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Barriers to Physical Activity Among Asian Indian Women in the United States

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Abstract

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MSN, California State University Dominguez Hills, 2011

BSN, Christian Medical College, Vellore, 2005

Dissertation Submitted in Partial Fulfillment

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Doctor of Philosophy

Nursing- Interdisciplinary Health

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Abstract

Asian Indian women have a higher prevalence of cardio-metabolic diseases compared to women from other ethnicities and Asian Indian men in the United States. This is due to the lower level of physical activity behaviors among this population. The purpose of this study was to explore the perceived barriers to physical activity among Asian Indian women living in the United States. The theoretical framework that guided this study was Bandura's social cognitive theory and the research design used was qualitative ethnographic approach. Participants were recruited from 2 Christian churches in Southern California using purposive and snowballing sampling strategies. Fifteen participants were selected for the study and 2 focus group interviews were conducted to collect the data. The data analysis was done using NVivo 12 plus software, and the information collected was coded and categorized into themes. Consistent with social cognitive theory, the findings of the study revealed a reciprocal relationship among personal, social, and environmental barriers to physical activity among Asian Indian women living in the United States. The study contributes to social change by providing an understanding of the barriers to assist healthcare providers when developing culturally sensitive interventions for Asian Indian women to improve their level of physical activity and reduce the risk of cardiometabolic disorders.

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Dedication

This research is humbly dedicated to my Appa, Mr. Mathews Abraham, who truly inspired me to achieve the highest standard of education and to pursue academic excellence. I am who I am today because of his solemn prayers and blessings.

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I acknowledge the saving grace of my Lord and my personal savior, Christ Jesus, who guided my life thus far and lavished His strength and wisdom upon me to successfully achieve this degree. I once again experienced: “With God all things are possible.” (Matthew 19:26 b, NKJV, Bible)

I am honored and proud to be a part of the fabric of the prestigious Walden University and its education that matched my life and accelerated my career for a higher purpose. I am thankful to my committee chair, Dr. Linda Matheson, for her continual support and guidance to keep me on the right track and attain this goal. I am also thankful to my committee member, Dr. Eileen Fowles, for her insightful suggestions and recommendations.

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Chapter 1: Introduction to the Study

Introduction

The Asian Indian population is the second largest Asian group and one of the most rapidly growing ethnic groups in the United States (Mukherjea et al., 2013). The United States Census Bureau (2016) reported that Asian Indian women (AIW) comprise 47.9% of the total Asian Indian population in the United States. When compared with other ethnicities including Japanese, Chinese, Hispanics, African Americans, and Caucasians, the mortality rate for cardiovascular disease is 33% higher among Asian Indians and is the leading cause of death in the United States (Ardeshna et al., 2018; Joshi et al., 2007). Asian Indian women (AIW) have a higher rate of chronic diseases such as cardiovascular disorders and diabetes mellitus while compared to Mexican American, non-Hispanic Black, and non-Hispanic White female population in the United States (Venkatesh &Weatherspoon, 2017). The increased rate of cardio-metabolic disorders among AIW in the United States is alarming as it affects the quality of life, and hence the need for investigation of the causative factors.

The high prevalence of cardio-vascular diseases and diabetes mellitus causes decreased life expectancy and impaired quality of life. Factors that cause an increase in the number of patients with cardio and metabolic disorders include obesity and physical inactivity (Chang et al., 2018). Genetic predisposition to diabetes and heart disease along with acculturative changes increases the incidence and prevalence rates of diabetes and cardiovascular diseases among AIW (Misra, 2009). The main causes of these morbidities among AIW are the lack of physical activity (PA) and consumption of an unhealthy diet

(Daniel, Abendroth, & Erlen, 2018). One of the goals identified for the Healthy People 2020 is PA (Healthy People 2020, n.d.). The health disparities related to lack of PA includes cardio-metabolic disorders and decreased quality of life. Adequate PA allows individuals to lead a quality lifestyle by increasing their level of energy and improving both their physical and emotional wellbeing. The reason for studying decreased PA among AIW population is to understand the cultural barriers and acculturation factors, which prevent AIW from engaging in adequate PA. The major step for developing culturally relevant approaches for promotion of PA and addressing the health challenges associated with lack of PA among AIW in the United States is to identify and rectify the barriers. The potential social implication of this study is to understand the barriers to adequate PA and make recommendations to reduce the prevalence and incidence of cardio-metabolic disorders among this population. This section includes background of the study, research problem statement, purpose of the study, research questions, theoretical foundation, nature of the study, definitions, assumptions, scope and delimitations, limitations and significance of the study.

Background

The increased risk of cardio-metabolic disorders among AIW in the United States is due to lack of PA. The changes in lifestyle related to acculturation may be a potential cause for the physical inactivity and sedentary lifestyle. The immigration of Asian Indians to United States started in 1800s. Saran and Eames (1980) indicated that the immigration of Asian Indians to United States occurred in three major waves of immigration. Around 7,300 male immigrant workers from Punjab came to the United

States between the 1890s and 1900s (Saran & Eames, 1980). The United States Immigration Act of 1965 enabled the second wave of immigration that resulted in Asian Indians obtaining white-collar jobs, and the third wave of immigration was the result of family reunification visas of individuals from the second wave (Saran & Eames, 1980). The Asian Indians brought with them their original culture. The women population of this culture have additional responsibilities of care giving, child rearing, and transmittance of traditions, values, and principles to next generation. This causes acculturation stress leading to decreased focus on health promotion activities, thereby increasing the risk of cardio-metabolic disorders among AIW in the United States (Mehta et al., 2010).

Cardio-metabolic disorders create a major threat to the health of AIW living in the United States. The 10 leading causes of death in the United States include heart disease and diabetes (Center for Disease Control and Prevention [CDC], 2016). For Asian population in the United States, heart disease and diabetes were the second and fifth leading cause of mortality accounting for 21.3% and 4% of total deaths, respectively (CDC, 2016). According to Artesian et al. (2018), the prevalence rate of coronary artery disease (CAD) and diabetes among Asian Indian population was three times more in the United States compared to other ethnicities and United States population. Iliodromiti et al. (2016) found that both genders of South Asian descent required increased level of PA to mitigate the risk of cardiovascular and diabetic diseases in comparison to the individuals of European descent with similar age and body mass index. Asian women have a higher waist to weight ratio compared to other United States adults, suggesting increased potential for cardiovascular disease due to reduced PA (Bajaj et al., 2014). The

AIW population is more prone to have chronic diseases compared to women of Mexican American, non-Hispanic black, and non-Hispanic whites in the United States (Venkatesh &Weatherspoon, 2017). Hypertension and diabetes are reported risk factors for CAD in AIW and is associated with increased morbidity and mortality while compared to Caucasians (Ardeshna et al., 2018). The decreased level of PA is a causative factor to the intensified occurrence of cardiovascular disease and diabetes among AIW in the United States (Bajaj et al., 2014; Daniel et al., 2018).

Physical activity enhances glycemic control and may prevent or delay the onset of diabetes mellitus among adults (Chang et al., 2018; Iliodromiti et al., 2016). Lack of PA is the main cause of cardio-metabolic disorders. Healthy people 2020 (n.d.) suggested that the barriers to conduct PA include inadequate time, lower level of motivation, perception of poor health, and lack of social support. An understanding of barriers to PA will illuminate the reasons for decreased PA among AIW living in the United States leading to increased cardiovascular diseases and diabetes mellitus.

Problem Statement

Asian Indian women have a higher prevalence of obesity and cardio-metabolic diseases compared to women from other ethnicities and Asian Indian men in the United States (Ardeshna et al., 2018; Chopra et al., 2013; Joshi et al., 2017; Venkatesh et al., 2017). A significant element in cardio-vascular diseases and diabetes mellitus among AIW living in the United States is PA (Daniel et al., 2018). The recommendation of the Healthy People 2020 is to increase the number of adults who conduct moderate intensity PA for at least 150 minutes per week, 75 minutes per week of vigorous intensity, or an

equivalent combination (Healthy People 2020, n.d.). Regular PA enhances the overall quality of life and decreases the risk of cardio and metabolic disorders. The factors for decreased PA among women in general include self-efficacy, competency, confidence, health-status, availability of personal time, social support, knowledge, and motivation. (Hanlon et al., 2017; Joesph et al., 2015).

Mehta et al. (2010) discussed the cultural challenges such as obligations to family and expectations from different roles of AIW as a potential concern for carrying out self-care behaviors including PA among this population. The health disparities related to PA among AIW in the United States indicate the necessity for culturally appropriate interventions to enhance PA in this high-risk minority population. A crucial aspect for researchers to contemplate when designing culturally pertinent PA interventions for AIW is the consideration on specific barriers that limit their participation in PA. There are very few researches conducted in the last five years addressing the need for PA among AIW in the United States (Babakus &Thompson, 2012; Daniel et al, 2017; Mehta et al., 2010). There is only one article that investigated the barriers to PA among AIW in United States, and the findings included role expectations as a core theme with four subthemes including lack of time, loss of interest, diminished social support, and environmental constraints (Daniel et al., 2018). This reveals a gap in the current literature regarding the barriers to PA among AIW in the United States. The dearth of studies indicates the need for a research to examine the perceived barriers associated with PA among AIW in the United States.

Purpose of the Study

The purpose of this study was to explore the barriers to PA among AIW living in the United States. This study aimed to investigate the challenges of AIW in the United States to perform adequate PA. To have a successful intervention on PA geared towards AIW, one must understand the challenges for performing exercise and maintaining consistency. This study provided information on prevalent barriers to PA among AIW in the United States and illustrate crucial aspects for researchers to consider and leverage when planning culturally appropriate PA interventions for this population. The participants in this study had the opportunity to express their perceived barriers and challenges for doing PA and continuing the regimen effectively.

Research Question

This study answers the question: What are the perceived barriers to PA among AIW in the United States?

Theoretical Framework

The theoretical framework used for exploring the perceived barriers to PA among AIW in the United States is Bandura's social cognitive theory (SCT). Bandura (2004) indicated that the core elements of SCT are knowledge, perceived self-efficacy, outcome expectations, goals, perceived facilitators, and impediments. The social cognitive theory (SCT) is a theory of human behavior with integrative principles of broad applicability (Bandura, 1998). According to Bandura (2001), the influences of social environment and the person's cognition partially shaped and controlled the person's behavior. The triadic reciprocal determinism indicated by Bandura (1989) denoted behavior, cognition and

other personal factors, and environmental factors as determinants that has bidirectional influence (see Figure 1). The person can be a responder to change and an agent for change. Chapter 2 will provide a more detailed explanation of SCT.

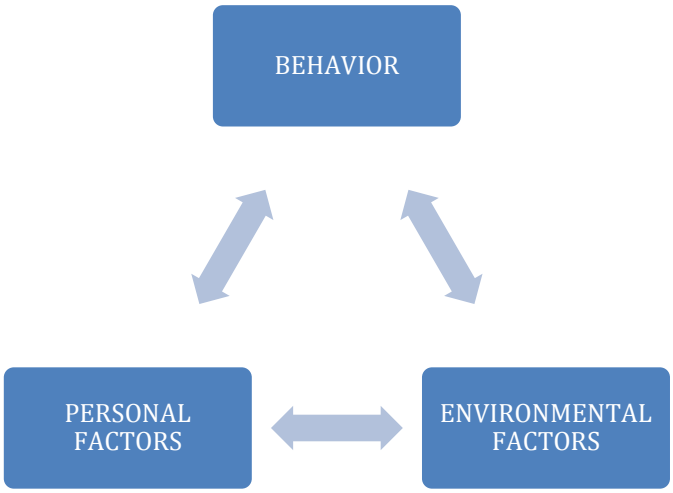

Figure 1. Social cognitive theory (Bandura, 1984)

The SCT is appropriate for this study as it seeks to understand the personal and environmental factors that influence the AIW's PA through a qualitative design. The descriptive experiences of the AIW in the United States on barriers to PA will shed light on health practices, perceived self-efficacy, outcome expectations, health goals and perceived facilitators of this population.

Nature of the Study

This research used a qualitative design to explore the perceptions of barriers to PA among AIW in the United States. The qualitative tradition that focuses on the culture of a specific group of people is ethnography (Creswell, 2013). The key concept studied in this project is the barriers to PA. The strategy for this research involved understanding the barriers to PA among AIW, which is a specific culture-sharing group. This study

learned from the women population of Asian Indians living in the United States and facilitated understanding perceptions that act as challenges for performing PA. The use of ethnographic approach revealed information on perceived barriers embedded in the Asian Indian culture.

The data were collected from AIW living in the western region of United States. The data collection for this study was through focus group interviews. The topics for data collection were PA, barriers, and cultural expectations. These topics served as a guide for the focus group interviews among AIW. The researcher used a written topic guide and encouraged the participants to converse without any hesitance on all the topics in their own words. According to Polit and Beck (2012), the moderator of a focus group uses a written set of questions and viewpoints of many people obtained in a short time to guide the discussion.

Definition of Terms

Asian Indian women: Women who are of Asian descent with ancestors in India. These women are born in India and are immigrated to the United States through immigrant parents, spouses, or through job visa (Daniel et al., 2017).

Perceived barriers: Factors that can act as a hindrance for attaining the necessary changes in the behavior of an individual (Bandura, 2004).

Self-efficacy: The ability of an individual to succeed situations or accomplish a specific task (Bandura, 2004).

Physical activity: Any bodily movement produced by skeletal muscles that requires energy expenditure (World Health Organization, n.d.)

Assumptions

I assumed that AIW in the United States have a compelling culture that guides and controls their perspectives about PA and the experiences that enhance health activities. The AIW population are women born in India and migrated to the United States and are between the age of 30 and 65 years. The SCT will demystify personal and environmental barriers affecting the performance of PA among AIW in the United States as it did among the African American adult population (Gothe, 2016). The participants will clearly comprehend the questions and provide honest feedback regarding barriers to PA during focus group interviews (Polit & Beck, 2012). The participants will not adjust their answers to look good or accepted. Finally, the findings represented professionally will avoid any biases and influences on the study samples (Creswell, 2013). These are significant assumptions, as the study will include direct encounter with the AIW in the United States. The AIW population in the United States inherited their original culture, which includes the roles, values, and beliefs that may act as a challenge for adequate PA (Misra et al., 2017). Hence, the assumptions were indispensable to explore the perceived barriers among AIW in the United States.

Scope and Delimitation

The study aimed to identify the barriers to PA among AIW in the United States. Participants included AIW who migrated from India, and resided in the state of California, United States. The barriers to PA among this population contributed to the growing body of research that studies the cultural sensitivity for interventions and begin the investigation on how the women in India can benefit from the findings. The rationale

for choosing this problem is the increasing prevalence of cardio-metabolic disorders among AIW population due to sedentary lifestyle (Ardeshna et al., 2018). There are modifiable and nonmodifiable risk factors for cardio-metabolic disorders. This study aimed at investigating the lack of adequate PA, which is a modifiable risk factor (Leon et al., 2015). I considered studying other modifiable risk factors such as poor nutritional habits and obesity that increases the incidence of cardio-metabolic disorders (Ardeshna et al., 2018; Mehta et al., 2010). These are complex issues that require enormous time for completion of the study. Another modifiable risk factor for cardiac diseases and diabetes is smoking (Leon et al., 2015). This is not relevant among the female population of Asian Indian immigrants in the United States (Li et al., 2013). Therefore, I did not focus on nutritional factors and smoking for this study. This study revealed the cultural barriers related to acculturation and assisted in planning culturally sensitive intervention for the promotion of PA among AIW to other developed countries.

The study used SCT to explore the perceived barriers among AIW in the United States. I considered Pender's health promotion model (HPM) where the main constructs included perceived benefits and barriers to action, self-efficacy, and intrapersonal influences such as family, peers, and providers for regulating a behavior such as PA (Pender, 2011). I chose SCT over HPM, as it allowed examining the barriers in detail under the lens of reciprocal determinism including personal and environmental factors (Bandura, 1984). This study used a qualitative ethnographic approach as the research design. I considered a descriptive quantitative study but did not choose this methodology as it only explained the present status of a situation, and not the experiences behind the

behavior that led to the situation (Polit & Beck, 2012). In this study, a descriptive quantitative design would have measured the PA behavior or describe the relationships among variables such as gender or ethnicity in relation to PA. I choose qualitative design as it explored the experience and feeling on barriers that caused a decrease in adequate PA among AIW in the United States (Creswell, 2013).

Limitations

There were two primary limitations to this study. The first limitation was the narrow population. The population was restricted to AIW residing in the state of California, United States. The scope to generalize the findings to other ethnicities or gender in the United States or women population living in India was limited. I used thick description of the research setting, study participants, and observed processes (Polit & Beck, 2012). I also provided a detaied explanation of data analysis so that future researchers could replicate this study among population have similar characteristics. The second limitation was that the researcher was an AIW residing in the United States. I used reflexive journaling to address this limitation. Reflexive journaling included documentation of the interests, personal values, role conflicts, feelings that impact neutrality of the researcher (Creswell, 2013). I also asked myself the questions prepared for focus group interview, wrote the answers, and avoided any leading questions. Another limitation was the credibility of the qualitative data provided by AIW in the United States, as there could be a compromise in the fact of the data. I addressed this limitation through member checking by providing feedback to participants, and obtaining their reactions (Polit & Beck, 2012).

Significance

Lack of PA caused increased prevalence of cardio-metabolic disorders among AIW in the United States (Babakus &Thompson, 2012; Daniel et al, 2018; Mehta et al., 2010). The under-treated cardio-metabolic disorders are a growing problem among the at-risk AIW in the United States. (Ardeshna et al., 2018). These noncommunicable chronic morbidities are preventable illnesses with adequate PA. Healthy People 2020 (n.d.) indicated that regular PA enhances the quality of life even in the presence of chronic morbidities among individuals. There was a gap found in the literature on perception of barriers to PA among AIW in the United States. This study identified the barriers including cultural challenges perceived by AIW in the United States to perform adequate PA. The identification of these barriers assisted in developing culturally geared interventions among this population. The interventions that addressed the cultural barriers will increase PA among AIW in the United States, which in turn may reduce cardio-metabolic disorders in this population. This study may lead to culturally sensitive interventions, which will provide motivation to participate in behaviors that improve engagement in PA. This will assist in decreasing the rate of chronic morbidities among AIW population in the United States.

Summary

This chapter focuses on the introduction to the study of barriers to PA among AIW in the United States. It is evident that AIW in the United States have higher occurrences of cardio-metabolic disorders due to lack of PA. The thorough examination of barriers to PA perceived by these women population provided a better understanding

of the insufficiency in PA. A comprehensive understanding of these challenges assisted in developing interventions that promote PA and thereby health of AIW in the United States. The next chapter aims to provide an extensive review of literature on AIW in the United States and their perceptions that act as a challenge to perform the required PA.

Chapter 2: Literature Review

Introduction

The AIW population in the United States have decreased level of PA, which has resulted in increased prevalence of cardio-metabolic disorders. Healthy people 2020 (n.d.), indicated that maintaining adequate levels of PA increases quality of life and prevents obesity, which in turn reduces the occurrence of cardiovascular disorders and diabetes mellitus. Adults often fail to impact their health positively by engaging in PA. James at al. (2014) described the advantages of PA as physical and emotional health, management of stress, increased levels of energy, and weight management. Despite the multiple benefits of PA, it is evident that American adults encounter a huge challenge in performing the required level of PA in their daily lives (Alvarado, Murphy, & Guell, 2015). Comparatively women tend to perform PA less frequently than men, and AIW in the United States are more likely to have lower levels of exercise compared to women from other ethnicities in the United States (Bajaj et al, 2014; Daniel et al, 2018). A study on the perceptions of barriers to PA becomes crucial to understand the reasons for decreased interest in PA. A behavioral theory such as SCT will put the challenges for adequate PA faced by this population into better perspective. The major sections of this chapter include strategies used for searching the literature, theoretical foundation and key concepts emerged from the review of literature.

Literature Search Strategy

The databases used for searching for various factors associated with PA among AIW included CINAHL Plus, Medline, ProQuest Central, Sage, and Eric. The literature

search on cardiovascular diseases among Asian Indian population using the keywords coronary artery disease, coronary heart disease, Asian Indian Americans, Asian Indian women, migration, and immigrant yielded five articles. The keywords used for searching the literature on metabolic disorders among AIW were type 2 diabetes mellitus, insulin resistant, metabolic syndrome, Asian Indian Americans, Asian Indian women and generated seven articles. The literature search on PA among AIW using the key words exercise, PA, and Asian Indian women yielded two articles. To learn more about AIW, I searched the literature using the key words Asian Indian, acculturation, immigrant, migrant and AIW, which yielded eight articles and two of those, addressed metabolic disorders, and three focused on cardiac disorders among this population. The literature search on factors affecting PA using the key words PA, barriers, motivators, challenges, facilitators, preferences, and attitude yielded 27 articles of which seven are relevant to this study. The search of literature on the use of SCT on PA among ethnic specific women using the key words social cognitive theory, PA, and women yielded 66 articles of which only 15 focused on various ethnic specific women. The themes generated from the literature search are acculturation of AIW in United States, role obligations of AIW, benefits of PA, barriers and motivators of PA, and impact of physical inactivity among AIW.

Theoretical Foundation

The theory selected for guiding this study was SCT by Bandura (1998). Social cognitive theory has become one of the most frequently employed and acknowledged theoretical models for examining health behaviors including PA (Haegele, et al., 2017).

The core determinants included knowledge of health risks, benefits of different health practices, perceived self-efficacy that one can exercise control over one's health habits, outcome expectations about the expected costs and benefits for different health habits, the health goals people set for themselves and the concrete plans and strategies for realizing them, and the perceived facilitators, social and structural impediments to the changes they seek (Bandura, 2004). The basic assumptions of SCT are that (a) beliefs of personal efficacy is the basis of actions that produce desired changes, (b) normative influences regulate actions through social sanctions and self-sanctions, and (c) cognized goals provide self-incentives and guides to health behavior (Bandura, 1998, 2001). Bandura (1998) elaborated perceived barriers as a major obstacle in bringing personal change. An application of the perceived barriers acting as a challenge in performance of PA include personal impediments that hinder the behavior, situational, social, or economic impediments (Bandura, 1998). The central tenet of SCT is triadic reciprocal determinism, which indicate that bi-directional influences between behavior, personal factors, and environment influences generate behaviors (Bandura, 1998, 2001, 2004). Bandura (2004) indicated that anticipated outcomes produced by actions influence the health behavior, and the outcomes can be physical, social, and self-evaluative reactions.

The review of literature demonstrated the appropriateness of SCT in studying the behaviors associated with PA among culturally specific population. Joseph et al. (2017) examined the cultural relevance of SCT in the intervention design for enhancing PA among African American women and found that the constructs of SCT is pertinent in culturally relevant PA programs. Mehta et al. (2010) found that SCT is an appropriate

framework to understand the predicators of PA among Asian Indians. Mehta et al. studied the predictability of SCT and PA and found that the outcome expectations had a direct relationship with PA where the individuals tend to exercise more when they place more value on positive results. Mailey et al. (2016) found that there was a direct relation between barriers to self- efficacy and PA, while examining the barriers to exercise among parents through the lens of SCT. The review of literature showed that SCT is appropriate for this study as it aligned with the concept that the goals set and commitment for PA was higher if the self-efficacy is stronger, and the barriers to PA behavior was associated with efficacy beliefs among AIW in the United States.

The main constructs of SCT including self-efficacy and self- regulation were the basis of the study of barriers to PA among AIW in the United States. Bandura (1998, 2004) defined perceived self-efficacy as control over one's health habits and self-regulation as the health goals set by individuals for themselves and the concrete plans and strategies for accomplishing these goals. In PA, the self-efficacy examines the beliefs of individuals in their ability to perform exercise. Looking through the lens of self-regulation helped understand the capability of an individual to maintain the behaviors of PA in the midst of various barriers. Bandura (2004) indicated that a display for strong self-efficacy results in expectation of positive outcomes that are of physical, social, self-evaluative in nature. The research question for this study aimed to examine the barriers associated with PA among AIW in the United States. An understanding of the self-efficacy beliefs among this population and challenges for establishing goals through

demonstration of self-regulation behaviors provided information on the barriers in performance of PA.

Acculturation of Asian Indian Women in the United States

Asian Indians are the one of the most rapidly growing immigrant groups in the United States of America. The United States Census Bureau (2016) reported that 47.9% of the total Asian Indian population in the United States is composed of Asian Indian women. The history of Asian Indian immigration has traces to the year 1790, when lumber mills in Washington and agricultural fields in California employed a few farmers from the state of Punjab in India (Pavri, 2011). Following the racial riot in Bellingham, Washington, the immigration of Asian Indians was restricted, and the population increased only to 5000 in 1920 (Pavri, 2011). From 1960, after the removal of restrictions on immigration, Asian Indians migrated to the United States in three distinct waves of migration (Nandan, 2007; Pavri, 2011).

The first wave of migration was from 1965 to 1975 where young adult men from India migrated seeking career opportunities and educational advancements. Nandan (2007) indicated that they had a bicultural orientation by adapting to Euro American work culture while maintaining traditional values of Indian culture. The Indian women among these immigrants did not work and stayed home taking care of their husbands and children. The second wave of immigration occurred from 1976 to 1985 and the migrants included educated women along with adult men and children looking for improved job opportunities and higher education (Nandan, 2007; Pavri, 2011). As the Indian women among these immigrants were professionals, contrary to the traditional norms, they

adapted to the United States culture in a faster pace. The third wave of immigration was from 1990 to present during when Asian Indian permanent residents and citizens brought their families including siblings and parents to the United States (Pavri, 2011). The cultural challenges were the difficulties in adapting to an unfamiliar environment creating loneliness among Asian Indian immigrant women. The acculturation strategies of AIW involves cultural maintenance by sustaining the traditions, beliefs, values, and culture in the United States.

Role Obligations of Asian Indian Women

The role of women is integral in the Indian society, and is clearly visible in traditions, religious practices and principles within familial norms (Daniel et al., 2018). Indian women have a pivotal responsibility of transferring cultural values to generations and input selfless focus on family and kinship, which results in decreased emphasis on self-care activities including PA for the enhancement of self-health (Mehta et al., 2010). The very constitution of Indian society engrains the role of women, distinct in its traditions, religious values, and practices within families. Asian Indian women come from a patriarchal society, and assume the duties of retaining, educating, and transferring cultural traditions, values, and beliefs to their families (Daniel et al., 2018; Misra et al, 2017).

The foundational elements of AIW are her family and kinship. The fundamental expectations of Asian Indian women are to be submissive wives, obedient daughters-in-law, and caring mothers. Women are primarily accountable for all household chores, with or without anyone's help. According to Misra et al. (2017) Asian Indian women

immigrate the roles, values, beliefs, education, and ideologies of their families with them. The family system, place of origin, caste and religion heavily impacts the development of a female within a society. The acculturation to United States provided opportunities for women to promote their career and obtain better standard of living. Now they started assuming the dual role of being a housewife and being employed (Daniel et al., 2018). Although the waves of change have slowly started in India that empowers women to speak up for themselves and focus on self-care behaviors, Indian immigrant women in transition demonstrate more transformation when compared to their counterparts in India. However, acclimatization to life in the United States, family primacies, obligations toward family and career, time restrictions due to responsibility toward cultural and social mandates have negatively influenced the PA among AIW in the United States (Daniel et al., 2018; Chopra et al., 2013; Mehta et al., 2010).

Benefits of Physical Activity

There are evidences that regular PA provides benefits to optimal health, functioning, and wellbeing. Physical activity (PA) has been widely promoted across all ages from childhood to geriatrics. The PA guidelines states, “For substantial health benefits, adults should do 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 aerobic PA, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week” (CDC, n.d.). The types of PA are aerobic, resistance, flexibility, and balance exercises (Colberg, et al., 2016). The aerobic

exercises include walking, cycling, jogging and swimming, and aids in lowering cardiovascular and diabetes (Colberg et al., 2016; Zheng et al., 2016). Strength training exercises also encompasses resistance exercises that utilizes free weights, weight machines, body weight, and elastic resistance bands, and these exercise strategies lowers heart rate and blood pressure (Colberg et al., 2016; Neto et al., 2015). Flexibility and balance exercises increases the joint mobility and range of motion and reduces risk for falls and imbalanced gait (Colberg et al., 2016).

A systematic review PA reported a positive relation between self-determination and motivation (Teixeira et al., 2012). Regular moderate-intensity PA is beneficial for cardiovascular health, muscular strength, muscular endurance, mental health, weight management, reduction of risk for stroke, hypertension, colon cancer, breast cancer, type 2 diabetes mellitus, osteoporosis and overall quality of life (James et al., 2014; Rhodes et al., 2017). Sattelmair et al. (2011) conducted a meta-analysis on dose response between PA and coronary heart disease and reported that individuals who were engaged in minimum level of PA also had decreased risk of coronary artery disease. Despite the well-known benefits of PA, only one-half of the U.S. population and 52% of AIW in the U.S. meet the minimum guidelines of PA (Daniel et al., 2018; CDC, n.d.). The level of PA that offer propitious cardiorespiratory health and fitness results is similar for men and women of all ages, as well as for adults of diverse races and ethnicities (Brunet et al., 2013; Bethancourt et al., 2014; Hills et al., 2015).

Barriers and Motivators of Physical Activity

A better understanding of the factors including barriers and motivators that impact PA increases the success rate of PA behavior in any population. The SCT classifies barriers to PA as personal, environmental, and social factors. The personal barriers that causes decreased PA among individuals are lack of time, lack of motivation, physical health limitations, low energy, tiredness and loss of interest (Prochnow et al., 2019; Ashton et al., 2017; Daniel et al., 2018; Gothe et al., 2016; Kirwan et al., 2016; van Alphen et al., 2016). Inadequate time was a major personal barrier seen among women due to household responsibilities and busy life style (Ashton et al., 2017; Chia-Huei Lin et al., 2017; Mathews et al., 2016). The environmental barriers include lack of accessibility to a gym, affordable group exercise opportunities, hazards related to safety of neighborhood and roads, uncomfortable and unpredictable weather, fear of being injured from slipping and falling, and unleashed dogs in the neighborhood. (Chang et al., 2018; Daniel et al., 2017; Gupta et al., 2017; Mathews et al., 2016). Some of the social barriers that negatively impact PA were lack of encouragement from partners, family, and friends, gender discrepancies, diminished social support, and role expectations. (Daniel et al., 2018; Miller et al., 2017; Alvarado et al., 2015). Role expectations among Asian women include doing domestic work, caregiving for children, grandchildren, parents, and family responsibilities. (Chia-Huei Lin et al., 2017; Gothe et al., 2016).

Three different categories of the motives of PA may be personal, environmental and social factors. The personal factors that act as motivators for PA include physical health, appearance, personal concern for health status, enjoyment, improved wellness and

sporting performance (Ashton et al., 2017; Miller et al., 2017). The list of environmental motivators acquired from literature review are easy accessibility to workout centers and affordability (Miller et al., 2017; Alvarado et al., 2015). The motives that fall under the category of social factors are encouragement from family and friends, health professionals, educational and social programs (Daniel et al; 2018; Alvarado et al., 2015).

Impacts of Physical Inactivity among Asian Women in the United States

The main types of non-communicable diseases categorized by World Health Organization (WHO) are cardiovascular diseases, cancer, chronic respiratory diseases (WHO, 2011). Physical inactivity can cause weight gain, overweight and obesity which results in cardiovascular diseases including stroke and heart failure. The outcomes of physical inactivity include increased blood pressure, cardio-vascular disease mortality, obesity, increased incidence of type 2 diabetes mellitus, and increased risk of adverse lipid profile (Piercy et al., 2018; Reiner et al., 2013). A systematic review conducted by Reiner et al. (2013) on long term benefits of PA revealed a negative relationship between PA and weight gain, obesity, coronary heart disease, diabetes mellitus, and Alzheimer's disease. For individuals with diabetes mellitus, regular PA can increase insulin action in muscle and liver (Colberg, 2016).

The prevalence of coronary artery disease (CAD) is 11% for non- diabetic patients and 21.4 % for diabetic patients among individuals living in India, and that among Asian Indian immigrants is higher to other ethnic population in the United States (Ardeshna et al., 2017). The rate of CAD is three times higher in Asian Indians compared to national United States average (Ardeshna et al., 2017; Fernandez et al., 2015; Bajaj et

al; 2014). These rates regarding cardio-vascular diseases reflect among Asian Indian women living in the United States. According to Daniel et al. (2018), the ratio of mortality from ischemic heart diseases among AIW is 1.12 when compared to that of non-Hispanic White women, which is 0.92. Similarly, the CAD rate among AIW is 33% compared to Japanese, Chinese, Hispanics, African Americans and Caucasian female population that are less than 20% (Misra et al., 2017; American diabetic association, 2014). The negative outcomes of physical inactivity include increased incidence of diabetes mellitus and poor glycemic control. Asian Indian adults have a higher rate of type 2 diabetes mellitus compared to other immigrant ethnicities in the United States (Misra et al., 2016; Patel et al., 2017). The prevalence of diabetes among AIW who migrated to the United States is higher than the national prevalence rate of other races (American Diabetic Association, 2014; Daniel et al., 2018).

Summary

The review of various articles emphasized the importance of PA for improving and maintenance of health and prevention of chronic diseases. The acculturation strategies adapted by AIW in the United States demanded role obligations that compelled to spend less time for maintenance or promotion of their own health. Asian Indian women population suffered from the negative impacts of physical inactivity such as cardio-vascular diseases and diabetes mellitus. The literature review showed that there are several studies examining the barriers to PA among various ethnicities, but very few among Asian Indian population. Those exploring the Asian Indian population focused on general population and Asian Indian men creating a gap in the literature on examination

of barriers to PA among AIW in the United States. This research contributed insights into the competing influences that AIW in the United States may encounter in carrying out PA. A better understanding of women's perception of barriers contributed to the design of culturally sensitive interventions geared towards this group.

Chapter 3: Research Method

Introduction

The purpose of this study was to explore the barriers to PA among AIW living in the United States. There was a gap identified from reviewing the literature on barriers associated with PA among AIW in the United States. Based on SCT, a variety of factors that are environmental, personal, and behavioral can influence PA. Examining the challenges to the constructs of SCT including self-efficacy and self-regulation provided a better understanding of these barriers. Asian Indian women in the United States were found to have high prevalence and incidence of cardio-metabolic disorders and the main causative factor these morbidities were the lack of PA. This study examined the barriers to the performance of PA among this population. Since this study intended to understand the perceptions of a specific culture on a phenomenon, qualitative design was the most appropriate methodology. Qualitative research design belonged to constructivist traditions that focused on understanding human experience through collection and analysis of narrative and subjective materials (Polit & Beck, 2012). This chapter includes details on selected research design, role of the researcher, methodology, and issues of trustworthiness.

Research Design and Rationale

The question identified for this study was: What are the perceptions of barriers to PA among Asian Indian women living in the United States? The central phenomenon of this study was the perception of barriers to PA. Through the lens of SCT, perception of barriers was defined as a construct of personal and environmental factors that act as a

challenge for engagement in PA. The personal factors affecting PA are lack of time, lack of motivation, and loss of interest (Ashton et al., 2017; Daniel et al., 2018; Gothe et al., 2016; & Kirwan et al., 2016; Prochnow et al., 2019). The environmental factors are infrastructure in neighborhoods and communities, access to recreation facilities, etc. (Chang et al., 2018; Daniel et al., 2018; Gupta et al., 2017; Herazo-Beltrán et al., 2017; Mathews et al., 2016; James et al, 2014). To explore the perceptions of an individual from a specific cultural group, the researcher should seek to understand the worldview from the members of the group (Polit & Beck, 2012). This was done through the belief system that was represented by a view of reality which was constructed by the individual based on a naturalistic paradigm (Houser, 2015).

The use of a qualitative research method developed a rich and context-bounding understanding of a poorly understood phenomenon. Qualitative design was the appropriate methodology for this research as the aim of this study was to explore the perceptions of barriers to PA. Numerical data or objective information could not obtain the perceptions of barriers to PA but subjective live experiences of AIW population living in the United States. This design was justified over quantitative tradition, as it was not using deductive reasoning to generate predictions based on empirical evidence gathered through objective reality (Polit & Beck, 2012). The qualitative tradition was appropriate than the mixed methods with the inclusion of detailed understanding of the problem by having direct conversations with people and empowering individuals to share their stories (Creswell, 2013).

The qualitative research methodology selected for this study was ethnography. According to Creswell (2013), ethnography focus on the values, behaviors, beliefs, and languages of a culture-sharing group. Creswell indicated that ethnography was appropriate if the research was intending to understand how a cultural group works and to investigate the beliefs, language, behaviors, and challenges encountered by the group. In this study, AIW is a culture-sharing group who have the same beliefs, values, and patterns of behaviors. Ethnography was justified for this study over phenomenology, as the research is not aiming at describing the common meaning for AIW of their lived experiences of PA, and over ground theory, as there was no development of a theory (Creswell, 2013). It is appropriate over narrative research as there were no stories told by the participants and over case study due to the lack of an in-depth understanding of one or more cases (Polit & Beck, 2012).

Role of the Researcher

I identified the participants for the study and collected data as an observer. Sutton and Austin (2015) indicated that the role of researcher in qualitative studies was to understand the feelings and viewpoints of study participants. Sanjari et al. (2014) indicated that the role of an ethnographer was to function as instruments that understand and analyze the culture. In this study, the researcher assumed that AIW population in United States has a culture that guides the perspectives of PA and the experiences around promotion of health activities. The researcher studied this population through cultural speech where the AIW envision their own world on PA (Polit & Beck, 2012).

The researcher interviewed focus groups and collected the information regarding perception of barriers to PA. The researcher framed open-ended questions and obtained truthful and relevant answers without participant bias. The researcher re-evaluated the responses and analyzed the same with an unbiased mind to prevent researcher bias. The researcher managed power relations by viewing the interview situations from various perspectives that reflect the researcher's perceptions within the interview atmosphere (Polit & Beck, 2012). The researcher protected the privacy and confidentiality of the participants and provided a safe and comfortable location for interviews. The researcher assumed the role of a participant observer among AIW and enhanced observation by participating in the activities of the group. The researcher documented the reflection and experience of the researcher in reflective field notes during data collection process (Creswell, 2013). The researcher mitigated ethical issues by minimizing errors in observation and endeavoring truthful knowledge (Polit & Beck, 2012).

Methodology

Participation Selection Logic

The methodology selected for exploring the perceptions of barriers to PA among AIW living in the United States was ethnographic qualitative research. The participants recruited were from Asian Indian religious institutions such as churches and Hindu temples, and Asian Indian cultural organizations. The inclusion criteria was Asian Indian women who were born in India and immigrated to the United States directly from India after the age of 25 years. The sampling strategies used for this study were purposive and snowball sampling. Purposive sampling was most appropriate for this research by

selecting cases that most benefits the study for ensuring good knowledgeable informants. Snowball sampling aided this study by asking early participants to refer other study participants. Polit and Beck (2012) indicated that ethnographers begin by using a big net approach by conversing with 25 to 50 people but gather the information from a small group of key informants. The number of participants for similar qualitative researches that examined the perception of barriers to PA among various ethnicities varied from 17-40 (Alvarado et al., 2015; Daniel et al., 2018; Mathews et al., 2016). Polit and Beck (2012) indicated that data saturation was a guiding principle in determining qualitative sampling size, where sampling hits the point with no new information acquired, or redundancy attained. Since the AIW interviewed were good informants who reflected their experiences and communicated effectively, the sample size was made up to 15 participants.

Instrumentation

The data collection for this research was through focus group interviews. The focus group guide was developed by the researcher (See Table 1). This guide was appropriate for the study as it addressed the cultural specificity of the study population. The questions examined self-efficacy, encouraging participants to describe their barriers to PA including behavioral, personal and environmental factors. The personal interviews were semi-structured with a written topic guide. The basis of these questions were self-efficacy and self- regulation constructs of SCT. The expert panel in the research committee reviewed and established the content validity for both the instruments.

Table 1

Focus Group Interview Questions

What is your understanding of being physically active?
Probe: Tell me more about how Indian women can be physically active?
Have you noticed a change in the level of physical activity among Indian women in the United States when compared to those in India?
Probe: What kind of changes do you notice?
What do you think about the influence of physical activity on diabetes, heart attack and stroke in Indian woman?
Probe: Tell us more about this.
How satisfied are you with your current level of physical activity?
Probe: Why do you think so?
What are some of the barriers for you to remain physically active?
Probe: How would you reduce those barriers?

Procedures for Recruitment, Participation, and Data Collection

The researcher proposed to form two focus groups that consists of ten participants each. In order to recruit these participants, the researcher created and distributed flyers among various religious institutions. These flyers contained criteria for the study and contact details of the researcher. Furthermore, per instructions given by the researcher, leaders of these institutions made announcements about the study during their meetings. The researcher maintained a good rapport with the leaders and key liaisons of these

institutions to assure the confidentiality and informed every participant of their voluntary participation.

The researcher conducted both the focus groups at a park and obtained a written informed consent prior to each focus group interview. As planned, an hour-long focus group interview was scheduled every other day. The researcher audio-recorded and transcribed the verbatim of all conversations during the focus group interviews. The participants could exit from the study at any point of the interview. If any interruptions occurred in between the interview, the researcher scheduled another follow-up interview within one week of the first session.

Data Analysis Plan

The data analysis approach for this research was thematic analysis. The researcher looked at the themes under personal, environmental, and social barriers. The core elements of qualitative data analysis included reducing the data into meaningful segments and naming those segments, combining the codes to generate themes, and display the findings and comparisons in pictorial representation (Creswell, 2013). The researcher compared and analyzed verbatim transcriptions of audio recordings of the focus group conversations and notes taken during focus group interviews. Classifying and indexing through developing a category scheme organized the data (Polit & Beck, 2012). During the coding process, the researcher categorized the perspectives of the participants related to barriers into themes and subthemes. The researcher used a computer program called NVivo12 to enter the data file into computer, code the narratives, and retrieve for analysis of specific codes (Polit & Beck, 2012). To analyze the data of barriers to PA among AIW

in the United States, Leinin's method of ethnographic analysis including domain, taxonomic, componential, and theme analyses were followed (Polit & Beck, 2012).

Issues of Trustworthiness

The common criticism about the subjective nature of qualitative data was individualized perspectives creating researcher subjectivism and inaccuracy. Variability of researcher biases limited generalizability and replication of the results. To mitigate the issues of trustworthiness and increase the quality of study on perception of barriers to PA among AIW in the United States, the study followed the four criteria proposed by Lincoln and Guba (as cited in Polit and Beck, 2012).

Credibility

The definition of confidence in the truth of the data and their interpretations is the credibility of qualitative research (Polit & Beck, 2012). The credibility of this study was audiotaping and verbatim transcription of the focus group interviews. Throughout the inquiry, the reflexive journaling carried out brought awareness on background, values, and cultural identity impacted the process of research. According to Korstjens and Moser (2018), prolonged engagement will also enhance credibility. The researcher invested adequate time for collection of data for understanding the participants and ensuring saturation of information. The researcher focused on core features of a scenario or conversation on PA to guarantee prolonged engagement.

Transferability

Transferability is the ability for extrapolation where the results apply to other groups and cultures (Polit & Beck, 2012). According to Polit and Beck (2012), the

strategies for achieving transferability will be searching for confirmed evidence and thick description. During the collection of data from AIW in the United States, the researcher used comprehensive field notes by writing a narrative account of the observation including a detailed description of conversations, actions, and dialogues in the field. The researcher also searched for external evidence from prior studies for literary representation of the results during data analysis. In order to accomplish transferability, the results of this study displayed a rich vivid description of the research context, AIW in United States, and their experiences.

Dependability

The definition of dependability is the stability of data over time and conditions (Polit & Beck, 2012). To ensure dependability during data generation, I performed member checking by providing feedback to participants about emerging interpretations, and then obtained the reactions of the participants. The researcher created an organized collection of materials including interview transcripts from the focus group interviews among AIW in the United States.

Confirmability

Confirmability refers to the accuracy of data obtained from the participants independent of researcher biases (Polit & Beck, 2012). The strategies for obtaining confirmability for the study of barriers to PA among AIW living in the United States were audit trails and reflexivity. This ensured that the research findings were objective information from the participants and not formulated by the researcher.

Ethical Procedures

The researcher obtained the authorization from Institutional Review Board (IRB) prior to conducting the research. Sanjari et al. (2014) indicated that the ethical concerns in a qualitative research included respect for privacy, establishment of honest and open interactions, and avoiding misrepresentations. The explanation of the purpose of the study and maintenance of confidentiality followed the selection of participants. The participants received an informed consent explaining the voluntary nature of participation, protection from any risks that could arise from the study, and benefits of participating in the study. The researcher explained to the participants about the nature of the study, their role, publishing of the results and its implications. The audio files and verbatim transcriptions of the interviews uploaded to a password protected hard drive would be stored under lock. After five years of the study, the entire data would be subject to permanent deletion.

Summary

This chapter detailed various aspects of design and methodology proposed for this study. An ethnographic approach selected for the flexibility assessed the perceptions of barriers to PA among culturally specific AIW population in the United States. Data collection was through focus group and personal interviews. This chapter discloses all the pertinent information that applied to the rationale and conduct of the study. Chapter 4 demonstrates a thorough description on data collection and analysis.

Chapter 4: Results

Introduction

The purpose of this study was to explore the barriers to PA among AIW in the United States. This study sought to investigate the challenges of AIW in the United States to perform adequate PA. The research question guiding this study was: What are the perceived barriers to PA among AIW in the United States? This chapter displays the setting, demographics, data collection, data analysis, evidence of trustworthiness and results of the analyses related to the research question.

Setting

The participants were recruited from two Christian Indian churches located in Southern California. The population of both congregations included individuals from northern and southern parts of India. After obtaining IRB approval (IRB Protocol # 11-26-19-0637537) and permission from both organizations, flyers were posted with description of the study, inclusion criteria, and contact information of the researcher on the bulletin board. The flyers were also hand distributed to interested individuals after the church and prayer services at both organizations. Interested participants were given the date, time, and location of focus group interviews. Few changes were made in the interview dates to accommodate the availability of participants.

Demographics

A total of 15 individuals agreed to participate in one of two focus groups. All were female and belonged to Christian religion. The women were between 26 and 55 years of age, with mean age 38.5 years (SD = 9.44). All the participants spoke English.

More than half of the participants immigrated from southern region of India (n= 9, 60%) with the remaining participants being from the northern region of India. The time frame since immigration from India to United States varied from 4 to 21 years. Table 2 shows the demographic data for the participants including age, education, employment, time since immigration and marital status.

Table 2

Participants Demographic Data

Demographic	N	Percent
Age		
26-40	8	53
41-55	7	47
Education		
Bachelor's degree	10	67
Master's degree	4	27
Doctorate degree	1	6
Employment status		
Employed	11	74
Student	2	13
Unemployed	2	13
Years since immigration		
Less than 15 years	8	53
15 years and more	7	47
Marital Status		
Single	3	20
Married	12	80

Data Collection

Fifteen participants were recruited from two Christian churches for the focus group interviews. Two focus group interviews were conducted at a park located between both the churches and had eight and seven participants each. The focus groups were an

hour long and were conducted at two different dates, one week apart. The researcher explained the purpose of the study, privacy, risks and benefits to the participants, and provided the informed consent form ensuring confidentiality. The questions presented to all the participants were similar; but they were repeated for active participation from entire group.

During data collection, the researcher used an audio recorder, field notebook, and a journal to record the discussions. The researcher ensured active participation from all the participants. Those who remained silent or passive were asked the probing questions to bring out their perception on barriers to PA. The researcher expressed gratitude for the active participation and concluded the interviews. The interviewer did verbatim transcription of the audio files. In order to verify the accuracy of the transcript, 100% of the audio files were transcribed by another graduate student. A comparison was made between the two transcriptions with 100% of agreement. The data collected are uploaded to a password protected hard drive that is stored under the lock for a minimum of five years, after which the researcher may decide to destroy them.

Data Analysis

The analysis of data in a qualitative research comprises of naming the segments using meaningful codes and organizing those codes to generate themes (Creswell, 2013). The researcher compared the verbatim transcriptions of audio recording and handwritten notes taken during focus group interviews to resolve any discrepancies in data. The software used for analyzing the data was NVivo 12 plus qualitative data analysis software. The researcher imported the transcribed verbatim of the focus group interviews

using the software and reduced the data by coding the transcripts with meaningful segments. Using thematic analysis, the coded units were then moved inductively to larger themes identified through the lens of SCT. The researcher calculated the frequencies and percentages for each theme and subthemes using the software and manual analysis. Thus, for an idea or voiced thought to be considered a theme, 25% or more of the women needed to voice or agree that idea or concern.

Evidence of Trustworthiness

Credibility

Credibility is the proficiency to validate that the findings of the study are authentic from the perception of the participants (Polit & Beck, 2012). Credibility was achieved by audiotaping the focus group interviews and transcribing the verbatim of the interviews. The researcher also did reflexive journaling that was carried out to bring awareness on background, values, and cultural identity impacted the process of research. The researcher compared the transcripts with the filed notes taken during interview and the reflexive journaling notes.

Transferability

Transferability is demonstrated by the ability to apply the results apply to other groups and cultures in a similar context (Polit & Beck, 2012). During the collection of data from AIW in the United States, the researcher wrote a narrative account of the observation including a detailed description of conversations, actions, and dialogues in the interview through comprehensive field notes. The researcher also searched for external evidence from prior studies such as “Barriers and motives to PA in South Asian

Indian immigrant women" (Daniel et al., 2018), for literary representation of the results during data analysis. The results of this study provide a vivid description of research context ensuring transferability.

Dependability

Dependability is determined by the capability to conduct the investigation with similar outcomes (Polit & Beck, 2012). To ensure dependability, the researcher provided feedback to participants about emerging interpretations during the data collection of the interview process. For instance, when the participants indicated that they are not exercising despite having a treadmill or gym at home, the researcher encouraged them to explain futher and asked them if it is due to lack of consistency or motivation based on their explanation.

Another example is when the participants expressed their barriers due to lack of time due to various reasons and explained each of them, the researcher stated the emerging interpretations such as culture, family priorities and role expectations. The participants agreed to this and explained further on the lack of time due to demands like working overtime and spending weekends at religious institutions. This kind of feedback was provided in both focus groups. Additionally, this study adopted rich and thick description of the findings of the analysis. The researcher complied an organized collection of materials including the transcripts from the focus group interviews among AIW in the United States.

Confirmability

Confirmability indicates precision of data obtained from the participants independent of researcher biases (Polit & Beck, 2012). The researcher wrote a detailed account of cultural identity that could potentially impact data collection and ensured that the research findings were unbiased information from the participants and not articulated by the researcher.

Results

The data analysis revealed saturation of data, and there were no discrepant cases that had to be factored in analysis. All the identified codes were color coded and categorized into subthemes and themes. From the analysis, the following themes were identified: perception of PA in daily life, benefits of PA, and barriers to PA.

Theme 1: Perception of Physical Activity in Daily Life

Twelve of the women in both focus groups expressed their perceptions of PA in the daily lives of an AIW in the United States. Perception of PA was identified as a theme as it achieved the data saturation of 79%, which is above the determined level of 25%. Participants (n = 4, 26%) commented that a physically active woman can do the daily activities without being tired, staying healthy, and free of diseases. Some participants (n = 3, 20%) described PA as structured activities such as sports, swimming, aerobics, yoga, and stretch exercises. Some (n = 5, 33%) expressed that doing enough work at home is adequate and there is no need for consistent physical activity.

> For me physically active is, I can do my own physical activities like household work, daily day to day life activities without any problem, as I am not tired doing

> my activities and that's my understanding of physical activity. But I don't feel that I have to go to the gym and do the exercise daily basis even me I do enough work at home. (Participant 1, Focus group 1)

> I live on the third floor of my apartment without an elevator! As long as I continue to live there, I am officially physically active." (Participant 2, Focus group 2)

The participants (*n* = 13, 87%) indicated that there is a definite change in the level of physical activity among AIW compared to those in the United States in their daily lives. The reasons identified were gender discrepancies, cultural expectations where women are obliged to take care of the family, and financial limitations.

> Yes, there is a difference! Awareness or resources in the urban India is not any different from US I should say. But the rural India is a different animal and you can't even compare that to our blessings and privileges. We are way more blessed and more accountable to stay fit for we have no excuse to make. (Participant 7, Focus group 2)

Theme 2: Benefits of PA

The women (*n* = 14, 93%) reported the benefits of PA which exceeded the determined level of data saturation. The participants expressed that physical activity decreases the incidence of cardio metabolic disorders among AIW. Some participants (n = 7, 46%) stated that high carbohydrate diet causes diabetes, hypertension and stroke

among AIW. One participant indicated that these diseases are hereditary, and it can occur in anyone despite performing PA or following healthy diet regimen.

> The more you are physically active, the more you are healthy and free of diabetes, heart attacks or stroke. (Participant 6, Focus group 2)

> I think most of the woman in Indian have diabetes, because they are not well educated about the diet regime they have to follow. They eat whatever things are available, they don't follow the caloric count or anything. But here in United States most of the people have good education, people are educating them even at their work place. Everywhere people are more conscious about their health, so, in India they consider that as long as they can do their daily activities, they are healthy. And they don't go to the doctor for a regular check-up or anything and they don't get much advice from the other people. (Participant 1, Focus group 1)

> It's just the lack of knowledge that they have on the diet and also the importance of physical activity. The major one more than the stroke or the hypertension disease, it is the diabetes that occurs in women. It's because we have highly carb food that we take eat daily. There is also difference even from regions of India when the disease condition is coming. If you look at north and south, south is more diabetes the north is more like hypertension. Because they use more salty food in the north, so it depends upon the region and the type of food they are eating. (Participant 4, Focus group 1)

> Sometimes even a healthy person can get any of these! I don't mean to say so we shouldn't exercise because that could be hereditary or from many other pre-disposing factors. But hey at least we did our part and don't have to later feel guilty I should have worked out while being poked insulin. (Participant 4, Focus group 2)

Theme 3: Barriers to Physical Activity

All the participants (n = 15, 100%) in both focus groups identified various barriers related to PA. The participants acknowledged having barriers to PA despite their awareness of importance of PA in reducing chronic morbidities as well as staying healthy. Specifically, the following sub-themes emerged as barriers to PA: lack of time (80%), consistency (53%) and motivation (60%), role obligations (93%), limited social support (53%), cultural expectations (33%), financial constraints, and lack of affordable opportunity for exercising (60%).

Twelve of the women reported lack of time as a barrier to PA. Some examples are:

> Time it is! Time has the final word! Wish I had more than 24 hours in a day huh?! My day starts at 4am—preparing for the day, ironing mine and kid's clothes, making breakfast, packing everyone's lunches, waking up the kids and getting them get ready. they are still little to do it by their selves, sometimes my husband is not any different either! Go to work, be back home--the traffic on 405 drains me out completely—I barely make it without sleeping by 6 pm. Then it is tear down time, kids' homework, dinner, feeding, prayer, clean up and to my surprise

> it is already 10 pm, and season2 starts at 4 am next morning! Weekends are even busier with church activities and social life!" (Participant 5, Focus group 2)
>
> "Well! Mostly I think it's the lack of time, lack of time. For me, day by day its different, like the timings I go to work and the time I come back home. Sometimes I work close to 12 hours, sometimes its 8 hours, so the time is different each day that I am not able to set aside a fixed time to go to gym. So, I don't have that sort of discipline that I am able to make time for it. Of course, I don't consider it a priority because I feel like I am healthy and I don't feel any health issues at the moment, so I don't really consider it as a priority to make time to go workout. (Participant 2, Focus group 1)
>
> Going back to our professional lives, we are spending most of time at our work place. When we come back home, we are very tired we go to sleep. Other days, we take care of the family, so we don't have the time to exercise. (Participant 4, Focus group 2)

Another barrier to PA reported by the women (*n = 8)* was lack of consistency:

> My son has a whole gym in the house. I make resolutions every year, but I can't be consistent for more than a few weeks. (Participant 4, Focus group 1)
>
> I have a treadmill at home that my husband uses to lay his clothes for drying… Wish I could find the time to use it more often. (Participant 3, Focus group 2)

> Sadly, it is injuries too sometime! My mom used to be very health conscious but ever since an injury to her knee—workout or any exerting physical was a distant dream for her! And I know of many ladies who post-pregnancy loose it completely due to so many factors. And eight out of ten aging Indian woman I know either have a back or knee pain and can't work out. I didn't mean to be racist! —it's just that our spirit is willing, but flesh is weak! (Participant 1, Focus group 2)

> I think consistency is the key. Even if it is not hour long every day, at least 20 mins but every day or even alternate days will make a massive difference. (Participant 7, Focus group 1)

Nine participants reported lack of motivation as a barrier to PA:

> I think, another barrier is also the mindset of the people, I guess over here like you know from when kids are starting their school age itself, physical education is part of their elective classes. It's from a young age they are told that they have to be physically be active, they have to be strong as they are growing up and it's kind of engraved in their mindset when they are growing up. As far as Indians are concerned, it's not really advocated enough or motivated enough or encouraged enough when they are from kids onwards. So even as we become adults, we don't have that mindset to take care of our health or anything. That's not our priority, that's why every other thing else is becoming a priority as far as people over here. (Participant 4, Focus group 1)

> I don’t see physical exercise as something recreational or something that brings me joy. Because, whenever I work out, it gives me physical pain and I don’t like that pain that I have after work out. It’s not a pleasant feeling to have, so I take a break, I go and do it for one day, I come back. Then I am in physical pain and I don’t see that as good. I meant I know that I am working out my muscles, but that pain kinda refrains me to going back to the gym and the cause that is associated with it. (Participant 2, Focus group 1)

> Motivation or being motivated is important. I personally loose interest quickly when I see my scale is stuck at the same weight or when I don’t lose an ounce. (Participant 6, Focus group 1)

> We don’t have the self-motivation. There is no benefit. We don’t have any incentive to do physical activity until we are old and find out having some health issues. (Participant 3, Focus group 2)

> I personally think even simply going to the gym is not enough--you need to take classes or have a good physical instructor because what we lack is the motivation or the right mind set. (Participant 5, Focus group 1)

Most of the women reported role obligations (n = 14) as a major barrier to PA among AIW. Few examples related to role obligations are:

I am a health personnel. I know I should do exercise, but I'm not doing. It is because of my living situation right now. For me, I am giving more preference to other things than my body image or my own health. I am a student, a full-time employee and of course I am a wife, a mother the different roles we are to play every day. So, we ladies especially for me I give more priority to my family or my other things than my own health, which I am not supposed to, but I am doing that. (Participant 3, Focus group 1)

Our responsibilities at home; because as Indian women, we have to take care of our home. So, after doing all the household chores, there might be some limited time for us to spend by ourselves at the end of the day. At that time, I am not motivated of going to a gym and working out. (Participant 2, Focus group 1)

I think we give so much of care to our family and the kids. We are really involved in their success rather than taking care of yourself or give importance to yourself. The priorities are different for an Asian Indian woman when compared to an American woman." (Participant 6, Focus group 2)

In our culture, we ladies do all the main household jobs. We are the one doing them than men, so we consider that as a physical activity. And doing all the household works inside or outside, we don't have extra time to go out to the gym.

> We just do our household activities and that's considered as part of physical activities. (Participant 3, Focus group 1)

> For us as Indian woman, we are so family oriented. Since we come from a very traditional background, we would like to spend that time for our family. So, we would put aside our health than to opt for our physical beauty or our health. We even ignore our own health for our families. (Participant 2, Focus group 1)

> In my case, we have a habit of cooking every single day. Also, we put our family and kids in up front above other things. I think we give less importance for exercise, so the last thing to get it done is that, but it never gets done. So, I think that's the first hurdle. We find the important things are to take care of our family, cooking food. They have the primary importance for us than exercising. (Participant 3, Focus group 2)

Eight of the participants expressed limited social support as a barrier to perform PA:

> I think the overall mindset and culture in India is less favoring for gym, physical fitness etc. for woman! It is just the man stuff! Gym and a woman—no way! Not from the town I come from in India. NO NO! (Participant 1, Focus group 2)

> In my family, woman do not go to gym or even work out. It's men who are chosen to be physical and we are emotional and home makers. I guess the culture or Indian philosophy is the biggest barrier that tends to overlook woman's

> physical health. I can't imagine walking out of the house to the gym in front of my in-laws. They would consider it as selfish and abandoning their son and grand kids! (Participant 6, Focus group 2)

> For Americans, it's a normal thing to go to the gym and do exercise. But I feel that if an Asian Indian goes to the gym instead of cooking or cleaning the house, she will be not well accepted by the family members or friends. It is not a normal thing for us. (Participant 2, Focus group 1)

Some women identified cultural expectations as a barrier to PA:

> "I think culture plays a big role. In my case, we have been raised seeing you take care of the family, cook and clean for them. If the lady doesn't cook and if she is fully focused in exercise, she will not be accepted well in the society." (Participant 4, Focus group 1)

> You have so much responsibility taking care of your kids, grandkids and the kids from the neighboring community. Indians are religious, so they spend most of their time in their church and temple. They give priority to these things than physical activity. (Participant 7, Focus group 1)

> For Indian women, it's a lot based on our culture. In our culture, we ladies do all the household jobs than men. So, we consider doing all the household works inside or outside as a physical activity. We usually don't take much time, extra

> time to go out to the gym or we just do our household activities and that's considered as part of physical activities. (Participant 8, Focus group 1)

> Indian Culture! I am sorry to say, sometimes it is simple the baseless notions or poor models in our own community. In the state I come from in India, to be fat or big meant I came from a well doing family. If I was thin but still healthy it meant I didn't have enough food to eat!!! This stigmatization has been and still is the biggest barrier to fitness or maintaining a good body. A woman with six packs is not considered beautiful in the Indian culture. A woman needs to be curvaceous to be pretty and otherwise that may even affect her future in terms of marriage etc— Incredible India! I have to say we have come a long way and it's not the same as it used to be when we were growing up. Things have changed but it still lingers! (Participant 7, Focus group 2)

Other barriers reported by the participants (n=6) were financial constraints and lack of affordable exercise opportunity is

> Finance is another thing. You know, it is very expensive to go to the gym and do exercise. Paying monthly for exercising is a lot. (Participant 8, Focus group 1)

> Even financial burden, we have to do the overtime to meet our needs. So takes toll on your health, and you will be more tired. Then you will just keep the exercise aside and give priority for the other things. So, we set priority for the other things rather than doing exercise. (Participant 1, Focus group 1)

> At home there are only few things that we can do to get the full resources for exercising. I must drive from my home, go to a gym, work out- that itself is like a waste of time. Because, what is important for us is our family. So, our priority is where are we invest our time. (Participant 4, Focus group 2)

> The time change, and weather play a role too. I am more active during summer versus winter when it gets dark and cold faster. I get lazy to drive. Once I hit the gym, I am good to go but that seldom happens! ((Participant 5, Focus group 2)

The research question addressed was: What are the perceived barriers to PA among AIW in the United States? All the interview questions were designed to identify the perceived barriers to PA among AIW in the United States.

Discrepant Cases

The process of data analysis in qualitative design requires the investigator to search for discrepant evidence that runs counter to themes (Creswell, 2013). The responses from the participants within each focus group did not illuminate any nonconforming or discrepant data. The answers for all interview questions remained within a narrow range of barriers and did not receive any responses that required further clarification.

Summary

The responses from most participants were focused on the barriers to PA among AIW. The barriers to PA perceived by AIW in United States are lack of time, consistency, and motivation, decreased social support, role and cultural expectations, and limited access to PA due to financial constraints. The next chapter will provide an overview of the interpretation of research findings, limitations of the study, recommendations, implications on positive social change, and conclusion of the research study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Lack of PA is associated with increased cardio-metabolic diseases and prevalence of obesity among AIW in the United States. This chapter will summarize the research study that will aid to understand the barriers encountered by AIW in performing PA. The purpose of this study was to explore the barriers associated with PA among AIW living in the United States. The researcher used a qualitative design to understand the meaning of PA and to express their understanding on barriers to PA related to their lived experiences that could not be relayed through descriptive statistics. An ethnographic qualitative design was used to understand the perceived barriers to PA among AIW, which is a specific culture-sharing group.

The researcher recruited fifteen AIW as participants from two Christian churches in Southern California. The interested candidates were provided awareness of the study by distributing recruitment flyers with the contact information of the researcher. Two focus groups of eight and seven participants were held at a park on different dates. The researcher ensured privacy and confidentiality to the participants during data collection. The data collected was transcribed verbatim and analyzed using NVivo 12 plus qualitative data analysis software. The researcher reduced the data by coding the transcripts with meaningful segments and organized the information from participants. Then, these coded units were moved to larger representations using thematic analysis. The research question “What are the perceived barriers to PA among AIW in the United States?” generated themes such as lack of time, lack of consistency, lack of motivation,

role obligations, limited social support, cultural expectations, financial constraints, and lack of affordable exercise opportunity.

Interpretation of the Findings

Most of the women viewed a physically active woman as someone who can carry out the daily activities without being tired and staying physically fit. The physical activities were described as sports, swimming, aerobics, and performing yoga or stretch exercises. The main themes for barriers to PA among AIW in the United States including lack of time, lack of consistency, lack of motivation, role obligations, limited social support, cultural expectations, financial constraints, and lack of affordable exercise opportunity were categorized as personal, social, and environmental barriers in alignment with SCT by Bandura (1998).

Barriers to Physical Activity

Several themes emerged from the data analysis on barriers to PA among AIW in the United States. The participants expressed the challenges to perform consistent PA while answering all the interview questions. The themes identified are categorized as personal barriers, social barriers, and environmental barriers.

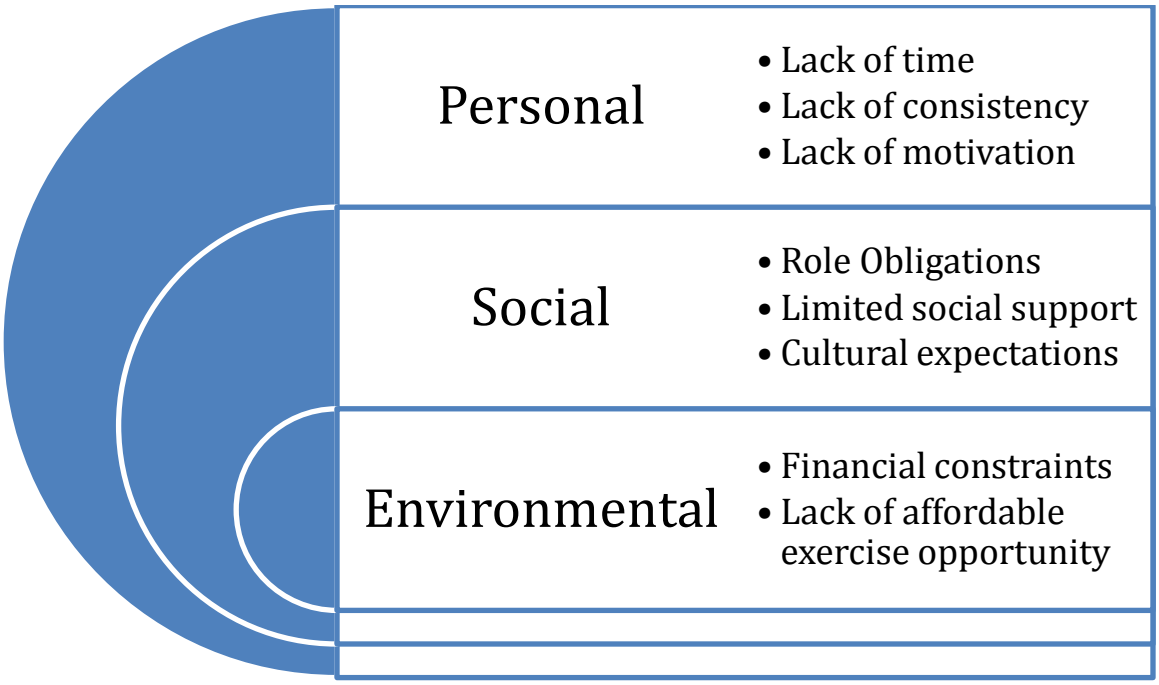

Figure 2. Thematic Display of Barriers to PA among AIW in the United States

Personal barriers. When discussing barriers to PA, commonly reported personal barriers included lack of time, consistency, and motivation. The women (*n*=12, 80%) reported that they prioritize their time to do most of the household chores such as cooking, cleaning the house, laundry for all family members, and take care of their children and husbands. Some expressed that the women are not well reputed if they find time for their own physical activity by delegating the caretaker responsibilities to other family members. The participants (*n* = 8, 53%) expressed a lack of consistency due to factors such as having to go for work and taking care of the family needs. Some felt pain and tiredness after exercises which prevent them performing PA consistently. The participants also felt loss of interest that acted a challenge in doing PA more frequently. The women (*n* = 9, 60%) said that lack of motivation and not having the right mind set to exercise were other barriers to PA. Participants from both age groups reported that AIW

are not encouraged or motivated to do PA from their childhood as compared to women in the United States.

Social barriers. The social barriers reported by the participants were role obligations, limited social support, and cultural expectations. The women (*n* = 14, 93%) reported that Asian Indian culture expects women to prioritize obligations related to their roles as wife, mother, daughter, daughter-in-law, and sister than allowing time to take care of their own heath related activities. The women (*n* = 8, 53%) expressed that limited social support and lack of a favorable mindset of the family members toward their need to PA were barriers to perform consistent exercise. Participants indicated that their husbands, children, and in-laws expect the women to prioritize taking care of home related activities and care giving tasks rather than going to gym or allocating time for PA. Cultural expectations were another barrier reported by the participants. The Asian Indian culture demands the women to be traditional and conservative and stay within the houses rather than going out and taking part in outdoor physical activities. Participants (*n* = 5, 33%) reported the male dominance in Indian culture and marriage and childbearing as the defines identities of women. Some women expressed religious responsibilities as barriers to PA.

Environmental barriers. The participants (*n*=6, 40%) reported financial limitations and lack of affordable exercise opportunities as other barriers to perform PA. The women who did not have access to gym expressed concerns on time change and weather as barriers to PA.

The findings of this study are consistent with prior researches conducted on the level of PA among AIW which indicated that AIW in the United States are more likely to have lower levels of exercise compared to women from other ethnicities in the United States (Bajaj et al, 2014; Daniel et al, 2018).The participants of this study expressed that AIW perform less PA when compared to women from other ethnicities in the United States. The women also reported that AIW has increased risk of diabetes, hypertension, and stroke due to the lack of PA, increased carbohydrate diet, and hereditary reasons. This information supports the review of prior studies that revealed increased prevalence and incidence of cardio-metabolic disorders among AIW compared to women of Japanese, Chinese, Hispanics, African Americans, and Caucasian females (Ardeshna et al., 2017; Bajaj et al., 2014; Fernandez et al., 2015).

In both the focus groups, participants discussed role obligations as a barrier for performing PA, where women are expected to prioritize their roles as wife, mother, daughter-in-law than dedicating time for their PA. Prior studies on barriers to PA among AIW reported cultural barriers including familial expectations of different roles of AIW as a potential concern for carrying out PA among AIW in the United States (Babakus & Thompson, 2012; Daniel et al, 2017; Mehta et al., 2010). The women in this study reported that AIW are expected to be submissive wives, obedient daughters-in-laws, and caring mothers who selflessly spend all their time focusing on household activities and taking care of the family members. The research studies reviewed supports this finding by indicating that role expectations among Asian women in general, include carrying out

domestic work, caregiving for children, grandchildren, parents, and family responsibilities (Chia- Huei Lin et al., 2017; Gothe et al., 2016).

Some participants expressed that the women dedicate more time for religious tasks and that prevents them from allocating time for PA. This support the finding of Misra et al. (2017) who stated that AIW immigrate the roles, values, beliefs, and ideologies of their families with them. The women reported lack of time as a barrier to perform PA due to household chores such as cooking, cleaning the house, laundry for all family members, and take care of their children and husbands. This concurs with the studies on personal barriers seen among women associated with PA that revealed inadequate time as a major challenge due to house hold responsibilities and busy life style (Ashton et al.,2017, Chia-Huei Lin et al., 2017; Mathews et al., 2016).

The women reported lack of motivation, limited social support and cultural expectations as barriers to PA among AIW in the United States. This correspond with the findings of previous studies that discussed the social barriers negatively impacting PA such as lack of encouragement from family and friends, gender discrepancies, decreased social support, and expectations of role as an Indian woman (Daniel et al., 2017; Miller et al., 2017; Alvarado et al., 2015). The other barriers discussed in this study were financial constraints, lack of affordable exercise opportunities, potential for injury, time change and weather conditions. This information support environmental barriers reported by previous researchers such as lack of accessibility to a gym, affordable group exercise opportunities, uncomfortable and unpredictable weather and fear of being injured from

slipping and falling (Chang et al., 2018; Daniel et al., 2017; Gupta et al., 2017; Mathews et al., 2016).

Lack of consistency was a barrier expressed by the participants and this information was not reported by any of the previous researchers. The women indicated that they are not able to consistently perform PA due to lack of self-motivation, fatigue and being lazy. This finding contributes to the knowledge of barriers to physical activity. The review of literature revealed a gap in the current literature on barriers to PA among AIW in the United States. Hence this study adds to the body of knowledge on perceived barriers to PA among AIW in the United States.

Social Cognitive Theory and Barriers to Physical Activity

The triadic reciprocal determinism of SCT indicated bi-directional effects between behavior, personal factors, and environmental factors that generate behaviors (Bandura 1998, 2001, 2004). Based on this theory, the themes emerged from this study were categorized as personal, social, and environmental barriers to PA among AIW in the United States. This supports the study done by Joseph et al. (2017) on cultural relevance of SCT in enhancing PA among African- American women and Mehta et al. (2010) on Asian Indians. The findings of these study indicated that SCT is appropriate for

understanding various barriers associated with PA behavior.

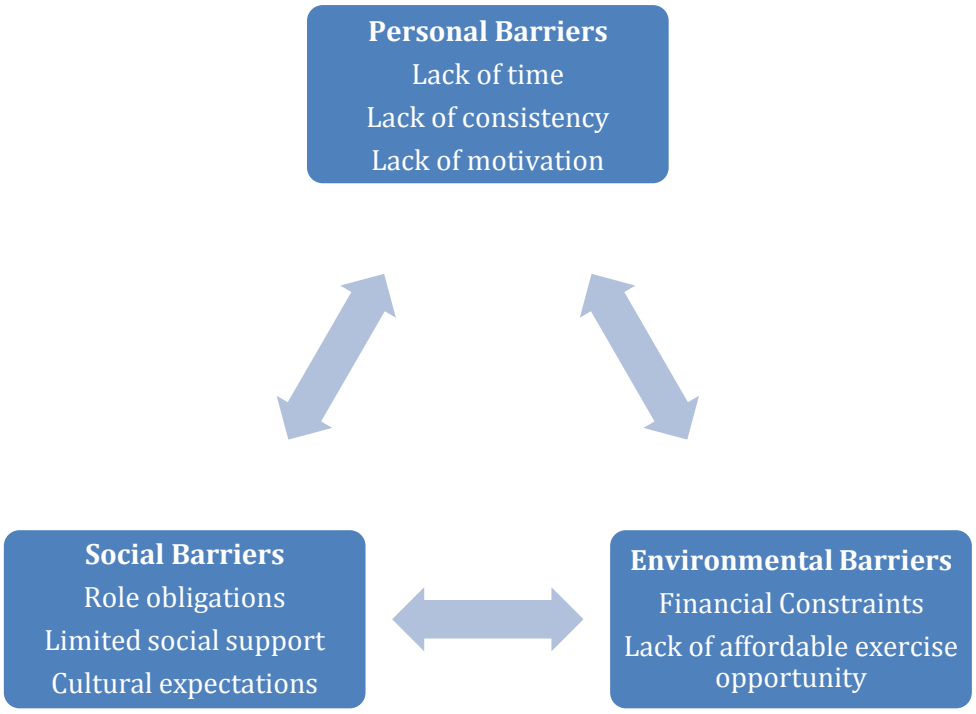

Figure 3. Reciprocal Determinism of Barriers to PA

In this study, the barriers to PA were viewed under the lens of reciprocal determinism including personal, social and environmental factors. The personal barriers reported by the women were influenced by social and environmental barriers, social by personal and environmental, and environmental by social and personal barriers. For example, the women reported lack of time which is a personal factor as one of the barriers to PA. The lack of time is due to the role obligations, which is a social barrier. Due to the lack of time, women are unable to access affordable exercise opportunities, which is an environmental barrier. Similarly, cultural expectations are a social barrier that

influences lack of consistency and motivation that are personal barriers, and financial limitations which is an environmental barrier where women are not well perceived if they spend money for attending a gym.

Limitations of the Study

The scope of this study was limited to AIW residing in the state of California, United States. The sample consisted of fifteen participants who shared their perceptions on barriers to PA. The focus groups were conducted at a park, which is a natural environment, allowing the participants to communicate freely without being influenced. The qualitative research design allowed flexibility in exploring the barriers to PA among AIW in their own environment (Polit & Beck, 2012).

A limitation of this study is its limited generalizability to other cultures. The credibility was ensured by audiotaping the interviews and transcribing verbatim of the interviews. Reflexive journaling by the researcher prevented researcher bias and provide authenticity to the data collection and analysis. The scope to generalize the findings to other ethnicities or gender in the United States or women population living in India was limited. The researcher used thick description of the research setting and study participants. In addition, providing external evidences during data analysis ensured transferability of the study. By providing immediate feedback to the participants on emerging interpretation during data collection phase, dependability of the study was achieved.

Another limitation of the study was that the researcher was an AIW residing in the United States. To avoid researcher bias and ensure confirmability, researcher used

reflexive journaling that included documentation of the interests, personal values, role conflicts, feelings that impact neutrality of the researcher. The researcher asked herself the questions prepared for focus group interview, wrote the answers, and avoided any leading questions.

A third limitation of the study was the lack of member checking for validation of analysis. The researcher provided feedback during the interview process to ensure accuracy of interpretation. The participants may also engage in group thinking and not express their own thoughts or perceptions due to the nature of focus groups.

Recommendations

While this study examined the perceptions of barriers to PA among AIW in the United States, the study only reflects the thoughts of the specific participants. For example, all of the participants were recruited from two Christian churches at Southern California. A similar study conducted among women of other religious institutions may assist in exploring the cultural barriers associated with PA in different religions. Equally important, all of the participants in current study were either married or never married. The researcher recommends studying the barriers to PA among divorced and widowed AIW to explore the social barriers. Last, all of the women were from Indian descendent. Understanding the influence of culture may yield different results.

There are few researches that focused on the barriers and motives to PA among AIW in the United States (Daniel et al., 2017; Gupta et al., 2017). The researcher recommends further studies to bridge the gap in literature by exploring the barriers to PA among AIW in other immigrant countries. Future researches may show the significant

impact of PA on AIW globally. Future research is also needed to explore the possibilities of culturally sensitive interventions addressing the barriers associated with PA among this population.

It is further recommended that future researches examine the barriers to PA among Asian Indian men living in the Unites States. The prior studies demonstrate an increased risk of cardiovascular diseases in Asian Indian population (Ardeshna et al., 2018; Joshi et al., 2007). According to Daniel, Abendroth, and Erlen (2018), lack of PA is the main cause of cardio-metabolic disorders. Hence, the researcher recommends future investigations to explore the barriers to PA among Asian Indian men living in the United States.

Implications

The current study explored the barriers associated with PA among AIW living in the United States. Studies on AIW revealed an increase in cardiometabolic disorders when compared to women from other ethnicities (Ardeshna et al., 2018; Chopra et al., 2013; Joshi et al., 2017; Venkatesh et al., 2017). This is due to lower level of PA among this population ((Hanlon et al., 2017; Joseph et al., 2015; Mehta et al.,2010). Asian Indian culture demands selfless focus on family and kinship from their women population (Mehta et al., 2010). The barriers perceived by AIW participated in the current study are culturally specific due to role obligations, prioritizing family and lack of social support. An understanding of these barriers assists in planning culturally geared interventions among AIW. The interventions that addresses cultural challenges will have an improved outcome by increasing the PA behavior among AIW in the United States. An increase in

the level of PA will reduce chronic morbidities among AIW and provide better quality of life.

Theoretical implications. The study was guided by SCT by Bandura (2004). According to SCT, a person's behavior is controlled by social environment and person's knowledge. The triadic reciprocal determinism demonstrated by Bandura (1989) implies the bidirectional influence of various factors such as personal and environmental factors on a person's behavior. Hence, the SCT is the most appropriate theory for describing the perceptions of barriers of AIW in the United States to PA behaviors. The current study found that social barriers including role obligations, personal barriers such as lack of time, and environmental barriers such as lack of affordable exercise opportunities has influence on each other, and these barriers control the level of physical activity behaviors among AIW in the United States.

Methodological implications. This study used an ethnographic qualitative design as it focused on perceptions of a specific culture sharing group, AIW in the United States. The objective of this study was to explore the perceptions of barriers to PA and the ethnographic design answered the research question. The results from this study imply that an ethnographic approach is the most appropriate research method to understand the perceptions of AIW in the United States.

Recommendations for practice. The findings of this study indicate that personal, social and environmental barriers to PA reduces the level of PA among AIW in the United States. The researcher recommends that health professionals should use this study to develop culturally sensitive interventions that increases the PA behavior in this

population. It is also recommended that health care providers should use the findings of this study to identify unique strategies of PA behaviors, such as family walking program or community exercise programs to improve the health of AIW in the United States.

Conclusion

Increased level of physical activity reduces the risk of cardio-metabolic disorders. Insights from this study provides an understanding of the barriers specific to AIW in the United States, which may help the health care providers to develop health care programs that increases the level of PA and improves the health of this population. This study reveals the culturally specific barriers encountered by AIW in the United States.

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