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Essential Components of Participation for an Exercise Program for Underserved, Older, African-American Females

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Essential Components of Participation for
An Exercise Program for Underserved,
Older, African-American, Females

by

MARINA D. MEINERT

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Sport & Exercise Science
in the College of Health Professions and Sciences
and in the Burnett Honors College
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ABSTRACT

Physical activity (PA) is beneficial to people of all ages and ethnicities. Regular physical activity can reduce the risk of multiple chronic diseases, improve mood and sleep and allows your body to function better overall (CDC, 2018). However, populations that are more vulnerable to adverse health risks may benefit more than others from regular physical activity. This study was designed to identify the motivating factors for physical activity in a sample of older, African-American women of lower socioeconomic status (SES). This particular subgroup was chosen because of their increased risk of obesity and cardiovascular disease due to unhealthy lifestyle factors, specifically low levels of PA. (CDC, 2017). A secondary aim of this study was to determine the essential components necessary to create a successful PA program within this population. By determining the feasibility and acceptability of a PA program to target this specific population, further PA programs can be designed to promote adoption and sustainability of PA in this high-risk population.

This study consisted of 8 African-American women of lower SES at an average age of 65 and average BMI of $32 \frac{\text{kg}}{\text{m}^2}$. The participants volunteered to participate in an 8-week exercise program for this study. The exercise class lasted 45 minutes and consisted of light aerobics, weight training, and mobility/flexibility exercises. After the 8 weeks, the participants were given questionnaires, surveys and participated in a focus group to collect data about their experiences. The Hebni staff and exercise instructors observed that there was 100% attendance and compliance throughout the 8 weeks. They also noted that the participants had positive attitudes and stayed actively engaged throughout the classes. After reviewing the data, it was noted that the necessary components to a successful exercise program for this population was a sense of community, cultural considerations, a community and familiar setting, and a reliable and open-

minded instructor. The data showed that 100% of the participants continued participating in PA outside of the program and felt less stressed after exercising. This study is unique and important in that it looks at physical activity and its motivating factors in this population versus the ample research that focuses on why this population is sedentary but offers no solution to the problem.

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LIST OF ACRONYMS (or) ABBREVIATIONS

PA	Physical Activity
SES	Socioeconomic Status
UCF	University of Central Florida
CDC	Centers for Disease Control
U.S.	United States

CHAPTER ONE: INTRODUCTION

Physical activity (PA) has been shown to decrease the risk of chronic health conditions, such as cardiovascular disease, obesity, and Type 2 diabetes (CDC, 1999). The Centers for Disease Control recommend that U.S. adults should participate in 150 minutes of moderate intensity PA or 75 minutes of vigorous intensity each week for optimal health. Despite the recommendations, a large proportion of adults do not get the recommended levels of PA (CDC, 2017). Additionally, differences in PA participation are observed between genders, age status, race/ethnicity, and socio-economic status (SES) (Saffer, 2011). Among U.S. adults, African-American women who 65+ years of age, and living in a low SES area, are the least likely to accumulate sufficient levels of PA, with only 21.5% of this population meeting the recommended guidelines (NPHP 2005, Bauman et al. 2002). This is particularly concerning, given that this specific population has the highest risk of obesity, cardiovascular disease, and type 2 diabetes (CDC, 2016). Given the population's high risk of chronic health conditions, coupled with their inadequate PA levels, it is critical to better understand, not only the barriers to PA in this population, but also the perceived benefits and essential features of a PA intervention needed to promote ongoing PA participation.

There is a dearth of research that examines barriers to PA in African American, older women from low SES neighborhoods, however, these studies lack the perceived benefits and positive influences that encourage PA in this population. In other words, studies have consistently reported that these individuals refrain from PA due to financial constraints, lack of time, no modes of transportation, and living in a high crime area, but there is limited information based on the factors associated with increased PA in this population (Howard University, 2013). To successfully implement an effective, yet sustainable PA program, it is critical to address

barriers, and at the same time, include the essential components needed to engage participants and promote ongoing participation in the program.

Studies have speculated that social support and convenience to programs may be positively linked with participation in PA, but few studies have actually examined reasons for continued PA participation in a sample of currently active, African-American women (65+ years of age) from low SES backgrounds. Given the extensive evidence indicating both the high risk of chronic health conditions and low levels of PA in this population, it is critical to evaluate reasons for continued PA participation. Therefore, the purpose of this study was to identify reasons for continued PA participation in a sample of older, African American women of low SES neighborhoods, who were currently participating in an ongoing exercise program. Findings from this study could have widespread implication for designing and implementing effective PA programs targeting this population.

CHAPTER TWO: LITERATURE REVIEW

Physical Activity in U.S. Adults

The CDC recommends 150+ minutes of moderate intensity physical activity throughout the week. Unfortunately, only 23.5% of adults (18 years and older) in the United States meet the Physical Activity Guidelines for both aerobic and muscle-strengthening activity (CDC, 2017). The percentage of adults that participate in 30 minutes of daily physical activity is at a shocking 5% (HHS Office & Council on Sports, 2017).

Lower Socioeconomic Status Groups

Certain populations are affected by obesity more than others. Generally, individuals of low socioeconomic status (SES) participate in significantly less physical activity when compared to individuals of mid to high SES (Giles-Corti & Donovan 2002; Pampel et al, 2010). It has also been shown that individuals of a low socioeconomic status have poor diets and lack sufficient nutrition (Giles-Corti & Donovan 2002; Pampel et al, 2010). Individuals with lower levels of education and income have been shown to have higher levels of obesity. In a population of adults who did not graduate high school, 33% were obese compared to adults that graduated from college or technical college, 21.5% were obese (Trust for America's Health, 2011). Over 33% of adults that earn less than \$15,000 annually are considered obese versus 24.6% of adults that earned at least \$50,000 annually were obese (Trust for America's Health, 2011).

Minority Groups

Obesity and type II diabetes are a continuing and growing concern in the United States, especially for older adults (Hendrickx et al, 2005). All age groups are increasingly at risk for obesity, however, the prevalence of obesity in older adults, those 60 years and older, are at an all-time high (Villareal et al, 2005). According to the Centers for Disease Control and Prevention, (CDC) in 2015-2016 about 41% of older adults were considered obese.

According to the Centers for Disease Control, the prevalence of obesity is lower in women with the highest income group in comparison to those in the middle- and lower-income group. Obesity has affected the entire nation immensely and progressively, however, African-American women have been affected the worst. Statistics show that 60% of black women are considered obese in comparison to 41% of Hispanic women and 32% of white women. African-American women have a 50% chance of developing Type 2 diabetes in their lifetime as well as an increase in the chances of developing cardiovascular disease and arthritis (Dingfelder, 2013).

High Risk Groups

The benefits of physical activity (PA) and proper nutrition have been established in all populations, however, certain sociodemographic characteristics have been associated with even greater benefits beyond the general public (Giles-Corti & Donovan, 2002; Vogel et al., 2009). The individuals that are at a particularly high risk are those who fall under both categories of older adults and low SES. Two such populations are individuals of lower socioeconomic status (SES) and older adults (60+ years). These two populations tend to have greater levels of obesity, cardiovascular disease, depression, psychosocial stress, and poor sleep quality, all factors shown

to be improved by nutrition and PA (Napoli et al., 2014; Cason-Wilkerson, Goldberg, Albright, Allison, & Haemer, 2015; Hughes, Power, Liu, Sharp, & Nicklas, 2015; Stefano et al., 2015).

Unfortunately, these populations tend to have poor nutrition habits and insufficient PA (Sergi, Bano, Pizzato, Veronese, & Manzato, 2017; Turlouki, Matalas, & Panagiotakos, 2009; Blaine et al., 2015; Faith, Dennison, Edmunds, & Stratton, 2006). For example, less than 25% of adults over the age of 60 engage in the recommended levels of PA (Merom et al., 2009), and individuals living in households below the poverty line are 2.7 times more likely to be obese compared to those living in higher SES areas (Demment, Haas, & Olson, 2014; Jin & Jones-Smith, 2015). Therefore, it is essential to develop health interventions to target these populations, and even more importantly, it is critical for such interventions to be sustainable in order to maximize the benefits of these health behaviors (Napoli et al., 2014; Taylor et al., 2007; Bukman et al., 2014).

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

Design and Setting

This study is designed to determine the reasons why or why not the participants will show compliance during an 8-week, voluntary exercise program. This will be a qualitative exploratory study that will consist of a collaboration between researchers at UCF and Hebni Nutrition Inc. Hebni Nutrition is a community organization that provides nutrition programs to underserved minority groups. For the current study, Hebni Nutrition will provide the nutrition education program through their network of dietitians and health coaches, while researchers from the School of Kinesiology and Physical Therapy at UCF will provide the exercise program.

Subjects

Participants included eight African-American women (65 years or older), who were enrolled in an 8-week exercise program offered by Hebni Nutrition. In order to be eligible for the exercise program, individuals also had to be enrolled in the Hebni Nutrition Program, which catered to areas of low SES in Orlando, FL. The targeted communities had 35% of individuals who live below the poverty line (compared to 19% of the average Orlando community), and 46% of individuals receiving less than a high school education (compared to 11.9% of the average Orlando residents). Additional criteria included physician clearance to participate in exercise and the ability to regularly attend the exercise/nutrition education sessions.

Procedures

Adults that were already a part of the Hebni Nutrition community and program had the opportunity to participate in an 8-week exercise program offered by the University of Central Florida. The combined nutrition and exercise program will consist of a 1x a week 90-minute session (45 minutes of nutrition education and 45 minutes of exercise activity). The nutrition education program will follow the Hebni Nutrition's standard program, and the exercise sessions will be developed by a collaborative effort from Hebni Nutrition investigators and Sport and Exercise Science investigators from UCF. The UCF investigators will utilize evidence-based exercise components shown to improve health in aging adults, and Hebni Nutrition will assist in adapting the program to fit the needs of the community participants. For example, investigators from Hebni Nutrition have emphasized that the participants will be starting from a very low fitness point and will typically not have access to a local fitness facility. Therefore, it was suggested that UCF investigators provide a lesson on using basic equipment (e.g. resistance bands) that cater to individuals beginning a strength training program and can easily be practiced at home.

After sign-up, the exercise program began on Mondays for about minutes, with sessions occurring weekly. At the end of the exercise program, post data will be collected in addition to short focus groups that will ask participants about their experience in the program. Based on previous nutrition education and exercise sessions implemented by Hebni Nutrition, adherence rates will be expected to be approximately 85 - 90%. This high rate is partly due to Hebni's ability to cater to the needs of the underserved communities and the incentivized nature of their programs. The combined nutrition education and exercise program will be designed in a similar fashion.

Outcome Measures

At the end of the exercise program, study research assistants administered the following measures, described below.

Decisional Balance Questionnaire

A Decisional Balance Questionnaire (Nigg et al., 1998) was administered to the participants. This 10-item questionnaire assessed both the positive and negative aspects of exercise, with statements such as “I would feel less stressed if I exercised regularly”. Response options were listed on a 5-point scale from 1 (Extremely important) to 5 (Not important at all). Negative statements were reverse scored so that a higher value is associated with more positive aspects of exercise.

Focus Groups

Participants took part in focus group session, lasting approximately 15 – 20 minutes. Participants were asked a series of questions pertaining to their experience with the exercise program, perceived barriers and benefits to the program, reasons for continuing exercise, and their engagement of physical activity outside of the exercise program. Two research assistants oversaw the group discussion, with one assistant leading the discussion, and the other taking detailed notes.

Physical Activity and Nutrition Self-efficacy

Sallis et al. (1988) developed separate scales for PA and nutritional self-efficacy. These 20-item surveys ask participants to rate how confident they are to engage in various exercise (e.g.

how confident are you that you exercise when the weather is bad?) and diet behaviors (e.g. how confident are you that you can buy fruits and vegetables at the grocery store?). Higher scores indicate better self-efficacy.

CHAPTER FOUR: RESULTS

Participant Characteristics

The participants for this study had an average age of 65 and an average BMI of $32 \frac{\text{kg}}{\text{m}^2}$. All 8 participants were also African-American women of lower SES. Although this sample was not very experienced when it came to exercise knowledge and the importance of good form and range motion, they were all willing to put in the effort and participate. These participants showed interest in learning the exercises and gave regular feedback on what they did or did not like. This sample is close in the fact that they all live in the same, close-knit community and share similar values. Overall, this sample enjoyed being personally involved in the program and adapted it as their own which increased their compliance and success of the program.

Attendance in the Program

According to the exercise instructor, all eight participants attended every exercise session, indicating that there was 100% compliance in the program. The exercise class took place on Monday evenings at 5pm in Orlando, Florida – the busiest time of day to be on the road. However, regardless of the traffic and inconvenience, there was 100% attendance throughout the program; including the evening of Labor Day Monday.

Perceived Barriers and Benefits

Results indicated that 7 out of the 8 (88%) participants would have more energy for their friends and family, felt that they would feel more comfortable with their body if they exercised regularly, felt less stressed when they exercised, and that exercise would give them a more

positive look on life. All eight of the participants (100%) felt that exercise did not prevent them from spending time with their friends. Six of the 8 participants (75%) felt that exercise put them in a better mood for the rest of the day, and only 1 participant (12%) felt uncomfortable exercising in front of others. Table 1 summarizes these results.

Participant Focus Group Discussions

All eight participants took part in the focus group discussions, led by a trained investigator. All of the participants were seated at a table with the investigator, who also took notes during the discussion. Table 2 summarizes the main themes regarding participants' responses.

Instructor and Staff Observations

The study investigators recorded observation reported by the exercise instructors and staff from the program. The observations from the instructors and staff can be categorized into three themes:

1. Participants' experience in the program
2. Strategies to address potential barriers
3. Essential components for an effective exercise program.

Participants' Experiences in the Program

The primary instructor noted that participants were always engaged and enthusiastic about the program. The instructor noted that the participants became very close throughout the duration of the program, suggesting that they formed their own close-knit community. The

instructor also noted that although the participants reported perceived barriers to exercise, these barriers did not affect participation in the program since they did come to every session. The participants grew a strong bond together by the end of the 8-weeks and some even made plans to continuing exercising together regularly in the future.

Strategies to Address Potential Barriers

The instructors and staff noted that participants adopted a number of strategies to ensure that all of their exercise group members were present at every session. The instructors all noted that the participants motivated each other and held each other accountable for their attendance, promptness and participation. The instructor noticed that each member of the group began to exchange telephone numbers and eventually started to carpool to the exercise program. If any member of the group was ever late, a fellow participant would call or text to get their whereabouts and inform the instructor they would be arriving momentarily.

Table 1: Participant Solutions to Challenges

Program feature or challenge	Observations
Transportation	Participants carpooled
Lack of motivation to attend	Participants held each other accountable through text messaging reminders
Lack of motivation to increase intensity of exercise	Participants good-naturedly called out other participants for “slacking”
Any health issues	Instructor demonstrated several modifications of exercise so all participants could complete it safely

Essential Components of the Exercise Program

Based on participants' responses during the focus group, instructor and staff observations, and their interactions with participants, several essential components were derived that may be vital to consider when developing an exercise program targeting this population. First and foremost, for this population, the most essential component to a successful exercise program is to provide a community feeling, whether that be the location or setting. Secondly, cultural and racial aspects and values must be considered and incorporated into the program. Third, the exercise instructor for the program matters immensely. The age, race and even gender of the instructor do not necessarily matter as there were several instructors for this study with different ages, genders and backgrounds. However, the instructor must be actively listening throughout the session and constantly using the feedback that is given. The instructor needs to be assertive without yelling or aggression while maintaining the upbeat energy during the session. Lastly, solutions to potential barriers must be recognized and offered if necessary.

Table 2: Essential Components to a Successful Exercise Program for this Population

Essential Features	Description
Community setting	Participants appeared more comfortable at the community center rather than a high-priced gym – appeared less intimidating
Cultural considerations	All Hebni staff is African American & integrate their culture into their programs
Sense of community	Participants were very supportive & caring of each other – felt like family
Exercise Instructor	Likeability of instructor very important

CHAPTER FIVE: DISCUSSION

The purpose of this study was to examine reasons for continued participation in an exercise program in a group of older, African-American women from disadvantaged neighborhoods. Results of this study revealed that all participants enjoyed the exercise program, attending every single exercise session, despite perceived barriers such as work conflicts, time constraints, and lack of transportation. Additionally, the combination of social interaction, group bonding, and the supportive community setting were essential to the ongoing success of the exercise program. This specific population was chosen due to their statistical lack of physical activity and little research done on PA compliance. The success of the exercise program for this population was primarily due to the sense of community and feel of hospitality. The second most important reason for compliance, according to the participants' focus group discussion, is the reliability and liability of the exercise instructor. A nice gym with extensive equipment, space, and resources is not necessary, as long as the above factors are included and considered.

Conclusion

For older African-American females of low socioeconomic status, specific factors should be considered to promote physical activity. Although this population is the least physically active in the U.S. according to the CDC, if certain aspects are met, successful compliance is possible. Cultural and community-based considerations are crucial to compliance in an exercise program for this population. This sample cherished their community and the people who lived in it. Actively being a part of their neighborhood and community was a big part of their involvement and enjoyment of the program. Instructor likability and reliability is necessary to have success

promoting PA to this sample. The instructor must consistently and actively listen to the members of the program as well as use the feedback they provide. Other perceived barriers, such as time and space were shown to not matter as long as the other conditions are met.

Implications

Findings from our study will have several implications for future studies in aging adults. Our study will be one of the first to examine the combined effect of nutrition education and exercise in underserved older females. Comparison of the two conditions (nutrition vs nutrition/exercise) will also allow us to determine the extent to which exercise and nutrition independently improve health benefits. Both the nutrition education and exercise program have been constructed to enable participants to engage in these activities while in the home environment; therefore, the proposed study aims to improve sustainability over the long term. Both aging populations and individuals from disadvantaged neighborhoods are both independently associated with poorer health habits, and therefore, it is critical to examine this particular population who may be at an even greater risk of physical and psychosocial health concerns.

Bookmarks

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