least 150 minutes of moderate-intensity PA per week. However, less than 25% of AA adult women aged 18-25 in Virginia participated in at least 150 minutes of moderate-intensity PA per week (CDC, 2017a).

In the United States, 80% of AA women are overweight or obese, compared to 60% of white women (CDC, 2017b). Identifying factors that promote or inhibit PA among AA women during young adulthood could be the key to effectively addressing obesity in this at-risk population (CDC, 2017a). There is limited research available that focuses on how SNS utilization may influence PA among young adult AA women.

In this study I examined the relationship between SNS usage and routine PA among AA colleges in Virginia. Having greater insight into how online social networks may influence behavior change can show how public health practitioners can use technology to design health interventions for AA college women.

Purpose of the Study

The purpose of this quantitative research was to investigate if the use of social media, specifically SNS, is associated with participation in PA among AA college women aged 18-25 in Virginia. Empirical evidence indicates that several factors can influence a person's decision to be physically active (Cavallo et al., 2012). Guided by the theory of planned behavior (TPB), I aimed to provide insight into how the use of SNS impacts the study population's PA participation. This study's independent variables of interest included SNS utilization, social connectedness, time spent on SNS, and perceived weight control. The dependent variable was participation in PA. In addition, I analyzed variables such as living arrangement, age, perception of health status, and education.

Research Questions and Hypothesis

The following research questions were derived from the current literature available on AA college women aged 18-25. Each research question listed below

provided more insight and support to the overall study question: Is there an association between SNS utilization and PA participation, among AA college women aged 18-25?

RQ1: What is the association between SNS utilization (measured by number of days/minutes spent on social media) and vigorous PA (measured by number of days per week and number of minutes by day) among AA college women aged 18-25?

$H_0$1: There is no statistically significant association between SNS utilization (measured by number of days/minutes spent on social media) and vigorous PA (measured by number of days per week and number of minutes per day) among AA college women aged 18-25.

H_a1: There is a statistically significant association between SNS utilization (measured by number of days/minutes spent on social media) and vigorous PA (measured by number of days per week and number of minutes per day) among AA college women aged 18-25.

RQ2: What is the association between SNS utilization (measured by number of days/minutes spent on social media) and moderate PA (measured by number of days per week and number of minutes by day) among AA college women aged 18-25?

$H_0$2: There is no statistically significant association between SNS utilization (measured by number of days/minutes spent on social media) and moderate PA (measured by number of days per week and number of minutes by day) among AA college women aged 18-25.

H_a2: There is a statistically significant association between SNS utilization

(measured by number of days/minutes spent on social media) and moderate

PA (measured by number of days per week and number of minutes by day)

among AA college women aged 18-25.

RQ3: What is the association between time spent on SNS (measured by number

of days/minutes spent) and perceived level of PA (measured by days per week

and minutes per day) among AA college women aged 18-25?

H_03: There is no statistically significant association between time spent on

SNS (measured by number of days/minutes spent) and perceived level of PA

(measured by days per week and minutes per day) among AA college women

aged 18-25.

H_a3: There is a statistically significant association between time spent on SNS

(measured by number of days/minutes spent) and perceived level of PA

(measured by days per week and minutes per day) among AA college women

aged 18-25.

RQ4: What is the association between social connectedness, (measured by social

connectedness score scale) and vigorous PA participation (measured by days per

week and minutes per day) while controlling for academic level and age among

AA college women aged 18-25?

H_04: There is no statistically significant association between social

connectedness (measured by social connectedness score) and vigorous PA

participation (measured by days per week and minutes per day) while

controlling for academic level and age among AA college women aged 18-25.

H_a4: There is a statistically significant association between social

connectedness (measured by social connectedness score) and vigorous PA

participation (measured by days per week and minutes per day) while

controlling for academic level and age among AA college women aged 18-25.

RQ5: Is there a mediating effect of perception of weight control (measured by

scale score) with the association between social connectedness (measured by scale

score) and moderate PA (measured by minutes per day/ days per week)

participation among AA college women aged 18-25?

H_05: There is no statistically significant mediating effect of perception of

weight control (measured by scale score) with the association between social

connectedness (measured by scale score) and moderate PA (measured by

minutes per day/days per week) participation among AA college women aged

18-25.

H_a5: There is a statistically significant mediating effect of perception of

weight control (measured by scale score) with the association between social

connectedness (measured by scale score) and moderate PA (measured by

minutes per day/days per week) participation among AA college women aged

18-25.

Theoretical Foundation

The TPB originated from the theory of reasoned action (TRA) in the late 1900s to predict an individual's intention to engage in a specific behavior (Nahavandi, 2014). The TPB is utilized to explain why community members participate in specific actions when they can exert self-control (Hackman & Knowlden, 2014; Nahavandi, 2014). A key component of this theory is behavior intent (Hackman & Knowlden, 2014; Nahavandi, 2014). TPB allows researchers to explain how attitude may influence behavior and the expected outcome (Nahavandi, 2014). TRA was added to the original theory to account for behaviors that are not necessarily under volitional control, perceived behavioral control (PBC; Hackman & Knowlden, 2014). The intention to perform a given behavior includes two factors, a person's attitude toward performing the behavior and subjective norms (Hackman & Knowlden, 2014).

A person's attitude towards a specific behavior tends to be a moderate predictor of behavioral intention. Subjective norms are considered social pressure to perform a specific behavior. Furthermore, it involves a person's beliefs about whether their significant others would approve or disapprove of a specific behavior (Hackman & Knowlden, 2014). A person's attitude toward a specific behavior would be the best moderate predictor because behavioral control can be measured.

PBC is the amount of control a person may feel they have over performing a specific behavior (Hackman & Knowlden, 2014). In contrast, some behaviors are out of a person's control, which would lead to a person being unable to have an option for a specific outcome (Hackman & Knowlden, 2014). Actual behavior control directly affects

a behavior and influences behavior intention on a specific behavior (Fishbein & Yzer, 2006; Hackman & Knowlden, 2014).

There are three critical determinants of a person's intentions and behavior: (a) a person's attitude toward performing the behavior, which includes a person's beliefs (e.g., positive, or negative) about the behavior; (b) perceived norms, which include the perception of those with whom the person interacts closely with; and(c) self-efficacy, which involves a person's understanding that they can perform the behavior under a variety of circumstances (Hackman & Knowlden, 2014). Each determinant can assist researchers with understanding why AA female college students may be less physically active.

Zhang et al. (2015) reported a study that aimed to explore the effects of social support from college students' contacts on SNS on their intention to participate in leisure-time physical activity (LTPA). The researchers in this study used the TPB as their theoretical foundation to better answer their proposed research question. Within this study, researchers analyzed a total of 439 surveys distributed via email to undergraduates at a large Midwestern university in the fall of 2011 (Zhang et al., 2015). Researchers conducted both descriptive and mediating effects analyses on LTPA and SNS. After performing the analysis, researchers reported an indirect effect on intention through affective attitude, instrumental attitude, and PBC (Zhang et al., 2015). Overall, these results reported that social support of LTPA from contacts on SNS might not contribute to students' LTPA intentions unless both their PBC and attitudes change. TPB can be a

theoretical foundation to understand better college students' behavior and attitudes towards SNS and PA.

If a participant has a negative experience with a behavior, then they will be less likely to participate in it. Migle et al. (2019) conducted a study using the TPB to understand better physical fitness perception among 3,284 adolescents aged 11-19 years. A questionnaire was administered, which addressed lifestyle, PA, and physical fitness perception. After conducting the study, researchers concluded that adolescents who demonstrated positive PA perceptions were 3 times more likely to participate in physical fitness activities (Migle et al., 2019). In Chapter 2 I discuss TPB in further detail.

Nature of Study

This study was a quantitative design because the research objective was to determine an association between SNS utilization and PA participation. This study incorporated a cross-sectional design using an online survey. The cross-sectional design requires that the data collection only occur once (Creswell, 2014; Shi & Johnson 2014). SurveyMonkey, an electronic survey platform, was used to collect the data. AA college women aged 18-25 in the Virginia area participated in data collection through surveys. Using a cross-sectional design was most appropriate because it provided insight into how the use of SNS was associated with AA college women's participation in PA. In Chapter 3, I describe the process for conducting a correlational statistical analysis.

Rationale

Belanger & Patrick (2018) reported that young women often develop health behaviors in college that continue into adulthood. For example, if a person is less

physically active in their younger adult years, then they will be more prone to continue this behavior in their adulthood. Horacek et al. (2016) reported that more than 40% of AA college women are not participating in vigorous PA. A study by Joseph et al. (2017) reported that lack of social support potentially influenced AA women's rate of participation in PA. Social support can be a common motivational factor when seeking to alter a person's behavior (Coreil, 2009; Shi & Johnson, 2014).

Kim (2014) conducted a study that examined social support using Facebook because a younger adult population mostly uses it, which is the strongest predictor. The researcher reported that those who used Facebook for social support had a negative life satisfaction, causing them to be less physically active (Kim, 2014). Life satisfaction is how, in general, a person feels about life (i.e., pleased or unpleased). Those who have a negative life satisfaction are unpleased in their view of life. However, those who have a positive life satisfaction are happy. The findings in this study revealed AA college women aged 18-25 who were heavily into social media did have negative life satisfaction. Social connectedness is one of the main factors for SNS utilization. I discuss SNS and PA further in chapter 2.

In this study I aimed to determine if there is an association between SNS utilization and PA with the study population. I also sought to explore the influence of SNS as a contributor to PA.

Definition of Terms

Several terms and operational definitions for this study are listed below.

Obesity: An abnormal or excessive fat accumulation that presents a risk to health. A crude population measure of obesity is the body mass index (BMI), a person's weight (in kilograms) divided by the square of their height (in meters; World Health Organization [WHO], 2018).

Social networking site (SNS): Web-based service that allows individuals to construct a public or semipublic profile within a bounded system, articulate a list of other users with whom they share a connection, and view or traverse their list of connections and those made by others within the system (e.g., Facebook, Twitter, Snapchat, Blogs, Myspace, WhatsApp, YouTube, and Pinterest; Boyd & Ellison, 2007; Nguyen, 2013; Pew Research Center, 2018a).

Living environment: For this study, residing on a college campus, campus-sponsored housing, or off-campus (Bircher & Kuruvilla, 2014; Coreil, 2009; Tiwari et al., 2015).

Physical activity (PA): Any bodily movement produced by skeletal muscles that requires energy expenditure (includes exercise and other activities such as playing, working, active transportation, house chores, and recreational). Subsequently, *physical inactivity* is the lack of physical activity (WHO, 2018).

Socioeconomic status: The social standing or class of an individual or group. It is a combination of education, income, and occupation (American Psychological Association, 2020).

Social Connectedness: The quality and number of connections a person has with other people in a social circle of family, friends, and so forth. (Bailey et al., 2018; Coreil, 2009).

Social support: Three significant categories of emotional, instrumental, and informational support (Coreil, 2009; Li et al., 2015). Emotional support refers to assisting people with feeling loved and cared for and a sense of self-worth. Instrumental support refers to helping with tangible items such as money and transportation. Lastly, informational support refers to providing information and guidance on a situation.

Body mass index (BMI): A person's weight in kilograms divided by the square of their height in meters. A high BMI can be an indicator of an increased amount of body fat. BMI can be used to screen for weight categories that may lead to health problems, but it is not diagnostic of the body fatness or health of an individual (CDC, 2018). If a person's BMI is 18.5 to < 25, it falls within the normal weight range (CDC, 2018c). If a person's BMI is 25.5 to < 30, it falls within the overweight range (CDC, 2018c; WHO, 2018). If a person's BMI is 30.0 or higher, it falls within the obese range (CDC, 2018c; WHO, 2018).

Perception: A way of understanding or interpreting something, a mental impression (Migle et al., 2019).

Assumptions

For this study, I assumed that AA college women were willing to volunteer and participate in the study. I thought that the study participants would complete the survey with transparency and honesty. I expected that the study population was interested in

participating in the study. Lastly, I anticipated that participants would understand that the procedure is anonymous and that I would respect their privacy during the data collection process.

Scope and Delimitations

The scope of this study included AA college women who use social media, specifically SNS. Participant criteria was limited to AA college women living in Virginia, attending a university, aged 18 to 25, and living on or off-campus. In Chapter 3, I discuss the study site, statistical findings, and implied social changes.

Limitations

All chosen participants attended a college in Virginia, meaning the results are not generalizable to the entire AA women population. The participants may have been hesitant to complete the survey or disclose individual information about health behavior patterns or weight. The study population is AA college women aged 18-25 in Virginia because of their purportedly high obesity rates and lower PA participation. The study excluded college women of other races/ethnicities. This study population was limited to AA college women, the statistical findings can only be generalized to similar groups.

Significance

Belanger & Patrick (2018) reported that young women often develop health behaviors in college that live on throughout adulthood. Horacek et al. (2016) reported that more than 40% of AA college women are not participating in vigorous PA. Joseph et al. (2017) noted that the lack of social support for PA could potentially influence AA women's willingness to participate. Social support is known to influence a person's

behavior, especially if the person who is seeking advice is close to the person providing the input (Coreil, 2009; Shi & Johnson, 2014). SNS offers an opportunity for college students to receive information on different health conditions quickly and efficiently (Pinyerd, 2013). However, college women reported that their purpose for participating in SNS was to increase friendships, improve personal and social life, and gain more social connections to become more aware of healthy eating from different health groups (Pinyerd, 2013). The findings from this study reveal possible associations between SNS utilization and PA participation among AA college women aged 18-25.

Social Change Implications

The reported results of this study will have social change implications for the studied population. Due to the increase of SNS among AA college women, researchers and program planners can use this platform to examine trends in health behaviors better (PA participation) to develop interventions (i.e., health support groups). This may increase SNS usage, allowing AA college women also to become more knowledgeable about PA, ultimately leading to improving PA participation.

Summary

There is ample literature on the relationship between PA participation and obesity-related risk factors such as diet, stress, lifestyle, and BMI. However, there is a gap in the literature about the potential relationship between SNS utilization and PA participation. This chapter outlined the purpose, background, statement of the problem, research questions and hypotheses (null and alternative), and significance of conducting the study. Chapter 2 provides a synopsis of the current literature that highlights common

obesity risk factors and factors related to PA and social media utilization among AA

women.

Chapter 2: Literature Review

Introduction

This literature review explores SNS utilization, social connectedness, and factors related to PA among AA college women aged 18-25 in Virginia. Researchers reported that the prevalence of obesity has steadily increased among AA college women in Virginia, while PA participation has decreased among this specific population (Trust for America's Health, 2014a). Throughout this chapter, I examine several contributing factors that influence PA participation and obesity rates among AA women.

This literature review also highlights previous research on PA and SNS and identifies gaps in previous studies. I selected the TPB as the theoretical framework for the research because it was well suited to explain an individual's intention to engage in a specific behavior. A key component of TPB is behavioral intent (Hackman & Knowlden, 2014; Nahavandi, 2014). This theory assisted with describing factors associated with AA college women in Virginia, their use of SNS, and their participation in PA.

Literature Search Strategy

I used peer-reviewed articles, dissertations, seminal literature, and conference proceedings from several search engines such as Walden University Library, PubMed, and NCBI for this literature review. Within each search engine, I selected a date range of 2013 to 2020 to retrieve only new sources (i.e., published within the last 5 years). The key search terms included *obesity*, *PA*, *PA and SNS*, *AA college women*, and *obesity and AA females*. There is little published research about SNS utilization and PA participation, and consequently, any relationship is unknown

Theoretical Foundation

For this study, the TPB was used to understand behavioral control and intention potentially better among AA college women aged 18-25 in the state of Virginia. The TPB has three types of beliefs and several constructs: behavioral, normative, and control. For this study, I examined the following constructs as they relate to PA: (a) attitude toward engaging in SNS utilization and PA, based on AA women's beliefs (i.e., positive or negative) about the behavior; (b) perceived norms towards SNS utilization and PA participation, which include perceptions of those with whom AA college women interact closely; (c) self-efficacy towards SNS utilization and PA participation, which involves AA college women's perception that they can perform the specific behaviors under a variety of circumstances; and (d) PBC towards SNS utilization and PA participation, based on AA women's perception of the ease or difficulty of the involvement in SNS and PA. (Hackman & Knowlden, 2014).

Carter-Parker (2012) conducted a study using TPB and TRA to understand better the intention to engage in PA participation among AA women. The study population was middle-aged AA women, 30-65 years old. The specific aim of this study was to examine the correlation of subjective norm, PBC, and attitude towards PA in middle-aged AA women who were and were not being physically active. There is a lack of studies that use theoretical underpinnings to elucidate the difference between middle-aged AA women who are and are not physically active. Therefore, TPB and TRA were used to better understand AA women's behavioral intention and as a guide to measuring the following: attitude, subjective norm, and PBC. Using these constructs to understand better why there

is a lack of engagement was vital because it helped in culturally tailoring interventions to increase PA participation among AA women. Parker reported that attitudes towards PA and PBC for PA were the most statistically significant predictors of PA within the study. The combination of predictor variables accounted for 55.1% of the variance in PA. However, the correlation between subjective norms and PA was not statistically significant. These findings contrasted with other previously reported studies. However, since attitude towards PA was the most significant, researchers concluded that increasing information on the importance of PA participation could serve as the vehicle for improving attitudes towards PA. The more AA women understand the risk factors for decreased PA participation, such as increased use of SNS, potentially, the more they will be willing to alter their behavior, avoiding a health outcome such as obesity.

Lemoyne et al. (2016) conducted a study using TPB as the theoretical framework to analyze changes in PA behavior predictors among college women. The researchers administered a questionnaire to measure attitude, subjective norms, and perceived control towards PA participation. They also found that both attitudes and perceived control were the two key determinants correlating with PA behavior. After conducting the study, Lemoyne et al. recommended that schools can potentially improve participation over college years by offering academic courses on living an active, healthy lifestyle.

To examine factors impacting participation in PA among students at a college in Southern Kentucky, Aghenta (2014) conducted a study using the TPB to understand better attitudes, subjective norms, and PBC towards PA. By using the construct, the researcher was able to see that adopted behaviors can easily lay the foundation for future

behavior, causing the prevalence of inadequate health such as obesity to increase in the long run. After conducting this study, the researcher reported that environmental and interpersonal barriers, such as lack of time and energy, led college students to be less physically active. Furthermore, attitude and PBC towards PA significantly influenced the intention to participate in PA. In contrast, subjective norms did not show any significant influence in the behavior of PA. Overall, this study supported the Lemoyne et al. study, which discussed obesity and inadequate PA levels among college students.

After reviewing the studies conducted by Parker (2012), Lemoyne et al. (2016), and Aghenta (2014), readers were able to understand that the TPB is a common theoretical framework used among researchers when attempting to understand behavior intent. With the support found within different kinds of literature, I chose TPB as the best theoretical framework for my current study to understand the behavior of AA college women aged 18-25 as it relates to SNS and PA.

Literature Review Related to Key Variables and Concepts

For the study, the key variables of interest were attitude towards SNS, perception of weight control, time spent on SNS, social connectedness, and PA (e.g., minutes and levels). Figure 1 outlines how each independent and dependent variable aligns with the constructs of the TPB. It also displays the potential confounders for this study: age, education level, and living arrangement. The six boxes in the middle of the figure are theoretical constructs, behavior beliefs, normality beliefs, control beliefs, attitudes towards the behavior, subjective norms, and PBC. These constructs were used to explain an individual's intention to perform a particular behavior. Similar to the studies by Parker

(2012) and Hill (2013), the variables mentioned previously were chosen to understand potential new risk factors for PA participation among the selected population.

Figure 1

Literature Review Related to Key Variables and/or Concepts Diagram
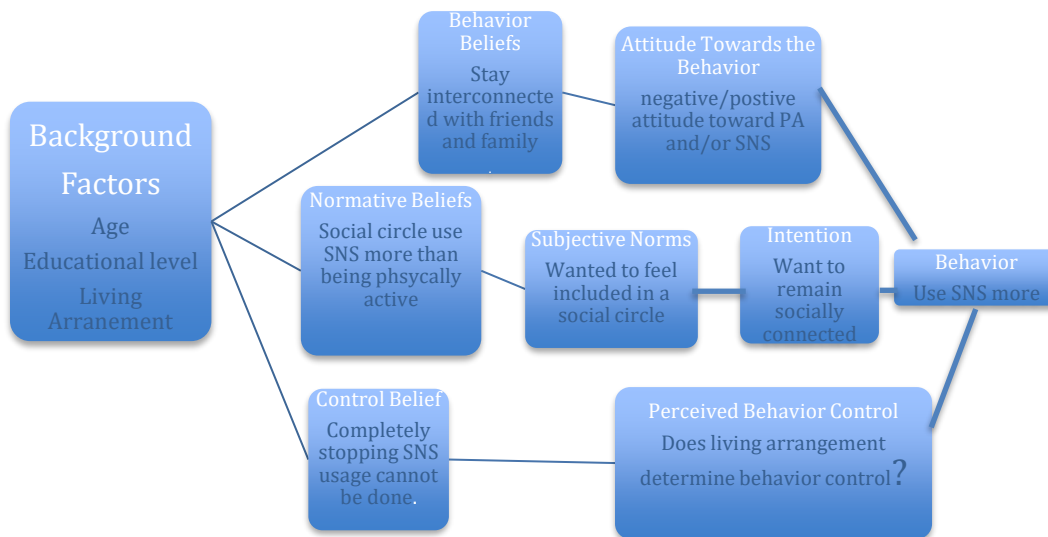
Obesity-Related Risk Factors Among Young African American Women

Individual health behavior that contributes to obesity includes eating habits, physical inactivity, level of education, and living environment (CDC, 2018c; Coreil, 2009;). Several research studies identified obesity-related risk factors across diverse communities. There is a need to conduct research that aims to understand better why obesity rates increase in specific populations. Researchers should explore different contextual factors (e.g., dietary habits, physical environment, cultural beliefs, interpersonal and intrapersonal factors) within smaller segments of communities such as AA college women.

Eating Habits

Balancing the number of calories consumed from foods and beverages with the number of calories the body uses from activities plays a role in preventing excess weight gain (CDC, 2018c; National Institute of Health, n.d.). The National Institute of Health's (n.d.) *Dietary Guidelines for Americans* emphasize eating whole grains, fruits, and vegetables to have a healthy diet.

Abraham et al. (2018) reported that, on average, the diet of AA college women aged 18-25 includes little fruits and vegetables and may be considered unhealthy. Also, the researcher noted that AA college women tend to eat more foods that are higher in fat and sugar (Abraham et al., 2018). AA college women are less likely to eat a healthy diet because of (a) lack of access to healthy food, (b) lack of money, and (c) lack of convenience (CDC, 2018c; Coreil, 2009; Horton, 2015). Deliens et al. (2014) suggests that individual factors (e.g., taste preference, self-discipline, time, and convenience), social networks, physical environment (e.g., availability and accessibly, appeal, and price of food products), and the macro environment (e.g., media and advertising) influence healthy eating choices among AA college students.

Abraham et al. (2018) reported that limited time and money could contribute to eating habits among AA college women. They tend to eat food that is readily available, accessible, and affordable. Additionally, Massa (2012) reported that among college women, limited access to nutritional information and nutritious foods influence poor eating habits. Limited access to healthy foods potentially contributes to college women

consuming more than 30% of their daily calories from fat, which exceeds the American Dietetic Association recommendation of no more than 30% per day.

     As a construct of the TPB, subjective norms help to understand better and measure behavior intent (Hackman & Knowlden, 2014). The construct suggests, if an individual's peers only eat fast food, then the individual will be more prone to engage in the same activity. Towne et al. (2017) suggest that social groups (e.g., peers) influence eating behaviors because individuals want to feel that they are not alone and that they are a part of a group. Researchers have reported that SNS can be both positive and negative when marketing healthy eating (Pew Research Center, 2018b; Towne et al., 2017). More than 65% of AA college women look to social media and SNS for nutritional information (Pew Research Center, 2018b). However, 28% of AA college women have trouble understanding dietary guidelines and how to follow them properly (Belle, 2017).

     There is some evidence that SNS may influence food intake among college students, including AA college women. Sixty-five percent of AA college women look to SNS for guidance on what and how to eat for a healthy diet (Pew Research Center, 2018b). SNS's are often used to influence eating choices; for example, fast food is advertised three times more than healthy foods through all types of media channels (e.g., SNS, television) (Abraham et al., 2018). The previous studies on eating patterns, peer influence, and obtaining nutritional knowledge through social media may have implications for the proposed research.

Physical Environment

A setting or physical environment is significant when understanding a complex health outcome (e.g., obesity; CDC, 2018c; Coreil, 2009). There is evidence to suggest that individuals living in lower-income communities are more prone to have poorer health outcomes because of their socioeconomic status (Coreil, 2009; Wilkinson & Pickett, 2010). Barriers to optimum health in lower-income communities are (a) lack of green spaces, (b) lack of access to healthy food, (c) high crime, and (d) lack of transportation (Coreil, 2009; Wilkinson & Pickett, 2010). There is evidence that AA women who have lower socioeconomic status and reside in under-resourced communities are more likely to experience poorer health outcomes (Coreil, 2009; Wilkinson & Pickett, 2010). David et al. (2016) examined risks and resources in a social environment stratified by race/ethnicity and influence health outcomes. The researchers found AAs to be three times more likely than any other race/ethnicity to live in a social environment that lacks resources (e.g., parks and healthy food markets) and high risk (e.g., high crime and drugs) (David et al., 2016).

Fast food is also marketed more in lower-income communities, contributing to their desire to eat more of it (Horton, 2015). Fast food is cheaper, which increases the likelihood that community members will eat it more frequently. Eating unhealthily and being unable to be physically active can potentially lead to a drastic increase in weight gain, resulting in a high BMI.

Fitzpatrick et al. (2016) investigated two Washington; DC communities inhabited by lower-income residents who are exclusively AA. These two low-income communities

have only one supermarket for every 70,000 inhabitants (Fitzpatrick et al., 2016). AA women who reside in similar communities have higher obesity rates because there is little access to healthy food to assist them with living a healthy lifestyle (Fitzpatrick et al., 2016).

Brewis (2016) conducted a study on eating behaviors among college students aged 18-25 living on campus compared to those living off-campus. Living on campus is considered a newly built environment with different socioeconomic factors contributing to health outcomes (e.g., obesity). Living on campus can be a significant transitional period for students, especially AA women aged 18-25 (Cardinal, 2011). Living on campus provides AA women more access to healthy foods and exercise equipment (Cardinal, 2011). Abraham et al. (2018) indicated that college students who had greater access to campus food than fast food were more likely to eat fruits and vegetables. However, making this major transition can also increase AA women's stress levels, causing them to eat more and not be physically active. Students who have more access to different technology have more opportunities to participate in SNS. AA women who lived on campus slightly altered their eating behaviors, such as eating slightly more fruits and vegetables (Brewis, 2016). However, AA women were still not fully meeting the recommended dietary daily intake.

Overall, AA college women who live on and off-campus need the same proper tools to alter their behaviors to improve their health. Brewis (2016) reported that the increasing workload of school and stress from transitioning is still causing AA women not to be physically active, both those who live on and off-campus.

Shaffer et al. (2017) examined the relationship between neighborhood and living environment and behavioral and fitness outcomes among 211 women and 234 men. After conducting the study, the researchers reported that both women and men who lived in an environment where they were more exposed to seeing others exercise within their neighborhood were more likely to be associated with these behavioral and fitness outcomes. However, women were slightly less likely to engage because of other responsibilities and beliefs (i.e., not wanting to sweat and household chores) (Shaffer et al., 2017). The study examined an individual's environment as a confounding variable because external factors can interfere with behavior intent among the study population.

Cultural Influence

Joseph et al. (2017) explored the hairstyle preference and hair care maintenance practices of AA women and PA engagement, uncovering reasons hair is a barrier for PA among AA women. Hall et al. (2013) published a study reporting that 38% of AA women surveyed avoided PA or exercise because of hair-related issues. Women who perceived hair as a barrier to PA were 2.9 times less likely to meet the national PA guidelines of 150 min per week for moderate-intensity activity (Joseph et al., 2017). Joseph et al. (2017) reported that specific characteristics, such as women's hair and body size and shape, are all features that influence how others treated women. For this study, the researcher collected data from focus groups with 23 sedentary and obese AA women. The three key themes that emerged within the study were (a) impact of perspiration on hair and hairstyle maintenance, (b) image and social comparisons, and (c) solutions to overcome hair-related barriers to PA (Joseph et al., 2017). Overall, researchers reported

that their study supported the findings previously reported. To help decrease the negative view of hair and PA, AA women should use more protective hairstyles such as braiding, locks, and natural hairstyles.

The findings from Belle (2017) and Joseph et al. (2017) support the notion that cultural behaviors, e.g., hair maintenance, appear to be associated with PA participation among AA women. Each study reported how perceived beliefs and attitudes about food choices and hairstyling contribute to willingness to participate in PA. The findings from these studies, as related to cultural patterns among AA women, may have implications for the current research examining PA participation.

Factors Associated With Physical Activity Among Young African American College Women

Physical Activity Practices Among African American College Women and African American Women in the General Population

The American Heart Association identifies physical inactivity as a term used when community members do not meet the recommended regular PA (Gonzalez et al., 2017). The recommended amount of PA is 30-60 minutes of aerobic exercise three to four times per week (American College of Sports Medicine, n.d.; CDC, 2018b). A researcher reported that both AA women in general and AA women in college have the lowest PA participation, which increases their rates of adverse health outcomes (e.g., obesity) (Joellen, 2015). AA women are more prone to not meeting the recommended PA requirements because of (a) lack of education, (b) lack of access to fitness centers, and (c) SNS utilization (Coreil, 2009; Joellen, 2015). In 2013, a research study in Virginia stated

that 40% of AA women exercise three or fewer days a week for at least 30 minutes (US Department of Health & Human Services, n.d.). Joellen (2015) reported that proper education might contribute to AA college women's attitudes towards PA participation. AA women with positive attitudes towards PA are more likely to participate in PA.

In contrast, AA women with unfavorable attitudes toward PA are less likely to participate in PA. The goal of the current study is to explore AA college women's attitudes toward PA and their behavioral beliefs. A person's behavioral beliefs will determine their attitude, resulting in their intention and engagement in the behavior (Hackman & Knowlden, 2014).

African American College Women and Non-African American College Women and Physical Activity

Poobalan (2012) conducted a study to explore PA behavior and influential factors, including attitude and motivational factors among AA women aged 18-25. Within this study, the researcher reported that AA women who were 18-22 years old were two times more likely to participate in PA than AA women who were 23-25 years old because of the different attitudes and motivating factors (Poobalan, 2012). The study suggests that personal appearance drove AA women who were 18-22 years old. However, as AA women age, their priorities changed, with their attitude towards PA participation (Poobalan, 2012). Older AA women focused on their appearance, but they were more dedicated to a successful future, which caused them to work more and have less time to participate in PA.

In contrast, white college women who were 18-21 years old were four times more likely to participate in PA than white female students who were 22-25 years old (Perrin & Anderson, 2019). Poobalan (2012) conducted a study that reported that 53.9% of white women got the recommended amount of PA because of their physical environment. The study findings suggest white women have more access to parks, fitness centers, and sidewalks (Poobalan, 2012). In contrast, AA college women continued to not meet the recommended PA guidelines because of less accessibility to parks and paths (Poobalan, 2012). Furthermore, AA women had a different attitude towards PA then white women. For example, AA women are less exposed to PA, potentially causing them not to view PA at a high importance level. However, white women were more exposed to PA, causing them to have a more positive attitude to participation and understanding the importance of making it a part of their daily lifestyle (Poobalan, 2012). After conducting the study, Poobalan (2012) recommended that to increase positive attitude among both younger and older college students, however more among the older generation, colleges and universities should increase health education activities, which educate on physical, mental, emotional, and social health. Such actions can include nutritional lessons, adapting to new environment workshops, and workshops on the importance of PA. There is a gap between AA women and white women having the ability, motivation, knowledge, and tools to getting the recommended amount of PA. Having access to fitness facilities is essential to be able to participate in PA. Researchers reported that AA women overwhelmingly live-in communities that (a) lack green spaces, (b) lack parks, and (c) lack opportunities for fitness (Coreil, 2009; Wilkinson & Pickett, 2010).

In contrast, white women are three times more likely to live in communities with access to fitness centers. Both AA and white college women aged 18-25 who live on campus have access to (a) fitness centers, (b) green spaces, and (c) parks, which allows them to engage in positive behavior (Cardinal, 2011). Cardinal (2011) conducted a study that examined PA and campus living and found that AA women who live on campus have a higher chance of meeting the recommended guidelines because of fitness centers (Cardinal, 2011).

Arredondo et al. (2016) conducted a study that examined PA among Latino/Hispanic young adults 18-50 years of age with diverse backgrounds. Within this study cohort, a total of 10,000 participants 238+were recruited from four urban areas: Miami, the Bronx, Chicago, and San Diego. Arredondo et al. (2016) reported that Hispanic/Latino adults were not meeting the 2008 Physical Activity Guidelines for Americans compared with non-Hispanic whites (33.4% vs. 47.6%, respectively). However, those of the Mexican American background did engage in high amounts of moderate to vigorous PA compared with AA and Non-Hispanic whites (45% vs. 20% vs. 35%, respectively). After conducting the study, the researcher reported that those Hispanic/Latino adults with different backgrounds (e.g., Mexican, Puerto Rican, Cuban, Central American, Dominican, and South American) had varying levels of PA participation. Puerto Ricans had the highest level of moderate to vigorous activity (55%) (Arredondo et al., 2016).

Yi et al. (2015) examined PA guidelines among 1,320 Asian American participants aged 18-60 years in New York. The levels of participation in PA among

Asian American young adults are lower than any other racial/ethnic group. Even though Asian Americans have a lower prevalence of obesity than other racial/ethnic groups, they are more likely to develop different adverse health outcomes such as hypertension and diabetes. Compared to their AA and white counterparts, Asian Americans had a higher percent body fat for the same BMI. After conducting the study, the researcher reported that Asian Americans were less likely to meet the recommended PA guidelines when compared to AA's living in NY (11% vs. 25%). Yi et al. (2015) stated that Asian Americans are less likely to meet PA guidelines than any other racial/ethnicity group because of cultural practices. Increasing PA among both Asian Americans and AA is a priority. However, when comparing Asian Americans to AA, the researcher stated that Asian Americans are more critical (Yi et al., 2015).

The findings from Arredondo et al. (2016) and Yi et al. (2015) support the notion that different factors contribute to PA participation among racial/ethnic groups. Each study reported how beliefs and attitudes about PA contribute to willingness to participate in PA. Even though Asian Americans are in more critical condition then AA's, it is still important to increase knowledge on PA among AA's because it can contribute to understanding how different cultures influence decision-making.

Intrapersonal Factors: African American College Women and Physical Activity

Lack of Time

Calestine (2017) conducted a study that examined the relationship between fitness measures (cardiovascular endurance, muscular endurance, flexibility, and body composition), PA, and academic outcomes in college students. This researcher conducted

a cross-sectional study that allowed college students to complete a one-time fitness

assessment and survey. This survey examined college students' PA and academic factors

(GPA, study habits, course load) (Calestine et al., 2017). After conducting the study,

Calestine reported a correlation between fitness, PA, and academic outcomes. In addition,

the researchers found that both hours of studying and social media use were positively

associated with body fat, and in contrast, the course load was associated negatively with

cardiovascular endurance.

　　　Furthermore, the study revealed that a higher GPA was associated with a higher

BMI, and a higher credit load was associated with less vigorous PA among college

students. It appears that college students made more time to focus on their studies than

being physically active.

Lack of Motivation

Researchers have identified numerous personal, environmental, and

social/cultural barriers to participation in fitness among AA women (Bopp et al., 2007;

Evans, 2009 Gaston et al., 2007). The AA community lacks fitness experience because

there are very few role models; the culture does not perceive exercise as a priority. In

addition, they have hair issues (e.g., exercise "messes up" their hair). Furthermore, AA

women generally perceive that they bear the burden of their families" more than white

women do, leaving little time for leisure-time activities (Evans, 2009; Etler et al., 2003).

Evan conducted a study that examined AA women's understanding of exercise and

exercise practices. Learning about AA women's beliefs and behavior will help

understand their motivation to want to exercise. Evan reported findings that were like

other studies conducted in 1995, whereas women stated that they did not need additional

exercise because they got enough exercise at work.". Other AA women said that they

never received advice from their health care providers to engage in any form of exercise.

Only five AA women reported receiving information from their health care providers to

participate in PA. These findings were similar to Eyler et al. (2003), who said an

association between high social support and higher levels of PA. Overall, receiving

motivation and knowledge from health care providers is needed to increase PA among

AA women.

Tiredness/Fatigue

Researchers have reported "tiredness" or fatigue as another barrier to activity. AA

women, in general, were having trouble balancing schoolwork, regular work, and

household duties (Boop et al., 2007; Evans, 2011;; Pekmezi et al., 2013). Pekmezi et al.

(2013) conducted a study to address the high rates of correlation of tiredness" and fatigue

with inactivity among AA women. There were eleven focus groups, with a total of 80 AA

women participants. After conducting the study, the researchers reported that their

findings corresponded with the current literature, stating that "tiredness" and fatigue

correlate to a lack of PA among AA women.

Lack of Knowledge

Walcott-McQugg et al., 2001, reported that lack of knowledge is a barrier for PA

among AA women. Furthermore, AA women are unaware of how much PA they should

perform to successfully achieve positive health benefits (Pekmezi et al., 2013; Wilcox et

al., 2005). Lastly, AA women lack proper knowledge of what constitutes PA or how to

use exercise equipment/machines at the gym, which results in not attempting to engage in PA (; Im et al., 2012; Wilcox et al., 2002). Wilcox et al. (2002) conducted a study that aimed to examine the perception of PA and PA barriers and enablers in AA women using six focus groups with a total of 42 AA women aged 19-51 years. Initially, AA women associated several undesirable outcomes with PA, such as appearing masculine and remaining heavy. After conducting the study, the researcher reported that some AA women have an incorrect view and interpretation of PA. The younger age group had different opinions and knowledge than older AA women. Without adequate knowledge about PA at a younger age, there is less chance that the same habits will translate to practices in later years.

Physical Appearance

Joseph et al. (2017) conducted a study that explored how the hairstyle preference and hair care maintenance practices of AA women can limit PA engagement. Hall et al. (2013) found that hair is considered a barrier to PA among AA women. The researchers reported that 38% of AA women surveyed avoided PA or exercise because of hair-related issues (Hall et al., 2013). Women who perceived hair as a barrier to PA were 2.9 times less likely to meet the national PA guidelines of 150 min per week for moderate-intensity activity (Joseph et al., 2017). Joseph reported that specific characteristics, such as women's hair and body size, and shape, are all features that influence how others treat women. For this study, the researcher collected data from focus groups with 23 sedentary and obese AA women. The three key themes that emerged within the study were (a) impact of perspiration on hair and hairstyle maintenance, (b) image and social

comparisons, and (c) solutions to overcome hair-related barriers to PA (Joseph et al., 2017). Overall, researchers reported that their study supported previously reported findings. To help decrease the negative view of hair and PA, AA women should use more protective hairstyles such as braiding, locks, and natural hairstyles.

Cultural beliefs around hairstyling and maintenance are the most frequently identified physical appearance concern among AA women (Harley et al., 2009; Im et al., 2012). AA women stated that they did not wish to engage in PA because they did not want to "sweat out" their hairstyle or because they perceived sweat as an irritant to their head/scalp. The cost and time associated with maintaining many AA hairstyles when being physically active appeared to compound this issue as study participants reported not having the time or monetary resources to maintain their hair professionally on a more frequent basis (Harley et al., 2009; Im et al., 2012).

The findings from researchers (Calesine, 2017; Evans, 2009; Pekmezi, 2013; Im, 2012, Joseph, 2010) all support the notion of intrapersonal factors (e.g., lack of time, lack of motivation, tiredness/fatigue, and physical appearance) potentially associated with PA participation among young AA college women. For each factor, each researcher provided information on how perceived belief and attitude contribute to participation in PA. These findings can potentially be related to the intrapersonal factors among young AA college women of the current study.

Interpersonal Factors: African American College Women and Physical Activity

Emotional (Social) Support

Emotional (social) support is the perception and actuality that one is cared for and is part of a supportive social network (Coreil, 2009; Browning, 2018). Social networks may potentially influence behaviors. When embarking on a new journey such as college, developing a group of peers with similar interests is essential (Coreil, 2009). A researcher reported that AA women that are a part of a group of peers who have a positive attitude towards PA would be more likely to increase their PA participation (Abraham et al., 2018). However, if a group has a negative attitude towards PA participation, then the chances of being physically active are low (Abraham et al., 2018). Having social support is important because it relieves stress and promotes the motivation to have a positive and healthy lifestyle. Unfortunately, when embarking on a new journey such as college, AA women are more prone to attract peers like them and their current lifestyle (Abraham et al., 2018).

Abraham et al. (2018) reported that AA women are three times more likely to connect with peers with similar interests because it makes them feel comfortable, better understood, and relatable to their past experiences. By doing so, they keep themselves in the same subjective norms and maintain the same behavior beliefs, resulting in the same behavior intent concerning TPB (David et al., 2016). Discovering new friends with a completely different background is extremely important when attending college, which AA college women tend not to grasp.

Abraham et al. (2018) reported that 25% of AA women venture out and meet new friends with entirely different backgrounds. Venturing out encourages AA college women to view life differently by assisting them with (a) living a healthy lifestyle, (b) grasping new subjective norms, and (c) potentially new beliefs. For example, AA women who have active peers are more prone to being physically active because of the peers motivating each other. Smith et al. (2017) reported that 37% of young women work out with peers. Working out with peers also increases education on PA and how to be physically active. PA participation exercises also involve any form of bodily movement produced by the skeletal muscles (WHO, 2018). Understanding the different factors that contribute to PA participation is vital to improving and increasing the behavior among AA college women.

Stress is an unmeasurable factor that can also be assisted with emotional (social) support and can potentially also contribute to PA participation (Coreil, 2009; Wilkinson & Pickett, 2010). Since AA women encounter several different stressors, this condition is potentially unmeasurable. For example, there is (a) socioeconomic daily and family stress, (b) environment and neighborhood stress, and (c) college stress (e.g., wanting to receive an "A" in class, wanting to be celebrated in life, no time to sleep, etc.) (AIS, n.d.).

Technology also contributes to stress because of SNS utilization, such as (a) having to answer emails and (b) having to stay connected with what is going on around campus (AIS, n.d.). AA women reported feeling like they are always connected to the world and unable to disconnect and simply have personal time (Shaffer, 2017). A researcher said that AA college women have an increased rate of having high stress levels

than any other race/ethnicity, potentially caused by different factors (Shaffer, 2017). High stress can also cause AA college women not to want to participate in PA, possibly caused by a bad attitude from a stress factor. In contrast, those who enjoy PA may be more likely to engage in PA because they may potentially feel as though it is a stress reliever (Coreil, 2009). Social support can relieve stress because AA women have someone they can talk to about their day and feel towards a situation.

Significance of Social Media Utilization Among Young African American College Women

African American College Women and Social Networking Sites

SNS is a web-based service that allows individuals to construct a public or semi-public profile within a bounded system (Boyd & Ellison, 2007; Raine, 2013; Knight-McCord et al., 2016). The use of technology, specifically SNS, has grown by more than 30 million users from 1995 until 2014 (Knight-McCord et al., 2016). Researchers report that different SNS technology such as Facebook, Myspace, Instagram, Snapchat, Twitter, Pinterest, Blogs, etc., have become the most popular tool among young college adults (Knight-McCord et al., 2016; Pew Research Center, 2018a). For example, 60% of AA female college students aged 18-25 reported using at least one SNS (Pew Center Researcher, 2018a). However, in general, 78% of AA women reported using at least one SNS (Pew Center Researcher, 2018a). Most AA college women aged 18-25 stated that they use SNS to create a personal profile, post what they are doing throughout their day, upload pictures, and send messages to friends and family (Pew Research Center, 2018a).

However, AA women generally stated that they use SNS to keep in touch with distant

family members (Pew Research Center, 2018a).

SNS is also used to develop professional networks by using LinkedIn to post-

professional resumes and interests (Knight-McCord et al., 2016). Pew Researcher Center

(2018b) reported that 24% of AA women use LinkedIn than 28% white women. The Pew

Research Center reported that SNS has become the latest online communication tool for

AA college women (Pew Research Center, 2018b). SNS has become a communication

platform because people from all around the world can connect. Public health

professionals also use SNS to quickly inform community members of significant

outbreaks and preventative measures (Pew Researcher Center, 2018b). SNS can be

viewed as a facilitator or barrier to PA, depending on how AA women and white women

use the tool within their day-to-day life. A researcher reported that SNS could increase

AA females' engagement outside the classroom, resulting in new and innovative ways of

learning daily tasks (Knight-McCord et al., 2016). Knight-McCord et al. (2016) reported

that AA college women aged 18-25 spend more than 10 hours online. More than 60% of

AA college women aged 18-25 state that they stay online longer than intended since there

is easy access to the internet (Knight-McCord et al., 2016). Rainie et al. (2011) reported

that college needs to become more aware that having more available access to

technologies, specifically SNS, can lead to overuse among AA college women. The more

AA female college students can better balance SNS use, actual social life, and PA

participation, the better their chance of improving their health outcomes.

Raine (2013) reported that Facebook is one of the most popular SNS to date, followed by Instagram, Linked In, and Snapchat. Raine found that 70% of AA college women aged 18-25 use Facebook, and 40% of AA college women use Instagram (Raine, 2013). However, only 69% of Hispanic female students use Facebook, and 50% use Instagram (Perrin & Anderson, 2019). Wang, Chen, and Lian (2011) reported that AA college women aged 18-25 spend 600 minutes a day on average on SNS. The study explored SNS use among college students aged 18-25 (Trent, 2017). A researcher reported that younger (18-21 years old) AA college women tend to gather information from Facebook and Instagram, 83% (Trent, 2017).

In contrast, older (22-25 years) AA college women tend to gather their information from Blogs, Twitter, and Pinterest, 33% (Trent, 2017). As a health professional, when sharing information, such as breaking news on a specific outbreak, it is essential to report the same information across all SNS to ensure that everyone receives the same message. Understanding which SNS is used the most is beneficial because it can help health professionals identify which SNS they should share.

Duggan et al., (2015) reported that Facebook was the most frequently used SNS among AA college women aged 18-25. Both AA women and Hispanic college women tend to use Facebook more than any other SNS because they can keep in touch more easily with friends and family worldwide (Pew Research Center, 2018a). Each SNS has different criteria; for example, Twitter only allows users to send short messages referenced as tweets about what they are doing, etc. (Raine, 213). Snapchat is a social media platform or application that allows AA college women to send photos that can

expire in one to ten seconds (Raine, 2013). A researcher reported that 92% of AA college women aged 18-25 use this software daily (Smith, 2011). As mentioned, each SNS has a different way of allowing AA women to keep in touch and gather news.

Overall, SNS utilization is continuously increasing among AA college women, AA women in general, and other college women. The current research study may potentially identify a new risk factor for PA.

Social Networking Site Networking Attitudes, Beliefs, and Practices among African American College Women

Social Networking Site Attitudes and Beliefs

Knight-McCord et al. (2016) reported that by 2008, 99% of AA college women aged 18-25 had at least one SNS account and were more prone to using SNS daily. Both AA college women and AA women, in general, tend to use more SNS since they potentially want to be more interconnected with their peers and loved ones around the world (Pew Research Center, 2018a). Knight-McCord et al. (2016) also reported that AA college women have a more positive attitude towards SNS since they can communicate and gather news more quickly and connect with different family members worldwide (Bopp et al., 2007). On the other hand, Knight-McCord et al. (2016) reported that 5% of AA college women negatively affect SNS. Those who reported having a negative attitude toward SNS may be caused by not receiving supportive feedback from online peers. (Knight-McCord et al., 2016).

Social Connectivity

Brown (2016) conducted a study at Boston University (BU) to investigate SNS use among college students aged 18-25. He reported that 60% of AA first-year students used at least three SNS a day for more than 2 hours compared to only 35% of AA upper-level students (e.g., fourth year) using at least two SNS a day for less than 2 hours (Brown, 2016). Brown suggests that first-year students have higher SNS utilization than upper-level students because they want to be more involved and gather information about campus life. The study found that female AA first-year students wanted to learn more about campus activities, become more socially connected with their peers, and understand their new campus. In comparison, upper-level students are more aware of campus life. In addition, they already have their group of peers that they connected with, resulting in them being potentially more focused on schoolwork and slightly less on SNS (Brown, 2016). However, likely overusing SNS in their younger college years, SNS may still possibly be a solid contributor to upperclassmen's current lifestyle. Overall, understanding the behavioral relationship of SNS is helpful because it increases awareness of why SNS utilization is increasing among AA college women. In addition, this behavioral path can also raise awareness about why PA participation decreases among AA college women aged 18-25.

The idea of perceived norms posits that individuals want to be accepted by peers and feel like a group. Williams (2017) states that more than 60% of AA college women aged 18-25 look to peers for guidance compared to only 40% of white women who look to peers for advice. A researcher reported that AA college women who associate

themselves with peers who are not physically active are also not physically active since they potentially want to be accepted within the group (Towne et al., 2017). In contrast, if AA college women associate themselves with physically active peers and have a positive attitude towards the behavior, they will develop the same attitude and behavior.

Health Information Seeking

Syn & Kim (2016) conducted a study that examined factors that influence AA college students' health information seeking and sharing activities on Facebook. After performing this study, the researcher reported that AA college women were willing to read and post health-related information on Facebook when the health topic was not sensitive (Syn & Kim, 2016). However, there are differences between professional sources and private sources as health information sources. Overall, the study participants considered SNS a proper media channel for AA college women to obtain health-related information.

Social Media Influence on Physical Activity among African American College Women

There is a gap within the literature regarding the potential influence SNS has on PA participation among young AA college women aged 18-25 in Virginia. Gaining a better understanding of how SNS is associated with PA participation is essential and can bridge a gap in obesity research that focuses on contributing factors.

Summary of Relationship Between Social Networking Sites and Physical Activity Participation

African American College Women, Social Networking Sites, and Physical Activity (Limited Information)

The literature review provides background information on obesity and how SNS can contribute to PA participation. However, there is limited information on AA college women's attitudes toward SNS, perceived social connectedness, and PA.

Summary

The current literature review explored how SNS utilization, attitude towards SNS, and perceived social connectedness may impact AA college women aged 18-25 in Virginia and their level of participation in PA. Chapter 3 discusses the methodology, population, sampling procedure, data collection, the analysis conducted for the current study.

Chapter 3: Research Method

Introduction

In the current study I investigated the relationship between AA college women in Virginia and their use of SNS, attitude towards SNS, perceived social connectedness, and PA. Additionally, I examined education level, perception of health status, environment, and type of SNS among the study population. This chapter describes the study target population, research design methodology, and statistical analysis procedure employed.

Research Design and Rationale

For the study I used a quantitative cross-sectional design to answer the research questions. The independent variables were the following: utilization of SNS, perceived social connectedness, and attitude and beliefs toward SNS. The dependent variable for the study was participation in PA. A confounding variable can influence and change the independent and dependent variables (Gerstman, 2015; Salazar et al., 2015). The following confounding variables were analyzed: living environment (i.e., on/off campus), age, race, and level of education.

The quantitative research approach allows the quantification of health problems by generating numerical data (Frankfort-Nachmias & Leon-Guerrero, 2015). Furthermore, quantitative data collection includes various forms or surveys (e.g., online surveys, paper surveys, mobile surveys, face-to-face, etc.; Frankfort-Nachmias & Leon-Guerrero, 2015). Simple linear regression analysis is useful to identify and explore a potential causal relationship among an independent and dependent variable, and the

degree of the relationship can also be determined (Frankfort-Nachmias & Leon-Guerrero, 2015; Gerstman, 2015; Salazer et al., 2015).

The cross-sectional survey design was appropriate for the research study because it allowed both the outcome and exposure to be measured simultaneously in the survey without manipulation. Additionally, the study design allowed data to be analyzed at a specific point in time (Creswell, 2003). Creswell (2003) indicated that the cross-sectional survey method and quantitative design were valuable because they require minimal engagement with the participants, allowing data collection to occur more quickly. Also, it is a more transparent and accessible format to understand that requires only basic comprehension skills to complete the survey. Using a survey with an open-ended question format required a higher set of literacy skills from participants and led to longer data collection times. I used an electronic survey to collect data from the study participants. This method reduced time constraints, the need for monetary resources and ensured a higher response rate. Survey methodology is an integral part of behavioral, social, and epidemiological research (Saris & Gallhofer, 2007).

Methodology

Population

I invited AA women who attend a university in Virginia to participate in the study. This university was selected due to its large percentage (approximately 50%) of AA women aged 18-25 (College Factual, n.d.a).

Definition of the Target Population

The target population for the study was AA college women aged 18-25 years attending a university in Virginia. Only AA college women aged 18-25 who met the specific eligibility criteria previously listed were included in the study. Based on the sample size calculation, the study required 80 AA college women aged 18-25. Approval from Walden University and the study site Institutional Review Board (IRB) was necessary before initiating any potential data collection. Once Walden University IRB was approved, the IRB at the study site also accepted the approval. IRB approval from both universities was vital to ensure that the study is more beneficial than harmful to the participants and ethical. (Babbie, 2017; Coreil, 2009).

The inclusion criteria included participants who (a) were AA college women, (b) had access to SNS, (c) had access to fitness centers, (d) were 18-25 years old, and (e) had one or more SNS accounts. However, exclusion criteria included participants who (a) were not AA college women, (b) had a disability or other chronic health conditions that restricted them from being physically active, (c) used fewer than two SNS, and (d) did not have access to fitness centers.

The primary recruitment method was through the chair of the biology department of the selected university. Participants received a link to a web-based questionnaire via the SurveyMonkey platform. Participants reviewed the informed consent form. If they agreed to participate, they completed the survey via SurveyMonkey.

In April, 2021, I sent the chair of the biology department recruitment flyers via email with my contact information. The biology department chair disseminated the link to their electronic flyers via email to enrolled biology students.

The informed consent form outlined the following: (a) background, (b) purpose of the study, (c) risk and benefits of the study, (d) significance of the study, (e) procedures of the participants, (f) ethical concerns, and (g) the voluntary nature of the study (see Aschengrau & Seage, 2014). If participants had any questions about the consent form or questionnaire, there was an email address provided on the form to contact me.

The consent form was the first form the participants read once entering SurveyMonkey. The SurveyMonkey platform included a consent form, which allowed me to add specific conditions and the privacy policy of SurveyMonkey. Participants who agreed to the terms of the informed consent simply selected "Yes" on the form, which allowed them to proceed to the next steps per the instructions. A link to the SurveyMonkey privacy policy was available for participants to read before deciding (i.e., yes, or no). If the participant selected "no" to the consent, the survey did not appear, and the participant was ineligible. Participants had access to the survey for 2 months, with a closing date of June 6, 2021. I only included surveys completed by the closing date in the study.

I downloaded all survey data and entered the data into a master Excel spreadsheet. Based on a sample size calculation, the study required a minimum of 55 participants. The information collected from the survey was anonymous. I did not require participants to disclose their name, phone number, or any other identifiable information. Ensuring that

all voluntary participants had an equal chance of being a part of my study was important

because it confirmed that the study findings are credible and reliable.

Sampling and Sampling Procedures

This study followed a convenience sampling technique to select participants.

Convenience sampling is a nonprobability method based on the judgment of the

researcher. (Suan et al., 2014). Convenience sampling involves including units that

represent the population of interest and are the easiest to access. The benefit of

conducting a convenience sampling method is that the researcher can guarantee that the

sample represents the population (Salzar et al., 2015). Furthermore, convenience

sampling allowed all AA college women aged 18-25 an equal opportunity to participate

in the study.

Recruitment Procedures

The biology department chair and the main point of contract (POC) with

recruiting participants maintain all students enrolled in a biology course. I sent a draft

email to the POC outlining instructions for participating and the requirements for the

study. In the email, I included a flyer in PDF format, which described (a) the name of the

study, (b) the length of time the participants had access to the survey, (c) my contact

information, and (d) a link to the survey via SurveyMonkey. The POC sent an email blast

(containing the study flyer) to all students enrolled in a biology course. The email

correspondence to students stated: (a) the significance of the study, (b) the purpose of the

study, and (c) an email address where the participants can send any questions about the

study. I also attached a flyer to the blast email sent out to the students. I embedded a link

to the study survey into the recruitment flyer allowing the survey to be accessed more easily. This link provided led the participants to the consent form and the survey via SurveyMonkey. The POC agreed to send an email to all currently enrolled biology students upon Walden IRB approval.

Lastly, all participants' information was kept confidential, and only I had access to the data from the completed surveys. The study participants were expected to understand the informed consent, acknowledge their rights as participants, and understand their rights to quit the survey without penalty.

Sample Size

Sample size, effect size, and power are all critical components to identify before conducting a study in that these factors can affect the statistical analysis. The sample size is a subset of a population (Gerstman, 2015). The proper sample size is essential to ensure enough responses to provide accurate results and minimize the risk of too many samples that may use up additional and valuable resources (Bartlett, Kotrlik, & Higgins, 2001; Smith, 2013).

When determining the sample size, a researcher needs to consider many aspects of their study design. These include the research questions and the study's design and elements such as time, available resources, participant recruitment, and projected response rate (Onwuebuzie & Collins, 2007; Scott, n.d.). A researcher also needs to predetermine statistical guidelines such as significance level, statistical power, and effect size as these can influence the sample size (Onwuebuzie & Collins, 2007). The sample size is significant in any empirical study because the researcher inferences the population

based on the sample (Gerstman, 2015; Sidani et al., 2016). The more diverse the sample size, the more reflective it is of the general population. The study design involved distributing and collecting survey data through an online platform to encourage a higher response rate than mail distribution. Time and available resources were factors in my study, as both were limited. My statistical guidelines were as follows:

- Level of significance (α): *The probability of rejecting the null hypothesis when it is a true or a false positive, also known as Type I error. This value is set at 0.05, the most widely used and accepted in research studies (Laerd Statistics, 2013c; Onwuegbuzie & Collins, 2007; Scott, n.d.).*

- Statistical power: *This is determined by the value of β, the probability of failing to reject a false null hypothesis or a false negative, also known as Type II error. This error is the probability that the null hypothesis will be successfully rejected. Again, these are values widely used and accepted in research studies (Cohen, 1992; Onwuebuzie & Collins, 2007; Scott, n.d.).*

- Effect size: *refers to the magnitude of the difference found between two groups. This value set at 0.5 is considered a moderate effect size and is commonly used (Scott, n.d.; Sullivan & Feinn, 2012).* Effect size is essential when researching because it allows researchers to measure the strength of a relationship between two or more variables (Salazar et al., 2015; Gerstman, 2015).

- Power: *is the probability of not making a Type II error (Salazar et al., 2015). Type II error fails to reject a false null hypothesis (Salazar et al., 2015). The*

traditional alpha = .05 threshold is commonly used in research when

rejecting or failing to reject the null hypothesis. Alpha is the significance level

at which the likelihood of a specific outcome is detected by chance (Gerstman,

2015). Understanding and identifying the alpha level will assist with a better

understanding of power and how to determine it for my study correctly.

Cohen (1988) posits that researchers have designed studies with an 80% probability of

detecting an effect. Furthermore, this figure represents a reasonable balance between the

alpha and beta risk. Thus, for the study, I set the alpha significance level at .05 and the

power at .80.

The study design was both correlational and descriptive. It serves to merge data

that describes the target populations' attitudes toward SNS and examines any

relationships between variables of interest. G *Power is a tool used to compute statistical

power analysis for many different statistical tests such as pair samples t-test, F test, and

others (Gerstman, 2015). I used a G *Power 3.1 to determine the sample size for the

proposed study. I identified a test family and statistical test to calculate a sample size for

the study. I determined that the F test was the best fit for the test family, a multiple linear

regression fixed model for the statistical test, and a priori for type or power analysis. The

effect size used was .15, .05 was used for the probability, 0.80 was used for the power,

and 1 predictor was inputted (i.e., ES = .15, α = .05, $1 - \beta$ = .80, predictors = 1). I

calculated a minimum sample size of 55 participants to ensure that the study was

statistically acceptable.

Instrumentation

The *"Social Media Utilization and Physical Activity Assessment Questionnaire"* was used to collect data for the proposed study. An adapted version of the "*Health-Related Characteristics Among College Students"* survey (Hill, 2013) included questions from two additional validated surveys, the *Previous Week Modifiable Activity Questionnaire and the Social Connectedness Scale*.

The 38-item survey asked demographics, SNS, PA habits, diet and overall health, health information, health opinions, and social connectedness. To ensure reliability and validity, I pilot tested the modified instrument with participants who met the inclusion criteria to assess readability, content, and format. This process assisted with eliminating any potential issues that may occur with the instrument. I incorporated any recommended changes into the final version of the instrument. The pilot test was administered April 5, 2021, and closed April 9, 2021.

Escoffery et al. originally developed the *Health-Related Characteristics Among College Students* survey in 2005. Hill (2013) modified the survey by including questions referring to students' health perception and lifestyle behaviors (e.g., diet, PA, and social media use). Hill's study used the survey to gather subjective norms data about the students' diets, levels of PA, and overall health status compared to their peers.

Hill's study included survey items about the following social media sites: Facebook, Twitter, Foursquare, Instagram, Pinterest, YouTube, Tumblr, and Blog/Vlogs. The survey questions asked about the use (or lack of use) of each social media type to assist with disseminating health information regarding lifestyle behaviors, diet, PA, and

perception of health (Hill, 2013). Hill's survey also included questions about participants' friends' use of the same social media sites. Hill used a chart to capture participants' responses to specific health-related activities across social media (Hill, 2013). The table outlined questions asking students how often they posted on their various social media accounts about their lifestyle behaviors (Hill, 2013)(Appendix C. Hill's Survey).

Additionally, the survey asked questions about health beliefs, explicitly asking participants to rate how much they agreed with each statement presented using a Likert-type scale. In 2018, I contacted the survey designer via email to request permission to adapt the questionnaire used in Hill's thesis study. Dr. Christopher Taylor sent an email permitting me to modify and use the survey. See Appendix D for Dr. Taylor's email correspondence.

Validation of Instrumentation

Escoffery and colleagues' (2010) pilot-tested a survey known as: "The Health-Related Characteristics Among College Students." Escoffery et al. administered the questionnaire to students from two southeastern universities in Fall 2002 and Spring 2003 and disseminated the survey during a course or online. Participants gave passive consent in the study after they read an inform-consent letter. Students who participated via paper were given a survey from teacher assistants in the health education course. Students who took the test online were recruited from advertisements in the college newspaper and fliers (Escoffery et al., 2010). The survey consisted of 30 behavioral, attitudinal, and demographic items. All data was gathered and entered into Epi Info 6.03 and then imported into SPSS 11.0 for analysis (Escoffery et al., 2010).

Questions from the "Previous Week Modifiable Activity Questionnaire (PWMAQ) measured PA among the study population. The PWMAQ is a self-administered instrument adapted from the Modifiable Activity Questionnaire (MAQ), developed in 1990 (Jeansonne, 2014). The interviewer administered a past-week MAQ, which was reformatted to a self-administered Modifiable Activity Questionnaire (SMAQ), allowing participants to complete the survey at home. A total of 65 participants completed the PA survey, allowing the researcher to gather information on the following areas: (a) Leisure, (b) walking, (c) moderate PA, (d) disability-related inactivity, and (e) vigorous PA (Jeansonne 2014). This PA questionnaire is one of the most common instruments for assessing PA. This assessment relies heavily on participants to recall their PA participation.

Questions from the Social Connectedness Scale-Revised were used to measure social connectedness among the study population. This instrument has a total number of twenty questions asked in the form of a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree) (Richard, Matthew & Sujin., 2001). Each statement reflected various ways a person may view oneself. Lee and Robbins developed the original instrument in 1995; since then, this instrument has been reformatted and revalidated by Richard, Matthew & Sujin (2001). Initially, the tool asked 44 questions; however, it currently asks ten positively worded and ten negatively worded items, which is a total of twenty questions (Richard, Matthew & Sujin., 2001). All three validated instruments were used to answer the five proposed research questions.

Operationalization of Variables

Listed below are study variables and their operational definitions:

Living environment: The natural and built environments where individuals perform various social, cultural, and religious activities (Bircher & Kuruvilla, 2014; Coreil, 2009; Tiwari et al., 2015). For my study, this variable was defined as a categorical (i.e., ordinal) variable, allowing participants to select from groups (i.e., campus residence, off-campus housing, etc.).

Level of education: A confounding variable. Participants were able to select either freshman, sophomore, junior, senior, and graduate level; see appendix C.

BMI: A metric that defines anthropometric height/weight characteristics in adults and classifying (e.g., categorizing) them into groups (CDC, 2002.; Nuttall et al., 2015;). A person's BMI can have three ranges: (a) normal, (b) overweight, and (c) obese. If a person's BMI is 18.5 to <25, it falls within the normal range (CDC, 2002.). If a person's BMI is 25.5 to <30, it falls within an overweight range (CDC, n.d.; WHO, 2018). Lastly, if a person's BMI is 30 or higher, it falls within the obese range (CDC, 2002.; WHO, 2018). BMI is known to represent an index of an individual's fatness.

SNS: A web-based service that allows individuals to be able to contrast a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system (Boyd & Ellison, 2007; Nguyen, 2013; Pew Research Center, 2018b). I investigated Facebook, Twitter, Pinterest, Snapchat, Instagram, YouTube, WhatsApp, and LinkedIn for the study.

Perceived social connectedness: the degree to which a person has and perceives a sufficient number and diversity of connections that allow them to: give and receive information, emotional support, and material aid, create a sense of belonging and value, and foster growth (Thoits, 2011). The social connectedness scale listed as questions 24-34 captured this information.

PA: any bodily movements including exercise as well as other activities such as (a) playing, (b) working, (c) active transportation, (d) house chores, and (e) recreational (WHO, 2018). *Physical inactivity* is the lack of PA (WHO, 2018). Items 6-11 from the instrument captured this information.

Diet and overall health: reaching and maintaining a healthy diet to ensure a healthy weight, according to the CDC's BMI chart (CDC, 2016a). Items 12-19 from the instrument captured this information.

Health information and opinions: defined as a person's perception of their health status or activities. Health information and opinions is an ordinal variable. Items 20-23 from the instrument captured this information.

Research Variables

When conducting a study, it is essential to accurately identify and outline the independent, dependent, and confounder variables to align each variable to the proposed research questions (Frankfort-Nachmias & Leon-Guerrero, 2015; Salazar et al., 2015). The more aligned the variables and the research questions are to one another, the better is the chance that researchers were able to answer the research questions accurately (Frankfort-Nachmias & Leon-Guerrero, 2015; Salazar et al., 2015

Table 1 displays the study's independent, dependent, and confounder variables and their alignment to TPB constructs, survey items with each study research question for this study.

Table 1

Research Study Alignment Table

Theory of planned behavior constructs	Variables independent/dependent	Research questions	Survey Item number-corresponds to RQ and variable
PBC	**IV**: SNS utilization **DV**: PA participation	**RQ1**: Is there an association between social networking utilization(measured by days/minutes spent on social media) and vigorous PA (measured by days per week and number of minutes per day) among AA college women aged 18-25?	Survey Question: **4**: Daily social media use **6:** Average (minutes/days) vigorous PA participation
PBC	**IV**: SNS utilization **DV**: PA participation	**RQ2**: Is there an association between social networking utilization (measured by number of days/minutes spent on social media) moderate PA (measured by number of days per week and number of minutes by day) among AA college women 18-25?	Survey Questions: **4**: Daily social media use **7:** Average (minutes/days) moderate PA participation
Self-efficacy	**IV**: Time spent on social networking sites **DV**: PA participation	**RQ3**: Is there an association between time spent on social networking sites (measured by days/minutes spent) and perceived level of PA (measured by days per week and minutes per day) among AA college women aged 18-25?	Survey Question: **10**: Spend time on social media **11**: Compared to most women, how active are you?
PBC	**IV**: Social connectedness **DV**: PA participation **Grouping Variable (Confounder)**: Age & Level of education	**RQ4**: Is there an association between social connectedness (measured by Likert Scale) and vigorous PA (measured by days per week and minutes per day) while controlling for academic level and age among AA college women aged 18-25?	Survey Questions: **16**: I can connect to others **6**: Average (minutes/days) vigorous PA participation
Attitude/belief	**IV**: Social connectedness and weight control **DV**: PA Participation	**RQ 5**: Is there a mediation between social connectedness and perception of weight control and moderate PA participation among AA college women aged 18-25?	Survey Questions: **16**: I am able to connect to others **7**: Average (minutes/days) moderate PA participation **21**: How in control does one feel about their weight

Data Analysis Plan

Data Analysis

Quantitative data gathered from completed surveys contained information on the following: (a) SNS use by type, (b) frequency of SNS use for health-related behaviors, (c) frequency of lifestyle behaviors, (d) perceptions of health, (e) diet, (f) PA, (g) difference in lifestyle behaviors and perceptions of health, and (h) PA between those who use SNS for health-related messages compared to those who do not. In addition, the survey captured demographic information about AA college women's living arrangements, academic level, and age. I used the Statistical Package for Social Science (SPSS 27.0) software to display graphs, frequency tables, descriptive statistics and conducted multiple regression and chi-square tests.

To prepare the data set for analysis, I screened and cleaned all survey data entered into SPSS. First, I removed any surveys which had outliers and those with missing data. Removing outliers were essential to ensure that data was not skewed in one specific direction. Next, I performed a frequency test by using a descriptive statistics analysis in IBM SPSS 27.0. This procedure determined if any data were missing and replaced it with the mean of the dataset by replacing the missing value function in SPSS (Dong & Peng, 2013). Listed below is the data analysis plan for answering the research questions for this study. Each of the five research questions were used to answer the overall research question, "Is there an association between AA college women's SNS utilization and PA participation?"

I presented a null and alternative hypothesis for the five research questions. A null hypothesis states no statistically significant difference between the independent and dependent variables (Hill, 2013; Salazar et al., 2015). However, an alternative hypothesis states a statistically significant difference between the independent and dependent variables (Hill, 2013; Salazar et al., 2015). The table below describes the alignment between TPB constructs, study research questions, independent/dependent variables, and survey items. The demographic information gathered from the surveys describes the following confounder variables: (a) age, (b) level of education, and (c) living arrangement.

RQ1: What is the association between use of SNS (measured by number of days/minutes spent on social media) and vigorous PA (measured by number of days per week and number of minutes by day) among AA college women 18-25?

$H_0$1: There is no statistically significant association between SNS utilization (measured by number of days/minutes spent on social media) and vigorous PA (measured by number of days per week and number of minutes per day) among AA college women aged 18-25.

H_a1: There is a statistically significant association between SNS utilization (measured by number of days/minutes spent on social media) and vigorous PA (measured by number of days per week and number of minutes per day) among AA college women aged 18-25.

I conducted a simple linear regression analysis to determine an association between SNS utilization and minutes of vigorous PA per week among AA college

women aged 18-25. The one independent variable is SNS utilization, and the dependent variable is minutes of vigorous PA. The traditional alpha .05 threshold was the acceptance criteria for the null and alternative hypotheses.

RQ2: What is the association between utilization of SNS (measured by number of days/minutes spent on social media) and moderate PA (measured by number of days per week and number of minutes by day) among AA college women 18-25?

$H_0$2: There is no statistically significant association between SNS utilization (measured by number of days/minutes spent on social media) and moderate PA (measured by number of days per week and number of minutes by day) among AA college women aged 18-25.

H_a2: There is a statistically significant association between SNS utilization (measured by number of days/minutes spent on social media) and moderate PA (measured by number of days per week and number of minutes by day) among AA college women aged 18-25.

I conducted a simple linear regression analysis to determine an association between SNS utilization and minutes/days of moderate PA per week among AA college women ages 18-25. The one independent variable was SNS utilization, and the dependent variable was minutes of moderate PA. The traditional alpha .05 threshold is the acceptance criteria for the null and alternative hypotheses.

RQ3: What is the association between time spent on SNS (measured by number of days/minutes spent) and perceived level of PA (measured by days per week and minutes per day) among AA college women 18-25?

$H_0$3: There is no statistically significant association between time spent on

SNS (measured by number of days/minutes spent) and perceived level of PA

(measured by days per week and minutes per day) among AA college women

aged 18-25.

H_a3: There is a statistically significant association between time spent on SNS

(measured by number of days/minutes spent) and perceived level of PA

(measured by days per week and minutes per day) among AA college women

18-25.

To determine an association between time spent on SNS and perception of PA

among AA college women 18-25, I conducted a simple linear regression analysis. Time

spent on SNS was the independent variable, and the perception of PA was the dependent

variable. The traditional alpha .05 threshold is the acceptance criteria for the null and

alternative hypotheses.

RQ4: What is the association between social connectedness (measured by Likert

scale) and vigorous PA participation (measured by days per week and minutes per

day) while controlling for academic level and age among AA college women 18-

25?

$H_0$4: There is no statistically significant association between social

connectedness (measured by Likert scale) and vigorous PA participation

(measured by days per week and minutes per day) while controlling for

academic level and age among AA college women 18-25.

H_a4: There is a statistically significant association between social

connectedness (measured by Likert scale) and vigorous PA participation

(measured by days per week and minutes per day) while controlling for

academic level and age among AA college women 18-25.

To determine an association with other factors contributing to SNS utilization and

PA participation among AA college women 18-25, I conducted an ANCOVA analysis.

An ANCOVA determined the influence of the independent variable on the dependent

variable while removing the effects of the covariate factors previously listed above. The

independent variable was SNS, the dependent variable was PA, and the covariates were

age and level of education. The traditional alpha .05 threshold is the acceptance criteria

for the null and alternative hypotheses.

RQ5: Is there a mediating effect of perception of weight control (measured by

scale score) with the association between social connectedness (measured by

scale score) and moderate PA (measured by minutes per day/ days per week)

participation among AA college women aged 18-25?

$H_0$5: There is no statistically significant mediating effect of perception of

weight control (measured by scale score) with the association between social

connectedness (measured by scale score) and moderate PA (measured by

minutes per day/days per week) participation among AA college women aged

18-25.

H_a5: There is a statistically significant mediating effect of perception of

weight control (measured by scale score) with the association between social

connectedness (measured by scale score) and moderate PA (measured by

minutes per day/days per week) participation among AA college women aged

18-25.

To determine a mediating effect of perception of weight control on the

relationship between social connectedness and moderate PA participation among AA

college women aged 18-25, I conducted multiple linear regression analyses. The two

independent variables were SNS connectedness and perceived weight control and, the

dependent variable was moderate PA participation. The intervening variable, perceived

weight control, was used to test the mediation effect between social connectedness and

PA. The traditional alpha .05 threshold was the acceptance criteria for the null and

alternative hypotheses if the p-value from the statistical test is above alpha = .05.

<div align="center">**Threats to Validity**</div>

Internal Validity

Internal validity is how well a research study can avoid confounding variables

(Salazar et al., 2015). Furthermore, a research study with high internal validity allows the

researcher to choose one explanation with significant confidence due to many

confounders (Salazar et al., 2015). For the study, I conducted an ANCOVA test to control

the confounder variables when determining an association between SNS utilization and

PA participation among AA college women. Performing this test limited the potential

threat to internal validity.

External Validity

External validity refers to the findings and the study (Salazar et al., 2015). Furthermore, it indicates to what extent the study results can be generalized to other situations and other people (Salazar et al., 2015). For the proposed research study, the potential threat to external validity is based on randomization. To limit this type of potential risk to the study, AA college women were randomly chosen from one university (i.e., reported in Appendix A) to participate in the study. Limiting the potential threats to internal validity can potentially affect the high levels of external validity because the findings cannot be generalizable to other populations. However, having a high internal over external validity is essential when conducting a research study. Having high internal validity increases the overall acceptance of the research findings in the study by others (i.e., other researchers and community members) (Cavallo et al., 2012; Aschengrau & Seage, 2014).

Construct Validity

I used the Health-Related questionnaire adopted from Hill (2013) to answer the proposed research questions within the study. I conducted a pilot study to ensure the operationalized variables within the study measured what they were intended to measure. Construct validity is defined as the degree to which a test measures what it claims to be measuring (Haradhan, 2017). Each variable must be adequately operationalized because inferences can be made about the study and the TPB constructs.

Ethical Procedures

Ethical considerations were made throughout the entire study process, beginning with the design and analysis, and ending with the distribution of the results. The overall focus of my study was to protect all study participants. Therefore, I obtained permission from IRB before collecting any data or information from participants. The IRB ensures that study benefits outweigh any study harms (Aschengrau & Seage, 2014).

The consent form outlined the following: (a) the study's procedure, (b) voluntary nature of the study, (c) risks and benefits of participating in the study, (d) participants rights, (e) the confidential nature of any information provided by the participants, and (f) my contact information, should the participants wish to ask any questions before giving consent. The participants completed the following consent statement "This survey is strictly voluntary and up to your discretion. If you do not wish to proceed with answering any further questions, you have the right to stop at any time" was displayed on the first page. If AA college women chose to answer the survey, then, as previously mentioned above, a numerical number was generated corresponding to a number created in Excel. Only I had access to the study data, and data collected was anonymous, and that the questionnaire didn't include participant names.

Summary

In this chapter, I explained the study purpose, research design, and approach. Next, I described the setting, sampling procedure, recruitment strategy, and data collection and analysis plan. Lastly, an overview of ethical considerations was detailed to highlight the study's internal, external, construct, and proper procedures. In the upcoming

Chapter 4, the study data and information gathered are described, additionally, the

statistical analyses and study findings related to each research question and hypothesis.

Chapter 4: Results

Introduction

Today, 7 out of 10 AAs use social media to connect, engage with news content, share information, and entertain themselves (Pew Research Center, 2021). The young AA adults, aged 18-25, were among the earliest social media adopters and continue to use these sites at high levels. Still, usage by older adults has also increased in recent years. Pew Research Center (2021) reported that 70% of AA aged 18-29 use Facebook, and 49% use Instagram daily. Thus, Facebook remains one of the most widely used online platforms among young adults. With this knowledge about SNS usage among AA college women aged 18-25, little information exists on how this impacts this specific population's overall health and health behaviors.

According to Bland and Sharma. (2017), AA women are at high risk for acquiring chronic disease due to sedentary lifestyles, meaning a lifestyle of sitting or lying down. This study conducted a systematic review of PA interventions among AA women published between 2009-2015. All 13 studies examined interventions implemented with AA women in the United States. These studies suggested that social support and a healthy diet were more efficacious in fostering PA among AA women aged 18-25 (Bland & Sharma., 2017). Social support can be produced via SNS. Overall, the researchers concluded that interventions focusing on PA participation could increase among AA women if behavior change constructs included healthier food choices and social support (Bland and Sharma., 2017). These constructs are detailed in Chapter 2.

There have been several researchers who have investigated the association PA may have on the overall health of AA women aged 18-25, for example, the research study by Bland and Sharma (2017). Unfortunately, there is little to no information regarding the potential association SNS may have on PA participation among AA women ages 18-25. The purpose of this quantitative research study was to investigate if the use of social media, specifically SNS, was associated with participation in PA among AA college women aged 18-25 in Virginia. The TPB model framed the study and consisted of four constructs: attitude/belief, subjective norms, PBC, and self-efficacy.

The RQs and associated hypotheses were.

RQ1: What is the association between SNS utilization (measured by the number of days/minutes spent on social media) and vigorous PA (measured by the number of days per week and number of minutes by day) among AA college women aged 18-25?

$H_0 1$: There is no statistically significant association between SNS utilization (measured by the number of days/minutes spent on social media) and vigorous PA (measured by the number of days per week and number of minutes per day) among AA college women aged 18-25.

$H_a 1$: There is a statistically significant association between SNS utilization (measured by the number of days/minutes spent on social media) and vigorous PA (measured by the number of days per week and number of minutes per day) among AA college women aged 18-25.

RQ2: What is the association between SNS utilization (measured by the number of days/minutes spent on social media) and moderate PA (measured by the number of days per week and number of minutes by day) among AA college women aged 18-25?

$H_0$2: There is no statistically significant association between SNS utilization (measured by the number of days/minutes spent on social media) and moderate PA (measured by the number of days per week and number of minutes by day) among AA college women aged 18-25.

H_a2: There is a statistically significant association between SNS utilization (measured by the number of days/minutes spent on social media) and moderate PA (measured by the number of days per week and number of minutes by day) among AA college women aged 18-25.

RQ3: What is the association between time spent on SNS (measured by the number of days/minutes spent) and perceived level of PA (measured by the number of days per week and minutes per day) among AA college women aged 18-25?

$H_0$3: There is no statistically significant association between time spent on SNS (measured by the number of days/minutes spent) and perceived level of PA (measured by the number of days per week and minutes per day) among AA college women aged 18-25.

H_a3: There is a statistically significant association between time spent on SNS (measured by the number of days/minutes spent) and perceived level of PA

(measured by the number of days per week and minutes per day) among AA

college women aged 18-25.

RQ4: What is the association between social connectedness (measured by social

connectedness score scale) and vigorous PA participation (measured by the

number of days/ minutes spent) while controlling for academic level and age

among AA college women aged 18-25?

$H_0$4: There is no statistically significant association between social

connectedness (measured by social connectedness score) and vigorous PA

participation (measured by the number of days/ minutes spent) while

controlling for academic level and age among AA college women aged 18-25.

H_a4: There is a statistically significant association between social

connectedness (measured by social connectedness score) and vigorous PA

participation (measured by the number of days/ minutes spent) while

controlling for academic level and age among AA college women aged 18-25.

RQ5: Is there a mediating effect of perception of weight control (measured by

scale score) with the association between social connectedness (measured by scale

score) and moderate PA (measured by the number of days/ minutes spent)

participation among AA college women aged 18-25?

$H_0$5: There is no statistically significant mediating effect of perception of

weight control (measured by scale score) with the association between social

connectedness (measured by scale score) and moderate PA (measured by the

number of days/ minutes spent) participation among AA college women aged

18-25.

H_a5: There is a statistically significant mediating effect of perception of

weight control (measured by scale score) with the association between social

connectedness (measured by scale score) and moderate PA (measured by the

number of days/ minutes spent) participation among AA college women aged

18-25.

This chapter briefly describes my pilot study, primary data collection, and the results of

my hypothesis tests from my actual study.

Data Collection

After obtaining Institutional Review Board (IRB) approval from the Walden

University team (03-03-21-0515608) and the research university team, I conducted a pilot

study. An overview of the pilot study and survey link was sent to the point of contact

(POC) at the research university to disseminate to members of the target audience. The

survey consisted of a total of 51 questions. The POC shared the survey on April 5, 2021,

via blackboard for all levels of (i.e., Freshmen, Sophomore, Junior, and Senior) AA

college women to participate. My target population was AA college women aged 18-25.

For the pilot study, I aimed to receive a total of eight responses. The pilot study was

conducted to highlight if any errors in the survey would need to be corrected (i.e., the

wording of questions, order of questions, and length of time to complete the study). On

April 9, 2021, the pilot study was officially closed after obtaining eight surveys via

Survey Monkey from the participants. Any students who attempted to complete the

survey once it was closed received a message informing them that it was officially

closed. Also, an email was sent to the POC informing them that the pilot study had

ended.

On April 13, 2021, the web-based survey via Survey Monkey for the actual study

was disseminated following the same procedures as the pilot study via the POC. A more

detailed description of the data collection process can be found in chapter 3. The goal was

to receive a total of 80 responses for the study. There were no data discrepancies. There

was one deviation made from the procedure outlined in chapter 3. The goal of receiving

80 surveys were not reached; instead, 64 surveys were collected. However, per the

G*Power calculated in chapter 3, only 55 surveys were needed to make my sample size

significant. Two follow-up emails were sent to the POC, asking him to repost the survey

on Blackboard to ensure students were aware of having an opportunity to be part of a

study. The first email was sent on April 27, 2021, and the second was sent on May 4,

2021. These follow-up emails and reposting the survey assisted with receiving new

responses. The web-based survey was officially closed on June 6, 2021. Per Survey

Monkey analytics, it took participants an average time of thirteen minutes to complete the

survey.

Descriptive Statistics

The sample size was 64 AA college women aged 18-25. Most of the participants were

AA college women aged 21-23, accounting for 46.4% of the total sample population.

Study participants 18-20 years old represented 42.9% of the sample and those 24-25

years old accounted for 10.7% of the sample, figure 2.

Figure 2

Participants' Age

Age Range for Sample Population
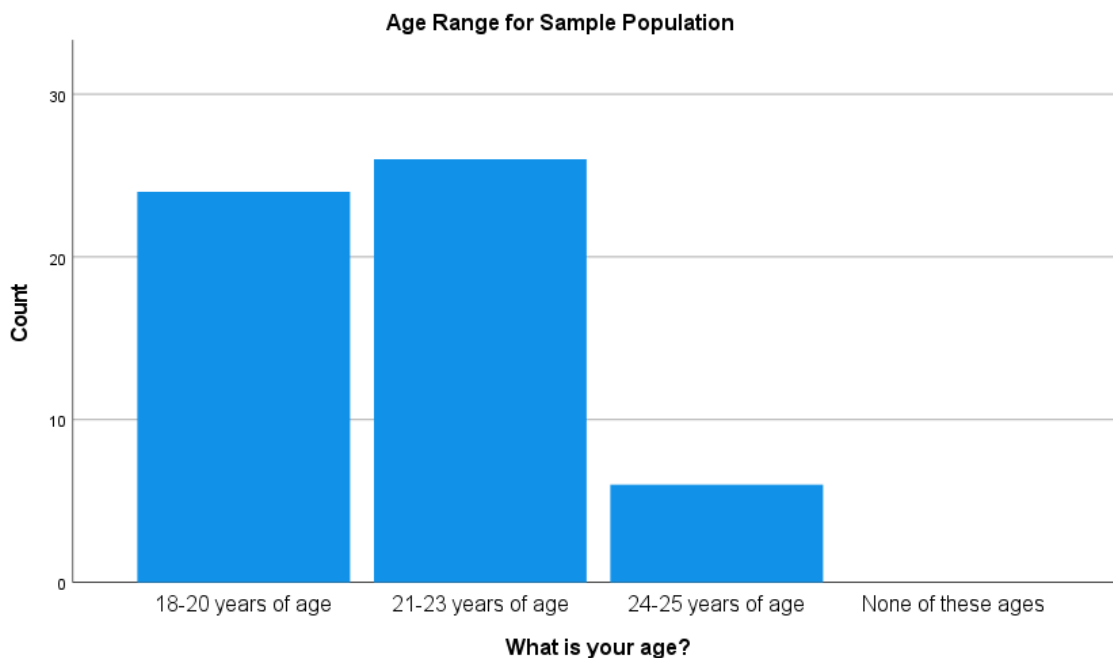
Results

An ordinal regression, mediation, and covariate analysis were conducted to address the five proposed RQs for this study. For using an ordinal regression test, both the dependent and independent variables should have a categorical measurement. The dependent variable in this study was PA participation. The independent variables in this study were SNS and social connectedness. The covariate assumption for this statistical test is that the variable can either be categorical or continuous. The covariates for this study were age and level of education. All assumptions for the ordinal regression were met.

The understanding of a mediation analysis output requires a basic knowledge of an ordinal regression analysis first. A mediation, also known as the third variable, comes between the independent and dependent, meaning x leads to the mediators, leading to Y (Gerstman, 2015; Salazar et al., 2015). The idea is that the direct effect (c-path) should get smaller with a mediator. Thus, mediation aims to determine if the c-path is statistically significant. However, if the indirect impact is statistically significant, then a mediation has occurred. Therefore, only RQ 5 required a mediation analysis.

Figure 3

Mediation Test
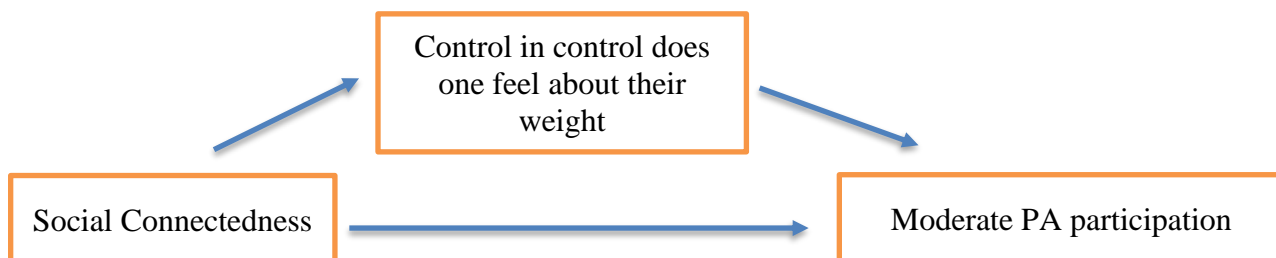
RQ1: What is the association between utilization of SNS (measured by the number of days/minutes spent on social media) and vigorous PA (measured by the number of days per week and number of minutes by day) among AA college women aged 18-25?

The results of the ordinal regression analysis showed there was a statistically significant association between SNS and vigorous PA (measured by the number of minutes spent per day/ days per week) among AA college women aged 18-25 ($p < 0.05$, Table 4). Two different regression tests were conducted to account for: (1) days of

vigorous PA participation and (2) minutes spent on vigorous PA participation. Within the study for days per week of vigorous PA, 28.3% ($n = 15$) reported zero days of participation of vigorous PA. Meanwhile, 5.7% ($n = 3$) indicated that they participated in seven days of vigorous activity (table 2). Thus, a total of 26.4% ($n = 14$) of AA college women reported zero minutes of vigorous PA, and only 13.2% ($n = 7$) reported 60 minutes or more of vigorous PA activity (table 3).

The results for SNS usage showed, 20.8% ($n = 11$) reported not using Facebook during the week, and 20.8% ($n = 11$) reported using twitter greater than 4 hours (Table 2). Meanwhile, 32.1% ($n = 17$) reported not using Pinterest and 22.6% ($n = 12$) using Snapchat 2-3 hours per day, table 2. A total of 34.0% ($n = 18$) of AA college women aged 18-25 reported using Instagram for 2-3 hours per day, while 24.5% ($n = 13$) reported using YouTube 1-2 hours per day. Within the study, 32.1% ($n = 17$) reported they did not use LinkedIn, and 18.9% ($n = 10$) reported not using WhatsApp. TikTok, deemed one of the newest SNS platforms, was reportedly used 2-3 hours a per day among 20.8% ($n = 11$) of the study population. See Table 2.

Table 2

Vigorous PA Participation (Measured by the Number of Days per Week) and SNS Usage

SNS usage	Days per week	N	Percentage
Vigorous PA refers to activities that take hard physical effort and make you breathe much	0 days	15	28.3%
	1 day	7	13.2%
	2 days	7	13.2%
	3 days	9	17.0%

harder than normal.		*N*	Percentage
During the last seven	4 days	4	7.5%
days, how many days	5 days	7	13.2%
did you do vigorous PA	6 days	1	1.9%
like heavy lifting,	7 days	3	5.7%
aerobic exercise,			
organized sports			
Facebook	.00	18	34.0%
	I do not use this media	11	20.8%
	Greater than 4 hours per day	3	5.7%
	3-4 hours per day	3	5.7%
	2-3 hours per day	10	18.9%
	1-2 hours per day	8	15.1%
Twitter	.00	18	34.0%
	I do not use this media	9	17.0%
	Greater than 4 hours per day	11	20.8%
	3-4 hours per day	2	3.8%
	2-3 hours per day	6	11.3%
	1-2 hours per day	7	13.2%
Pinterest	.00	16	30.2%
	I do not use this media	17	32.1%
	Greater than 4 hours per day	10	18.9%
	3-4 hours per day	3	5.7%
	2-3 hours per day	4	7.5%
	1-2 hours per day	3	5.7%
Snapchat	.00	9	17.0%
	I do not use this media	16	30.2%
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	5	9.4%
	2-3 hours per day	12	22.6%
	1-2 hours per day	6	11.3%
Instagram	.00	1	1.9%

		N	Percentage
	I do not use this media	6	11.3%
	Greater than 4 hours per day	1	1.9%
	3-4 hours per day	11	20.8%
	2-3 hours per day	18	34.0%
	1-2 hours per day	16	30.2%
YouTube	I do not use this media	13	24.5%
	Greater than 4 hours per day	7	13.2%
	3-4 hours per day	10	18.9%
	2-3 hours per day	10	18.9%
	1-2 hours per day	13	24.5%
LinkedIn	.00	26	49.1%
	I do not use this media	17	32.1%
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	4	7.5%
	1-2 hours per day	1	1.9%
WhatsApp	.00	40	75.5%
	I do not use this media	10	18.9%
	Greater than 4 hours per day	1	1.9%
	2-3 hours per day	1	1.9%
	1-2 hours per day	1	1.9%
TikTok	.00	10	18.9%
	I do not use this media	7	13.2%
	Greater than 4 hours per day	3	5.7%
	3-4 hours per day	8	15.1%
	2-3 hours per day	11	20.8%
	1-2 hours per day	14	26.4%
Valid		53	100.0%

Table 3

Vigorous PA Participation (Measured by the Number of Minutes Spent per Day) and SNS

Usage

SNS Usage	Minutes per Day	*N*	Percentage
During the last seven days, how long did you do vigorous PA like heavy lifting, aerobic exercise, organized sports, or bicycling?	0 minutes	14	26.4%
	1 -29 minutes	19	35.8%
	30-59 minutes	13	24.5%
	60 minutes or more	7	13.2%
Facebook	.00	18	34.0%
	I do not use this media	11	20.8%
	Greater than 4 hours per day	3	5.7%
	3-4 hours per day	3	5.7%
	2-3 hours per day	10	18.9%
	1-2 hours per day	8	15.1%
Twitter	.00	18	34.0%
	I do not use this media	9	17.0%
	Greater than 4 hours per day	11	20.8%
	3-4 hours per day	2	3.8%
	2-3 hours per day	6	11.3%
	1-2 hours per day	7	13.2%
Pinterest	.00	16	30.2%
	I do not use this media	17	32.1%
	Greater than 4 hours per day	10	18.9%
	3-4 hours per day	3	5.7%
	2-3 hours per day	4	7.5%
	1-2 hours per day	3	5.7%

		N	Percentage
Snapchat	.00	9	17.0%
	I do not use this media	16	30.2%
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	5	9.4%
	2-3 hours per day	12	22.6%
	1-2 hours per day	6	11.3%
Instagram	.00	1	1.9%
	I do not use this media	6	11.3%
	Greater than 4 hours per day	1	1.9%
	3-4 hours per day	11	20.8%
	2-3 hours per day	18	34.0%
	1-2 hours per day	16	30.2%
YouTube	I do not use this media	13	24.5%
	Greater than 4 hours per day	7	13.2%
	3-4 hours per day	10	18.9%
	2-3 hours per day	10	18.9%
	1-2 hours per day	13	24.5%
LinkedIn	.00	26	49.1%
	I do not use this media	17	32.1%
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	4	7.5%
	1-2 hours per day	1	1.9%
WhatsApp	.00	40	75.5%
	I do not use this media	10	18.9%
	Greater than 4 hours per day	1	1.9%
	2-3 hours per day	1	1.9%
	1-2 hours per day	1	1.9%
TikTok	.00	10	18.9%
	I do not use this media	7	13.2%

	N	Percentage
Greater than 4 hours per day	3	5.7%
3-4 hours per day	8	15.1%
2-3 hours per day	11	20.8%
1-2 hours per day	14	26.4%
Valid	53	100.0%
Missing	11	
Total	64	

Table 4

Statistical Significance of Vigorous PA Participation (Measured by the Number of Minutes Spent per Day/ Days per Week) and SNS Usage

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	141.137			
Final	.000	141.137	41	.000

Overall, for RQ 1, the null hypothesis was rejected, and the alternative hypothesis was accepted, which states, there is a statistically significant association between SNS (measured by the number of days/minutes spent on social media) and vigorous PA (measured by the number of days per week/ number of minutes per day) among AA college women aged 18-25.

RQ2: What is the association between SNS utilization (measured by the number of days/minutes spent on social media) and moderate PA (measured by the number of days per week and number of minutes by day) among AA college women aged 18-25?

The ordinal regression analysis results showed a statistically significant association between SNS and moderate PA among AA college women aged 18-25 ($p < 0.05$, Table 7). Two different regression tests were run to account for: (a) days and moderate PA, and (b) time spent and moderate PA. 35.8% ($n = 19$) reported 30-59 minutes spent per day for moderate PA participation. Meanwhile, 17.0% ($n = 9$) reported 60 minutes or more of moderate PA per day (Table 5). For the number of days per week, a total of 22.6% ($n = 12$) of AA college women reported three days of moderate PA, and 5.7% ($n = 3$) reported seven days of moderate PA participation, table 6.

The results for SNS usage showed, 20.8% ($n = 11$) reported not using Facebook during the week, and 15.1% ($n = 8$) reported using Twitter 1-2 hours per day (Table 6). Meanwhile, 18.9% ($n = 10$) said using Pinterest was greater than 4 hours per day, and 11.3% ($n = 6$) used Snapchat 1-2 hours per day, table 6. A total of 30.2% ($n = 16$) of AA college women aged 18-25 reported using Instagram for 1-2 hours per day, while 24.5% ($n = 13$) reported using YouTube for 1-2 hours per day. Within the study, 32.1% ($n = 17$) reported they do not use LinkedIn, and 18.9% ($n = 10$) reported not using WhatsApp. Finally, 26.4% ($n = 14$) reported using TikTok for 1-2 hours per day.

Table 5

Moderate PA Participation (Measured by the Number of Minutes Spent per Day) and

SNS Usage

SNS Usage	Minutes per Day	N	Percentage
During the last seven days, how long did you do moderate PA like carrying light loads, bicycling at a regular pace, or jogging?	0 minutes	6	11.3%
	1 -29 minutes	19	35.8%
	30-59 minutes	19	35.8%
	60 minutes or more	9	17.0%
Facebook	.00	18	34.0%
	I do not use this media	11	20.8%
	Greater than 4 hours per day	3	5.7%
	3-4 hours per day	3	5.7%
	2-3 hours per day	10	18.9%
	1-2 hours per day	8	15.1%
Twitter	.00	18	34.0%
	I do not use this media	9	17.0%
	Greater than 4 hours per day	11	20.8%
	3-4 hours per day	2	3.8%
	2-3 hours per day	6	11.3%
	1-2 hours per day	7	13.2%
Pinterest	.00	16	30.2%
	I do not use this media	17	32.1%
	Greater than 4 hours per day	10	18.9%
	3-4 hours per day	3	5.7%
	2-3 hours per day	4	7.5%
	1-2 hours per day	3	5.7%
Snapchat	.00	9	17.0%
	I do not use this media	16	30.2%

		N	Percentage
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	5	9.4%
	2-3 hours per day	12	22.6%
	1-2 hours per day	6	11.3%
Instagram	.00	1	1.9%
	I do not use this media	6	11.3%
	Greater than 4 hours per day	1	1.9%
	3-4 hours per day	11	20.8%
	2-3 hours per day	18	34.0%
	1-2 hours per day	16	30.2%
YouTube	I do not use this media	13	24.5%
	Greater than 4 hours per day	7	13.2%
	3-4 hours per day	10	18.9%
	2-3 hours per day	10	18.9%
	1-2 hours per day	13	24.5%
LinkedIn	.00	26	49.1%
	I do not use this media	17	32.1%
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	4	7.5%
	1-2 hours per day	1	1.9%
WhatsApp	.00	40	75.5%
	I do not use this media	10	18.9%
	Greater than 4 hours per day	1	1.9%
	2-3 hours per day	1	1.9%
	1-2 hours per day	1	1.9%
TikTok	.00	10	18.9%
	I do not use this media	7	13.2%
	Greater than 4 hours per day	3	5.7%
	3-4 hours per day	8	15.1%

		N	Percentage
	2-3 hours per day	11	20.8%
	1-2 hours per day	14	26.4%
Valid		53	100.0%
Missing		11	
Total		64	

Table 6

Moderate PA Participation (Measured by the Number of Days per Week) and SNS Usage

SNS Usage	Days per Week	*N*	Percentage
Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. During the last seven days, how many days did you do moderate PA like carrying light loads, bicycling at a regular pa	0 days	5	9.4%
	1 day	12	22.6%
	2 days	11	20.8%
	3 days	12	22.6%
	4 days	2	3.8%
	5 days	8	15.1%
	7 days	3	5.7%
Facebook	.00	18	34.0%
	I do not use this media	11	20.8%
	Greater than 4 hours per day	3	5.7%
	3-4 hours per day	3	5.7%
	2-3 hours per day	10	18.9%
	1-2 hours per day	8	15.1%
Twitter	.00	18	34.0%
	I do not use this media	9	17.0%

		N	Percentage
	Greater than 4 hours per day	11	20.8%
	3-4 hours per day	2	3.8%
	2-3 hours per day	6	11.3%
	1-2 hours per day	7	13.2%
Pinterest	.00	16	30.2%
	I do not use this media	17	32.1%
	Greater than 4 hours per day	10	18.9%
	3-4 hours per day	3	5.7%
	2-3 hours per day	4	7.5%
	1-2 hours per day	3	5.7%
Snapchat	.00	9	17.0%
	I do not use this media	16	30.2%
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	5	9.4%
	2-3 hours per day	12	22.6%
	1-2 hours per day	6	11.3%
Instagram	.00	1	1.9%
	I do not use this media	6	11.3%
	Greater than 4 hours per day	1	1.9%
	3-4 hours per day	11	20.8%
	2-3 hours per day	18	34.0%
	1-2 hours per day	16	30.2%
YouTube	I do not use this media	13	24.5%
	Greater than 4 hours per day	7	13.2%
	3-4 hours per day	10	18.9%
	2-3 hours per day	10	18.9%
	1-2 hours per day	13	24.5%
LinkedIn	.00	26	49.1%
	I do not use this media	17	32.1%

		N	Percentage
	Greater than 4 hours per day	5	9.4%
	3-4 hours per day	4	7.5%
	1-2 hours per day	1	1.9%
WhatsApp	.00	40	75.5%
	I do not use this media	10	18.9%
	Greater than 4 hours per day	1	1.9%
	2-3 hours per day	1	1.9%
	1-2 hours per day	1	1.9%
TikTok	.00	10	18.9%
	I do not use this media	7	13.2%
	Greater than 4 hours per day	3	5.7%
	3-4 hours per day	8	15.1%
	2-3 hours per day	11	20.8%
	1-2 hours per day	14	26.4%
Valid		53	100.0%
Missing		11	
Total		64	

Table 7

Statistical Significance for Moderate PA Participation (Measured by the Number of Days per Week/ Minutes Spent per Day) and SNS Usage

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	136.022			
Final	.000	136.022	41	.000

In conclusion for RQ 2, the null hypothesis was rejected, and the alternative hypothesis was accepted stating, there is a statistically significant association between SNS (measured by the number of days/minutes spent on social media) and moderate PA participation (measured by the number of days per week/ number of minutes spent per day) among AA college women aged 18-25.

RQ3: What is the association between time spent on SNS (measured by the number of days/minutes spent) and perceived level of PA (measured by days per week/ minutes spent per day) among AA college women aged 18-25?

For RQ3, two ordinal regression analyses were conducted to account for days spent of SNS compared to the perceived level of PA and time spent compared to the perceived level of PA. The regression for days spent on SNS compared to the perceived level of PA among AA college women showed no statistically significant association between the two variables ($p > 0.05$ table 10). However, the regression that reported minutes spent on SNS and perceived level of PA among AA college women aged 18-25 there was a statistical; association ($p < 0.05$ table 11). A total of 41.8% ($n = 23$) AA college women reported, when compared to women their age, they feel less active, and 16.4 % ($n = 9$) reported feeling more active. For how many days a week, a total of 81.8% ($n = 45$) reported they use SNS seven days a week. Meanwhile, 1.8% ($n = 1$) reported zero days per week of SNS usage, table 8.

When analyzing the variable of minutes spent and perceived level of PA, 41.1% ($n = 23$) reported they felt less active. A total of 16.1% ($n = 9$) felt more active when compared to most AA college women. A total of 73.2% ($n = 41$) reported 60 minutes or

more of SNS usage per day, while 1.8% ($n = 1$) reported zero minutes spent per day of

SNS usage, Table 9.

Table 8

Days per Week on SNS and PA Compared to Most Women

SNS Usage	Days per Week	N	Percentage
Compared with most women your age, would you say that you are:	.00	6	10.9%
	More active	9	16.4%
	Less Active	23	41.8%
	About the same	17	30.9%
How many days per week do you spend on social media (such as Facebook, Twitter, Pinterest, YouTube, TikTok, etc.)?	0 days	1	1.8%
	2 days	3	5.5%
	3 days	1	1.8%
	4 days	2	3.6%
	5 days	1	1.8%
	6 days	2	3.6%
	7 days	45	81.8%
Valid		55	100.0%
Missing		9	
Total		64	

Table 9

Minutes Spent per Day on SNS and PA Compared to Most Women

SNS Usage	Minutes per Day	*N*	Percentage
Compared with most women your age, would you say that you are:	.00	6	10.7%
	More active	9	16.1%
	Less Active	23	41.1%
	About the same	18	32.1%
How much time per day do you spend on social media (such as Facebook, Twitter, Pinterest, YouTube, TikTok etc.)?	0 minutes	1	1.8%
	1-29 minutes	3	5.4%
	30 -59 minutes	11	19.6%
	60 minutes or more	41	73.2%
Valid		56	100.0%
Missing		8	
Total		64	

Table 10

Statistical Significance for Days per Week on SNS and PA Compared to Most Women

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	30.830			
Final	19.639	11.191	6	.083

.

Table 11

Statistical Significance for Minutes Spent per Day on SNS and PA Compared to Most

Women

Model	-2 Log Likelihood	Chi-Square	df	Sig
Intercept only	30.341			
Final	18.784	11.558	3	.009

.

Overall, when analyzing the association of days spent on SNS and perceived level

of PA, the null hypothesis was failed to be rejected stating, there is no statistically

significant association between days spent on SNS (measured by the number of

days/minutes spent) and perceived level of PA (Likert scale) among AA college women

18-25. When analyzing the association between time spent on SNS and the perceived

level of PA, the null hypothesis was rejected. The alternative hypothesis was accepted,

stating a statistically significant association between days spent on SNS (measured by the

number of days/minutes spent) and perceived level of PA (Likert scale) among AA

college women 18-25.

RQ4: What is the association between social connectedness (measured by social

connectedness score scale) and vigorous PA participation (measured by the

number of days/ minutes spent) while controlling for academic level and age

among AA college women aged 18-25?

For RQ4, four regression analysis were conducted: (a) association between

vigorous PA observed on time and AA feeling connected to others, (b) association

between vigorous PA observed on days and AA feeling connected to others, (c) association between vigorous PA observed on time and AA feeling connected to others with cofounders level of education and age, and (d) association between vigorous PA observed in days and AA feeling connected to others with cofounders level of education and age.

Two ordinal regression analyses without the cofounders were conducted to shed light on an association between the dependent and independent variables before the cofounder variable potentially had any influence. Even if the hypothesis test does not entirely change, there may be a slight change in the p-value being reported from the statistical analysis.

The analysis for vigorous PA measured in minutes and AA connected with other people reported, 32.7 % ($n = 18$) 1-29 minutes of vigorous PA and 65.5% ($n = 36$) feel that they can connect with others. However, 14.5% ($n = 8$) reported 60 minutes or more vigorous PA, and 14.5% ($n = 8$) felt they somewhat agree to feel they can connect with other people, table 12. The p-value reported for this statistical test was $p = 0.961$, which is well above the alpha threshold of 0.05. The null hypothesis was failed to be rejected, stating; there is no statistically significant association between social connectedness (measured by Likert scale) and vigorous PA participation (measured by minutes spent per day) among AA college women 18-25, table 13.

Table 12

Vigorous PA (Measured by Minutes Spent per Day) and Social Connectedness

Social Connectedness	Minutes per Day	*N*	Percentage
During the last seven days, how long did you do vigorous PA like heavy lifting, aerobic exercise, organized sports, or bicycling?	0 minutes	16	29.1%
	1 -29 minutes	18	32.7%
	30-59 minutes	13	23.6%
	60 minutes or more	8	14.5%
I can connect with other people	Strongly agree	10	18.2%
	Agree	36	65.5%
	Somewhat agree	8	14.5%
	Disagree	1	1.8%
Valid		55	100.0%
Missing		9	
Total		64	

Table 13

Statistical Significance of Vigorous PA (Measured by Minutes Spent per Day) and Social

Connectedness

Model	-2 Log Likelihood	Chi-Square	df	Sig
Intercept Only	30.856			
Final	30.561	.295	3	.961

Vigorous PA measured by days and AA feeling conducted to other people reported, 30.9% ($n = 17$) stating they had zero days of vigorous PA while 18.2% ($n = 10$)

strongly agree they feel connected to others. A total of 5.5% ($n = 3$) reported seven days

of vigorous PA, and 14.5% ($n = 8$) somewhat agree that they feel connected to other

people, table 14. A p-value of .532 was reported, which is above the alpha threshold of

0.05, causing the null hypothesis to fail to be rejected stating, there is no statistically

significant association between social connectedness (measured by Likert scale) and

vigorous PA participation (measured by the number of days per week) among AA college

women 18-25, table 15.

Table 14

Vigorous PA (Measured by the number of Days per Week) and Social Connectedness

Social Connectedness	Days per Week	N	Percentage
Vigorous PA refers to activities that take hard physical effort and make you breathe much harder than normal. During the last seven days, how many days did you do vigorous PA like heavy lifting, aerobic exercise, organized sports	0 days	17	30.9%
	1 day	7	12.7%
	2 days	7	12.7%
	3 days	9	16.4%
	4 days	5	9.1%
	5 days	6	10.9%
	6 days	1	1.8%
	7 days	3	5.5%
I can connect with other people	Strongly agree	10	18.2%
	Agree	36	65.5%
	Somewhat agree	8	14.5%
	Disagree	1	1.8%

Table 15

Statistical Significance of Vigorous PA (Measured by the number of Days per Week) and

Social Connectedness

Model	-2 Log Likelihood	Chi-Square	df	Sig
Intercept Only	56.499			
Final	54.299	2.200	3	.532

.

When adding the cofounders into the ordinal regression analysis for vigorous PA

measured by minutes and AA feeling connecting to other people, the significant p-value

did alter. AA college reported that 32.7% ($n = 18$) reported 1-29 minutes of vigorous PA,

and 65.5% ($n = 36$) reported they agree that they feel connected to other people. A total

of 23.6% ($n = 13$) reported 30-59 minutes of vigorous PA, while 14.5% ($n = 8$) reported

they somewhat agree they feel connected to other people (Table 16). From the analysis, a

$p = 0.151$ was reported, which is above the alpha threshold of 0.05, causing the null

hypothesis to fail to be rejected stating, there is no statistically significant association

between social connectedness (measured by Likert scale) and vigorous PA participation

(measured by the number of minutes spent per day among AA college women 18-25,

table 17.

Table 16

Vigorous PA (Measured by the number of Minutes Spent per Day) and Social

Connectedness with Cofounder Variables

Social Connectedness	Minutes per Day	*N*	Percentage
During the last seven days, how long did you do vigorous PA like heavy lifting, aerobic exercise, organized sports, or bicycling?	0 minutes	16	29.1%
	1 -29 minutes	18	32.7%
	30-59 minutes	13	23.6%
	60 minutes or more	8	14.5%
I can connect with other people	Strongly agree	10	18.2%
	Agree	36	65.5%
	Somewhat agree	8	14.5%
	Disagree	1	1.8%
Valid		55	100.0%
Missing		9	
Total		64	

Table 17

Statistical Significance of Vigorous PA (Measured by the number of Minutes Spent per

Day) and Social Connectedness with Cofounder Variables

Model	-2 Log Likelihood	Chi-Square	df	Sig
Intercept Only	86.088			
Final	77.995	8.093	5	.151

Cofounder's, level of education, and age were also added to the ordinal regression

measuring the association for vigorous PA measured by days and AA college women

feeling connected. A total of 30.9% ($n = 17$) reported zero days of vigorous PA, while 65.5% ($n = 36$) reported they agree they feel connected to others, table 18. The $p = 0.331$ was noted above the 0.05 alpha threshold set meaning. There is no statistically significant association between social connectedness (measured by Likert scale) and vigorous PA participation (measured days per week) among AA college women 18 25, table 19.

Table 18

Vigorous PA (Measured by the number of Days per Week) and Social Connectedness with Cofounder Variables

Social Connectedness	Days per Week	N	Percentage
Vigorous PA refers to activities that take hard physical effort and make you breathe much harder than normal. During the last seven days, how many days did you do vigorous PA like heavy lifting, aerobic exercise, organized sports	0 days	17	30.9%
	1 day	7	12.7%
	2 days	7	12.7%
	3 days	9	16.4%
	4 days	5	9.1%
	5 days	6	10.9%
	6 days	1	1.8%
	7 days	3	5.5%
I can connect with other people	Strongly agree	10	18.2%
	Agree	36	65.5%
	Somewhat agree	8	14.5%
	Disagree	1	1.8%
Valid		55	100.0%
Missing		9	
Total		64	

Table 19

Statistical Significance of Vigorous PA (Measured by the number of Days per Week) and

Social Connectedness with Confounder Variables

Model	-2 Log Likelihood	Chi-Square	df	Sig
Intercept Only	137.551			
Final	131.801	5.750	5	.331

Overall, even though the hypothesis did not change once adding the cofounders to the analysis, there was still a change in the reported p-value for each statistical test. Observing the analysis output for vigorous PA measured by minutes and AA feeling connected to others without the cofounders reported a $p = 0.961$, table 20. However, with the cofounders, level of education, and age added to the analysis, the p-value changed to $p = 0.151$, table 20. Due to the p-value changing, it can be stated that the cofounders influenced the outcome between the association of vigorous PA and AA college women feeling connected to others. A p-value change was observed when measuring the same variable, but vigorous being measured by days instead of minutes. When monitoring the analysis output for vigorous PA measured by days and AA feeling connected to others without the cofounder variable the $p = 0.532$ and with the cofounders $p = 0.331$, table 20. It can be stated that even though the hypothesis statement did not change, the p-value reports that the cofounder influenced the association between vigorous PA and AA college women feeling connected to others.

Table 20

Comparison table for Vigorous PA (Measured by the number of Days per Week) and

Social Connectedness with and without Confounder Variables

Social Connectedness	Sig	Sig
Variables	p-value without Cofounder's	p-value with Cofounder's
IV: Vigorous PA (days per week) DV: Social Connectedness Cofounders: Level of education and age	$p = 0.532$	$p = 0.331$
IV: Vigorous PA (minutes spent) DV: Social Connectedness Cofounders: Level of education and age	$p = 0.961$	$p = 0.151$

RQ 5: Is there a mediating effect of perception of weight control (measured by

scale score) with the association between social connectedness (measured by scale

score) and moderate PA (measured by the number of days/ minutes spent)

participation among AA college women aged 18-25?

There was a total of four regression analyses conducted to address RQ5: (1)

moderate PA measured by days and AA women feeling connected to others, (2) moderate

PA measured by minutes and AA women feeling connected to others, (3) moderate PA measured by days and AA women feeling connected to others while meditating how AA feel about their weight, and (4) moderate PA measured by minutes and AA women feeling connected to others while meditating how AA feel about their weight.

The first regression was designed to analyze moderate PA measured by days and AA women feeling connected to others. A total of 21.8% ($n = 12$) reported three days of moderate PA, while 65.5% ($n = 36$) reported they agree they can connect with others (Table 21). The $p = 0.69$ was reported, which is above the $p = 0.05$ alpha threshold. The null hypothesis failed to be rejected, stating no statistically significant association between social connectedness (measured by scale score) and moderate PA (measured by the number of days per week) participation among AA college women aged 18-25, table 22.

Table 21

Moderate activities (Measured by the number of Days per Week) and connections with other people

Connecting with Others	Days per Week	N	Percentage
Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. During the last seven days, how many days did you do moderate PA like carrying light loads, bicycling at a regular pa	0 days	7	12.7%
	1 day	12	21.8%
	2 days	10	18.2%
	3 days	12	21.8%
	4 days	3	5.5%
	5 days	8	14.5%
	7 days	3	5.5%
I can connect with other people	Strongly agree	10	18.2%
	Agree	36	65.5%
	Somewhat agree	8	14.5%
	Disagree	1	1.8%
Valid		55	100.0%
Missing		9	
Total		64	

Table 22

Statistical Significance among Moderate activities (Measured by Days per Week) and

Connections with other people

Model	-2 Log Likelihood	Chi-Square	df	Sig
Intercept Only	50.045			
Final	42.945	7.100	3	.069

The second regression reported moderate PA measured by time spent, which

36.4% ($n = 20$) reported 30-59 minutes of moderate PA. At the same time, 16.4% ($n = 9$)

said 60 minutes of more moderate PA participants, table 23. The independent values did

not change however, the dependent variable did change from days per week to minutes

per day. The significant value $p = 0.134$ was reported, which is above the $p = 0.05$ alpha

threshold, causing the null hypothesis to fail to be rejected stating, there is no statistically

significant association between social connectedness (measured by scale score) and

moderate PA (measured by the number of minutes spent per day) participation among

AA college women aged 18-25, table 24.

Table 23

Moderate activities (Measured by the number of Minutes Spent per Day) and

Connections with other people

Connecting with Others	Minutes per Day	N	Percentage
During the last seven days, how long did you do moderate PA like carrying light loads, bicycling at a regular pace, or jogging?	0 minutes	7	12.7%
	1-29 minutes	19	34.5%
	30-59 minutes	20	36.4%
	60 minutes or more	9	16.4%
I can connect with other people	Strongly agree	10	18.2%
	Agree	36	65.5%
	Somewhat agree	8	14.5%
	Disagree	1	1.8%
Valid		55	100.0%
Missing		9	
Total		64	

Table 24

Statistical Significance among Moderate activities (Measured by the number of Minutes

Spent per Day) and Connections with other people

Model	-2 Log Likelihood	Chi-Square	df	Sig
Intercept Only	31.022			
Final	25.446	5.576	3	.134

The third regression conducted was a mediation test to observe if the potential

effect, how in control one feels about their weight variable has on the association of the

independent (AA connecting with others) variable and dependent variable (moderate PA measured by days). The total effect of the independent variable and dependent variable, including the mediating variable, was $p = 0.0203$, table 25. Since this significant value was below the alpha threshold of 0.05, the null hypothesis was unable to be rejected stating, there is no statistically significant mediating effect of perception of weight control (measured by scale score) with the association between social connectedness (measured by scale score) and moderate PA (measured by days per week) participation among AA college women aged 18-25.

The fourth regression was a mediation analysis, which reported how in control one feels about their weight variable on the association of the independent (AA connecting with others) variable and dependent variable (moderate PA measured by the number of minutes spent per day). The total effect reported was $p = 0.722$, which is above the alpha threshold of 0.05, causing the null hypothesis to fail to be rejected stating, there is no statistically significant mediating effect of perception of weight control (measured by scale score) with the association between social connectedness (measured by scale score) and moderate PA (measured by the number of minutes spent per day) participation among AA college women aged 18-25.

Table 25

Moderate activates (Measured by the number of Minutes Spent per Day/ Days per Week) and Connections with other people

Connecting with Others	Sig
Variables	p-value
IV: Connecting with others (days per week)	$p = 0.203$
DV: Moderate PA(measured by days)	
Mediating variable: how in control one feels about their weight	
IV: Connecting with others (days per week)	$p = 0.722$
DV: Moderate PA(measured by number of minutes spent per day)	
Mediating variable: how in control one feels about their weight	

Overall, the mediating variable, how in control one feels about their weight, did statistical affect the association for moderate PA participation measured by days per week. However, the mediating variable did not statistically affect the association for moderate PA participation measured by the number of minutes spent per day. AA women feel they can connect to others.

Additional Significant Results

Besides the reported results relevant to the main independent and dependent variables for RQs one -five, some other significant effects were revealed from the

regression analysis. For RQ 1, usage of both Facebook and Snapchat for greater than four hours showed a statistically significant association, $p < 0.05$ among AA college women aged 18-25. For RQ 2, usage of Twitter for greater than four hours was statistically significant, $p < 0.05$. Use of Instagram for 2-3 hours per day was also statistically significant, $p < 0.05$.

Summary

Vigorous PA participation (measured by the number of days per week/minutes spent per day) and SNS utilization were statistically significant, which led to the rejection of the first null hypothesis and the acceptance of the first alternative hypothesis for RQ 1. For RQ 2, moderate PA participation (measured by the number of days per week/minutes per day) and SNS utilization were also statistically significant, allowing the researcher to reject the second null hypothesis and accept the second alternative hypothesis. In RQ 3, the first regression run, the independent variable (activity level compared to most women) and the dependent variable (days per week on SNS) were found not statistically significant, leading to failure to reject the null hypothesis. However, when analyzing the dependent variable in minutes spent for RQ 3, the outcome was statistically significant, leading to the rejection of the null hypothesis and accepting the alternative hypothesis. For RQ 4, the results were reported as not statistically significant, which failed to reject the null hypothesis. Thus, concluding that while controlling for level of education and age, there is no association between SNS connectedness and vigorous PA (measured by days per week/minutes per day) among AA college women. Finally, for RQ 5, the results were found not to be statistically significant, which led to failing to reject the null

hypothesis, stating there is no statistically significant medication between social connectedness and perception of weight control and moderate PA participation among AA college women 18-25.

Chapter 5 consist of a broader interpretation of the study findings while comparing to other existing work. I also present limitations found within the current study, recommendations drawn from the study's findings, implications, and the overall conclusion drawn from this study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

PA participation among AA college women aged 18-25 is a challenging problem and is associated with chronic diseases such as Type II diabetes, cancer, obesity, heart disease, and stroke (Joseph et al., 2015). Only 34% of AAs achieve the recommended PA levels, representing the lowest prevalence for any race and sex demographic group (CDC, 2014). Researchers have reported specific barriers AA college women face, which contribute to not meeting the recommended PA guidance. For example, intrapersonal (i.e., lack of time, knowledge, and motivation) and interpersonal (i.e., family/caregiving responsibilities, lack of social support, and lack of PA partner; Joseph et al., 2015).

Social media platforms are one of the areas where AA college women aged 18-25 receive social support (Pew Research Center, 2021). According to Pew Research Center (2021), Instagram, Snapchat, and TikTok have a strong following among AA women aged 18-25. For example, 71% of AA women aged 18-25 reported using Instagram, 65% reported using Snapchat, while roughly half say the same for TikTok.

The purpose of this study was to investigate if the use of social media, specifically SNS, is associated with participation in PA among AA college women aged 18-25 in Virginia. Empirical evidence indicates that several factors can influence a person's decision to be physically active (Cavallo et al., 2012).

The results of the present study revealed that there was a statistically significant association among (a) SNS and vigorous PA among AA college women aged 18-25, (b) SNS and moderate PA among AA college women aged 18-25, and (c) time spent

(measured by minutes) and perceived level of PA among AA college women aged 18-25. There was no statistically significant association among (a) time spent on SNS (measured by days) and perceived level of PA among AA college women aged 18-25, (b) social connectedness and vigorous PA participation (measured by days/minutes spent per day) while controlling for level of education and age among AA college women aged 18-25, and (c) no mediating effect of perception of weight control with the association between social connectedness and moderate PA participation among AA college women aged 18-25.

This chapter consists of the interpretation of the study findings, limitations of the current study, recommendations drawn from the findings, the social change implications, and an overall conclusion.

Interpretation of the Findings

The hypothesis relating to RQ1 showed a statistically significant association between SNS usage and vigorous PA (measured by the number of days/minutes spent) among AA college women aged 18-25. Furthermore, RQ2 also showed a statistically significant association between SNS usage and moderate PA participation (measured by the number of days/minutes spent) among AA college women aged 18-25. Moderate PA is defined as walking briskly, cleaning heavily, and mowing the lawn (Harvard T.H. Chan School of Public Health, 2021). At the same time, vigorous PA is defined as hiking, jogging, bicycling fast, and basketball games (Harvard T.H. Chan School of Public Health., 2021). For this study, SNS was defined as Facebook, Twitter, Snapchat, Blogs, Myspace, WhatsApp, YouTube, and Pinterest (see Boyd & Ellison, 2007; Nguyen, 2013;

Pew Research Center, 2018a). Per the PA recommended guidelines, young adults should participate in at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity PA (CDC 2018a). The findings for RQ 1 and RQ 2 agree with the core findings of previous studies (e.g., Florez et al., 2018), indicating that high usage of SNS is associated with lower PA participation levels. Other research studies suggested that social support gained from SNS may be related to higher levels of PA participation among AA college women. There is considerable mixed evidence regarding the association between SNS and PA participation among AA college women. Florez et al. (2018) conducted a cross-sectional study that consisted of 616 AA women. The researcher investigated social support via all social networks (i.e., family/friends/coworkers) in this study. Florez et al. (2018) reported that socially isolated women were more likely to meet the PA guidelines, potentially because their networks were discouraging for PA. However, those who were more socially involved were less likely to meet the PA guidelines. Per the findings in my study, 24.5% ($n = 13$) of AA women participated in vigorous PA, while 35.8% ($n = 19$) participated in moderate PA participation. Less than half of my study population met the recommend PA guidance of at least 30 minutes of vigorous to moderate PA participation a week. This may be due to the high usage of SNS and AA college women not following families/friends who are socially active. If a social circle is discouraging, a person will be less motivated to meet the expected PA guidance (Florez et al., 2018).

The findings for RQ3 regarding time spent agree with previous studies. However, when observing for how many days per week, the results were not in agreement. Gothe (2018) conducted a study with 96 AA women, investigating the correlation between self-efficacy and PA participation. In this study, self-efficacy was measured by participants' beliefs in their ability to exercise at least five times a week for 30 minutes per session over the next 12 weeks. The researcher reported that high self-efficacy participants could meet the PA recommended guidelines, especially when gaining social support from their friends and family. For this current study, 41.8% ($n = 23$) of AA college women were less active than most women. However, 73.2% ($n = 41$) participated in SNS for at least 60 minutes or more. By having a high SNS usage and remaining less active than most women, it can be stated that AA college women are not receiving the social support they need from their friends/family to be physically active. Gothe reported that having high social support leads to even higher self-efficacy, resulting in AAs meeting the recommend PA guidance.

The findings for RQ4 and RQ5 regarding social connectedness, SNS usage, and PA participation did not fully agree with previous studies. Zuo et al. (2021) conducted a study that examined the associations between sharing PA experiences on SNS and social connectedness during the COVID-19 pandemic among AA women aged 18-25. Zuo stated there was a statistically significant correlation between social connectedness and PA participation among AA women. Their study concluded that sharing PA experiences on SNS did create a positive, healthy, and energetic personal image, resulting in AA women being more physically active due to participants gaining recognition from others.

However, my study concluded there were no association between social connectedness and PA participation among AA college women aged 18-25. Zuo et al.also reported there was no mediation between social connectedness and perception of weight control and PA participation, which does agree with my study. Zuo et al. said that AA women who used SNS to maintain existing social relationships had a more robust social adaptability and less loneliness, causing them to be more active than their peers. The more connected AA women were during the pandemic, the higher their self-esteem became, causing them to have positive emotions. Positive online self-presentation via SNS enabled participants to shape a positive social image on the network to feel more connected. Once the COVID-19 outbreak began to wane (prior to the Delta variant resurgence), self-presentation on SNS had changed, making it more common to discuss a person's health and preventive behavior (Zuo et al., 2021). For example, athletes spread positive information through SNS, encouraging the community to engage in appropriate PA at home, establishing positive imaging.

Limitations of the Study

Although this study obtained high-quality data from AA college women aged 18-25 via Survey Monkey from the research university, which allowed for highly rigorous statistical techniques to answer the proposed research question, it is essential to recognize the limitations. For example, the proposed target population for this study was 80 AA college women aged 18-25. However, only 64 responses were collected for this study. Even though the target population was not met, the study is still significant because only

55 replies needed to be collected per the G*Power calculation provided in chapter three. This limitation may have been caused by the survey being administered towards the tail end of the school year semester.

Within this study, the internal validity was high due to an ANCOVA test being conducted to avoid cofounder variables such as level of education and age altering the findings within the study. However, the high internal validity leads to low external validity, causing the results not to be generalizable to other populations. Therefore, having a high internal over external validity is essential when conducting a study because it increases the overall acceptance of the research findings by others (Salazar et al., 2015).

The COVID-19 pandemic was an unexpected limitation within this study. This pandemic resulted in participants being quarantined in their homes for months, causing them not to have access to workout facilities (i.e., fitness centers and recreation areas), resulting in participants being physically active at home. In addition, due to this pandemic, SNS usage increased tremendously, accounting for 65 minutes or more of daily use. (WHO, 2021).

Even though there were three major limitations presented in this study, it remains significant. This study can be generalized to other research universities interested in understanding an association between SNS usage and PA participation among AA college women aged 18-25.

Recommendations

Although this current study and previous studies have shown a statistically significant association between SNS usage and PA participation among AA college women aged 18-25, more studies can be developed to observe similar patterns in other races/ethnicities (i.e., Whites, Latino/Hispanic, and Asian). Along with observing different age range. Lastly, these future studies can examine more independent variables and other potential cofounders, leading to a more holistic view of the factors that potentially influence PA participation.

Implication

In this study, I have shown an association between SNS usage and PA participation among AA college women aged 18-25, and the findings agree with the previous studies, Florez et al., 2018. Furthermore, I have also shown through this study that there is an association between minutes spent on SNS, which agrees with previous studies (Gothe, 2018). However, when observing the number of days spent on SNS and PA participation, the findings did not agree with previous studies. Lastly, when investigating the association between social connectedness and SNS usage, the results did not agree to prior studies (Zuo et al., 2021).

Even though these findings can be overwhelming, implicating a positive social change is essential. Due to the high usage of SNS, implementing more positive imaging on the different SNS platforms can encourage AA college women to be more physically active. For example, there can be a more positive discussion on the various platforms (i.e., why PA participation is essential, becoming more physically active with or without

facilities open, sharing challenges one encounters with one another). Having more open dialog regarding the importance of meeting PA recommended guidance can encourage more AA women to become more active with their peers.

Conclusion

Overall, through this study, it has been shown that there is a statistically significant association between SNS usage and PA participation among AA college women aged 18-25. However, there is no statistically significant association between social connectedness and PA participation among AA college women aged 18-25. Previous studies have reported both positive and negative viewpoints of SNS usage and PA participation. Some studies have shown that SNS usage causes a positive correlation toward PA participation (Zuo et al., 2021). At the same time, others, including this study, have shown a negative correlation between SNS usage and PA participation among AA college women aged 18-25.

According to the goals outlined by Healthy People 2020, when observing all races/ethnicities, AA women remain disproportionately affected by lower levels of PA participation, causing them to be at greater risk for chronic diseases such as obesity. This study highlights SNS usage and social support via the different platforms. Additional work needs to be done to understand better how the norms that arise from the SNS platform shape health promotion and disease prevention among the AA women population.

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Appendix A**:** Social Media Utilization and Physical Activity Assessment

I have permission to reproduce the questionnaire listed below.

 Hello Participants,

To complete the survey, please follow the instructions for each section listed below. This

survey should only take approximately 30 minutes to complete. I greatly appreciate you

taking on your time to complete this survey. If you have any questions, please feel free to

contact Ms. Carmen Brown at carmen.brown2@waldenu.edu. Once again, thank you so

much for your time.

Questionnaire

Social Media Utilization and Physical Activity Assessment Questionnaire

Each section of the questionnaire follows the three primary constructs of the TPB

which are as follows: (a) a person's attitude toward performing the behavior, which is a

person's beliefs (i.e., positive or negative) about the behavior; (b) perceived norms,

which include the perception of those with whom the person interacts closely with; and

(c) self-efficacy, which involves a person's perception that he/she can perform the

behavior under a variety of circumstances (Hackman & Knowlden, 2014). It is essential

to have a valid and reliable instrument for ensuring accurate results. To ensure reliability

and validity, I will pilot test the modified instrument with participants who meet the

inclusion criteria to assess readability, content, and format. This process will assist with

eliminating any potential issues that may occur with the instrument. I will incorporate any recommended changes into the final version of the instrument.

<u>Instrument Description</u>

The name of the survey for the proposed study is "**Social Media Utilization and Physical Activity Assessment Questionnaire."** The survey will have five sections: Demographic Information, Social Network, Physical Activity, Diet and Overall Health, Health Information, and Opinions. Initial Screening Question: (If the respondent selects female, then they will be allowed to proceed with the survey. If the respondent selects male, then they will not be allowed to continue to the survey questions:

What is your sex?

- Male

- Female

What is your race?

- White

- Hispanic or Latino

- Black or African American

- Native American or American Indian

- Asian / Pacific Islander

- Check all that apply

Demographic Information is items 1-3 on the survey.

Question 1: "Where do you currently live?" Participants will select the response that best describes their living arrangement:

- Campus residence hall

- Sorority house

- Other college housing (i.e., campus apartment)

- Off-campus housing

Question 2: What is your academic level? Participants will select the response that best describes their academic level.

- Freshman

- Sophomore

- Junior

- Senior

- Graduate-level

Question 3: What is your age range? Participants will have to write their age into the blank space:

Social *Network Sites* are items 4-5 on the survey.

Question 4: Please indicate, on average, how often do you use each of the following social media platforms. Participants will complete a chart which will have all the social media sites previously listed. The participants will select one box per site, which

describes how often they use each specific social networking site. The choices will

include the following Social Media Platforms:

- Facebook

- Twitter

- Pinterest

- Snapchat

- Instagram

- YouTube

- LinkedIn

- WhatsApp

How often one uses the sites will be:

- 4 hours or more per day

- 3 hours or more but not 4 per day

- 2 hours or more but not 3 per day

- 1 hour or more but not 2 per day

- less than 1 hour per day

- I do not use these media

Questions 5: Please indicate the use of social media for the following reasons by selecting

all that apply. One check per behavior and social media site. Social Media Sites include:

- Facebook

- Twitter

- Pinterest

- Snapchat

- Instagram

- YouTube

- LinkedIn

- WhatsApp

- I use none of the above

Choices for behavior will be:

- I use this site to post about my food habits or likes.

- I use this site to post about my PA habits/likes.

- I use this site to post my weight.

- I use this site to post about my fitness goals.

- My friends use this site to post about their PA habits/likes.

- My friends use this site to post about their weight.

- My friends use this site to post about their fitness goals.

- I use this site to look up health-related topics of interest.

- I use this site to seek advice or support from others regarding my health.

- I use this site to make plans for group activities regarding my health (i.e.,
  going to the gym)

- I use this site to post about what I do regarding food or activities (i.e.,
  going out to eat or to the gym)

- None of these reasons

Physical Activity (items 6-11)

Question 6: During the last seven days on how many days and for how long did you do

vigorous PA like heavy lifting, aerobic exercise, organized sports, or bicycling?

Participants will have to answer two parts of this question: days per week and minutes

per day. Participants will select responses that best describe their PA level for both days

per week and minutes per day.

Days per week will be:

- 0 days

- 1 day

- 2 days

- 3 days

- 4 days

- 5 days

- 6 days

- 7 days

Minutes per day will be:

- 0 minutes

- 1-29 minutes

- 30-59 minutes

- 60 minutes or more

Question 7: During the last seven days, how many days and for how long did you do

moderate PA like carrying light loads, bicycling at a regular pace, or jogging?

Participants will choose a response that is the best fit for them.

Days per week will be:

- 0 days

- 1 day

- 2 days

- 3 days

- 4 days

- 5 days

- 6 days

- 7 days

Minutes per day will be:

- 0 minutes

- 1-29 minutes

- 30-59 minutes

- 60 minutes or more

Question 8: During the last seven days, how many days and for how long did you walk

for at least 10 minutes at a time? Participants will choose a response that is the best fit for

them.

Days per week will be:

- 0 days

- 1 day

- 2 days

- 3 days

- 4 days

- 5 days

- 6 days

- 7 days

Minutes per day will be:

- 0 minutes

- 1-29 minutes

- 30-59 minutes

- 60 minutes or more

Question 9: Over the past seven days, how many minutes per day on average did you use a computer or other electronic devices? Participants will choose a response that is the best fit for them.-.

Days per week will be:

- 0 days

- 1 day

- 2 days

- 3 days

- 4 days

- 5 days

- 6 days

- 7 days

Minutes per day will be:

- 0 minutes

- 1-29 minutes

- 30-59 minutes

- 60 minutes or more

Question 10: How much time do you spend on social media (such as Facebook, Twitter, Pinterest, YouTube, etc.)? Participants will choose a response that is the best fit for them. Days per week will be:

- 0 days

- 1 day

- 2 days

- 3 days

- 4 days

- 5 days

- 6 days

- 7 days

Minutes per day will be:

- 0 minutes

- 1-29 minutes

- 30-59 minutes

- 60 minutes or more

Question 11: Compared with most women your age, would you say that you are which of the following: Participants will choose a response that is the best fit.

- More active

- Less active

- About the same

- Not applicable

Diet and Overall Health (items 12-19)

Question 12: During the past seven days, how many times did you eat or drink the following. Participants will have to complete a chart that asks several different behavior questions based on times per week. Each behavior listed should have a corresponding time selected.

Question 13: In general, how healthy do you consider your overall diet? Participants will select a response that best describes their diet:

- Excellent

- Very good

- Good

- Fair

- Poor

- Not at all

Question 14: Compared with most women your age, would you say that you eat as which of the below. Participants will choose a response that is the best fit.

- More healthily

- Less healthily

- About the same

Question 15: How do you describe your weight? Participants will choose a response that is the best fit:

- Very underweight

- Slightly underweight

- About the right weight

- Slightly overweight

- Very overweight

Question 16: Which of the following are you trying to do about your weight? Participants will choose a response that is the best fit.

- Lose weight

- Gain weight

- Stay the same weight

- I am not trying to do anything about my weight

Question 17: How would you describe your overall health? Participants will choose a response that is the best fit.

- Excellent

- Very good

- Good

- Fair

- Poor

Question 18:

How much do you weigh?

- Provide weight in pounds.

Questions 19: How tall are you?

- Provide height in feet and inches.

Health Information and Opinions

Question 20: Which of the sources below do you use to gather information about the following subjects? Participants will complete a table that lists different types of health information. Each health information item should have a corresponding source selected

Question 21: I am in control of my weight. Participants will choose a response that is the best fit for them:

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 22: Diet plays an essential role in my overall health. Participants will select 1 out of 6 choices that best fit them:

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 23: Physical Activity plays an essential role in my overall health. Participants

will have to select 1 out of 6 choices that best fit them.

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Social Connectedness Scale- Revised

Question 24: I feel comfortable in the presence of strangers

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 25: I am in tune with the world

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 26: Even among my friends, there is no sense of brother/sisterhood

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 27: I fit in well in new situations

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 28: I feel close to people

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 29: I feel disconnected from the world around me

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 30: Even around people I know, I don't feel that I really belong

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 31: I see people as friendly and approachable

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 32: I feel like an outsider

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 33: I feel understood by the people I know

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 34: I feel distant from people

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 35: I am able to relate to my peers

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 36: I have little sense of togetherness with my peers

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 37: I find myself actively involved in people's lives

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 38: I catch myself losing a sense of connectedness with society

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 39: I am able to connect with other people

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 40: I see myself as a loner

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 41: I don't feel related to most people

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 42: My friends feel like family

- Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Question 43: I don't feel I participate with anyone or any group

Strongly agree

- Agree

- Somewhat agree

- Somewhat disagree

- Disagree

- Strongly disagree

Thank You

Appendix B: Permissions

...\Desktop\School\Dissertiaion PUBH9001\15th Quarter\Mail - Carmen Brown -

Outlook 10.7.2021.pdf

..\Desktop\School\Dissertiaion PUBH9001\15th Quarter\SOCIAL CONNECTEDNESS
SCALE-REVISED.pdf