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"Having Our Say": Exploring the Processes and Feasibility of a Community-Based Participatory Intergenerational Physical Activity Program for Grandparents Raising Grandchildren

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"Having Our Say": Exploring the Processes and Feasibility of a Community-Based Participatory Intergenerational Physical Activity Program for Grandparents Raising Grandchildren

by

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A dissertation submitted in partial fulfillment
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DEDICATION

To my Daddy who showed me how to dream. To my Mommy who taught me to be sure my words are followed by actions.

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ABSTRACT

Over the past twenty years, the number of grandparents raising grandchildren has increased substantially. In many cases, raising grandchildren can be stressful and may aggravate pre-existing health conditions. Grandchildren in these kinship relationships often experience poor health outcomes as well. Typically, both grandparents and grandchildren do not engage in positive health behaviors. Thus, there is a need to develop intergenerational health promotion interventions for grandparents raising grandchildren. This study used the community-based participatory research approach to develop and implement an eight-week intergenerational program for kinship families. The specific goals of this descriptive study were to understand the process and feasibility of developing and implementing the intervention from the perspective of key stakeholders. Content analysis of observational, focus group, and interview data from grandparents, nurses, exercise instructors, and recreation staff provided an in-depth account of the intervention's process (i.e., recruitment, dose delivered, dose received, fidelity, and context) and feasibility (i.e., acceptability, demand, practicality, and integration). Repeated measures ANOVAs were used to determine if the intervention had an effect on participants' health outcomes (i.e., quality of life, depression, blood pressure, waist circumference, heart rate, weight, balance, and BMI) over time. Although analyses did not result in statistically significant effects on health outcomes, the data trends indicated the possibility of health improvements given a larger sample size. The distinct details gleaned from this study can provide researchers, community organizations, and practitioners with guidance on how to use community

partnerships and existing strengths to develop and implement effective community-based intergenerational interventions.

CHAPTER ONE:

INTRODUCTION

Grandparents raising grandchildren is a form of primary childcare that has multiplied over the past 20 years (Lugaila, 1998; Simmons & Dye, 2003; U.S. Census Bureau, 2011a).This increase is due to many factors including parental child abuse, neglect, drug abuse, economic hardship (P. Taylor, Livingston, Wang, & Dockterman, 2010), divorce, and death (Gleeson et al., 2009). Raising grandchildren can be a stressful form of caregiving that may exacerbate adults' preexisting health conditions (Whitley, Kelley, & Sipe, 2001). Thus, these grandparents may exhibit worsened symptoms of chronic diseases and functional limitations (Minkler & Fuller-Thomson, 2005).Unfortunately, because of their caregiving roles, oftentimes grandparents are unable to engage in health behaviors that may mitigate these issues (Hughes, Waite, LaPierre, & Luo, 2007; Roe, Minkler, Saunders, & Thomson, 1996). For example, research has shown that caregiving grandparents may not engage in regular exercise (J. Y. Taylor, Washington, Artinian, & Lichtenberg, 2008; Whitley et al., 2001). Whitley, Kelley, & Sipe (2001) examined 100 grandparents who were raising grandchildren and found that 45% of the grandparents exercised less than once a week.

The issue of poor health extends beyond the grandparent. Grandchildren in grandparent-led households may also exhibit poor behavioral and physical health outcomes (Bramlett & Blumberg, 2007) due to their low socioeconomic status (Baker & Mutchler, 2010). Although there is a lack of literature that examines the physical activity of grandchildren in kinship care,

many studies have noted that children, in general, do not engage in the recommended 60 minutes of daily physical activity (U.S. Department of Human Health Services, 2009). It has been suggested that potential causes of these low rates of involvement include that the behavior is not modeled by adults (Madsen, McCulloch, & Crawford, 2009), the children's engagement in sedentary activities (Jago, Fox, Page, Brockman, & Thompson, 2010), and impediments due to the physical environment (Ferreira et al., 2007). Because both generations experience life stressors and barriers that are associated with negative health outcomes, the members of these families, and particularly the grandparents, could potentially benefit from the implementation of an intergenerational physical activity program to mitigate their health issues.

Researchers and practitioners have begun to develop health promotion interventions to address the health problems of grandparents involved in kinship care (Bigbee, Boegh, Prengaman, & Shaklee, 2011; Kelley, Whitley, & Campos, 2012; Kicklighter et al., 2007). However, there has been less effort to implement intergenerational programs that affect the health of both the grandparent and grandchild. In general, intergenerational programs have promise because the benefits could extend across generations. Older adults participating in a variety of intergenerational programs have seen benefits to their physical (Barron et al., 2009), cognitive (Carlson et al., 2009; Carlson et al., 2008), and social health (Fried et al., 2004). Existing intergenerational health promotion programs focusing on children's outcomes have noted positive outcomes such as decreased obesity risk and increased physical activity (Sacher et al., 2010; Werner, Teufel, Holtgrave, & Brown, 2012). There is also promise for positive health outcomes in the grandparent and grandchild familial context as research has shown that parents' modeling of positive health behaviors increases similar behaviors in children (Madsen et al., 2009). Thus, it is reasonable to expect that grandparents taking on a parenting role may have a

positive effect on their grandchildren's health behaviors while simultaneously improving their own health as a result of participating in intergenerational programs that focus on health promotion.

Thus, there is a need to develop an intergenerational health promotion intervention in the context of grandparents raising grandchildren. In addition to development, it is important to assess the potential outcomes, understand the process involved in implementing these programs, and investigate their feasibility in an effort to maximize their efficacy and sustainability for future replication. Examining components of process and feasibility using the community-based participatory research (CBPR) framework may support the aforementioned research efforts. CBPR is a comprehensive but flexible collaborative approach to research. It engages all potential stakeholders in the research process to obtain various perspectives and create a shared vision (Israel, Schulz, Parker, & Becker, 2001).

Perry and Weatherby (2011) demonstrated the potential use of CBPR in an intergenerational physical activity intervention. The researchers collaborated with a community advisory board and community members to determine the type of intergenerational programs in which the community would participate. After meeting with the advisory board, conducting focus groups, and administering surveys to the older adults and youths' parents, it was discovered that the community was interested in a tai chi program. Next, the researchers developed and implemented the tai chi program and conducted a feasibility study. Integrating a CBPR approach allowed the researchers to engage the community in the decision process to ensure individuals were interested in and committed to the intervention.

Similar to the study conducted by Perry and Weatherby, the overarching goals of this study were to use CBPR to develop an intergenerational physical activity program with various

community stakeholders. However, this study was conducted in the context of grandparents raising grandchildren. More specifically, the aims of this study were to conduct a process evaluation and a feasibility study of the intergenerational physical activity intervention involving grandparents and grandchildren. The goals of the study were addressed using a multiphase mixed methods design that included the use of focus groups, observations, survey data, and objective and subjective measures of health. Addressing these aims should not only help to address the health issues faced by grandparents and grandchildren, but hopefully it will provide a blueprint for researchers, community organizations, and practitioners on how to harvest the energy of community and familial connections to best implement and sustain similar community programs.

CHAPTER TWO:

LITERATURE REVIEW

Profile of Grandparents Raising Grandchildren

Grandparents raising grandchildren is classified as kinship care, a type of caregiving provided to children by relatives other than the parents. Kinship care varies in length of time and can be the result of a private agreement made among family members or a formal agreement authorized by the Department of Human Services (Leos-Urbel, Bess, & Geen, 1999). The rise in this type of care is due to many parental factors such as child abuse, neglect, drug abuse, divorce, and death (Simmons & Dye, 2003). According to the 2000 U.S. census, 2.4 million grandparents were responsible for the care of their grandchildren (Simmons & Dye, 2003). In 2011, the number of grandparents caring for their grandchildren had increased by 12% to over 2.7 million. In addition, 39% of these grandparents had been responsible for their grandchildren for 5 years or more (U.S. Census Bureau, 2011a). This care typically involves taking responsibility for grandchildren under the age of 18 (Simmons & Dye, 2003).

In most of these circumstances, women (63%) fulfill this caregiving role, and they tend to be relatively young. Recent census data illustrates that only 33% of these women are aged 60 and older. Furthermore, it illustrates that of those providing kinship care 59% percent are White, 24% are Black, and 17% are Hispanic (U.S. Census Bureau, 2011b). The majority of caregiving grandparents are married and employed (61%); however, 22% of them have incomes below the poverty level (U.S. Census Bureau, 2011a).

There are benefits associated with their caregiving role. Many grandparents discuss the joy of raising their grandchild in the context of generativity and the ability to give back to younger generations (Hayslip & Kaminski, 2005). They often believe that they are getting a second chance to "make-up" for the mistakes they made with their own children (Gattai & Musatti, 1999). Grandparents have also reported increased levels of self-esteem related to being able to help their grandchildren (Pruchno, 1999).

While a grandparent's caregiver role can be a joyous and welcomed opportunity, the often unexpected nature and long duration of caregiving for grandchildren can have many repercussions for both generations. Previous research has indicated that grandparents raising grandchildren are at an elevated risk for multiple health concerns (Lee, Colditz, Berkman, & Kawachi, 2003; Minkler, Roe, & Price, 1992; Strawbridge, Wallhagen, Shema, & Kaplan, 1997). Their risk for multiple health problems may be exacerbated by low socioeconomic status and complicated familial circumstances resulting in the care of their grandchild (Hughes et al., 2007). Combined, all of these factors have led researchers and public health officials to be concerned about the growing number of grandparents raising grandchildren and the issues surrounding the health of these individuals.

Grandparents' Health

Physical health. Research has shown that grandparents caring for grandchildren may exhibit worse symptoms of chronic diseases and functional limitations (Minkler & Fuller-Thomson, 2005) than their peers who do not have this responsibility. Their poor health may be further exacerbated by the primary caregiving of a grandchild (Whitley et al., 2001). Strawbridge, Wallhagen, Shema, and Kaplan (1997) examined multiple types of caregivers and non-caregivers in 1974 and 1994. They found that grandparent caregivers were more likely to

experience worse health outcomes at both measurement points in comparison to non-caregivers. Similarly, in a sample of 485 Ohio grandmothers, Musil and colleagues (2010) indicated that grandmothers raising grandchildren reported worsening physical health over time. Thus, this caregiving experience may increase grandparents' risk for specific diseases. For example, Lee, Colditz, Berkman, and Kawachi (2003) found that grandparents who provided nine hours or more of childcare a week had a greater risk of cardiovascular problems. Minkler et al. (1992) documented grandparents' complaints of joint stiffness (51%), back pain (41%), and heart problems (25%). In addition, researchers have noted that many grandparents who provide care to grandchildren suffer from functional limitations (Minkler & Fuller-Thomson, 2005) as a result of conditions such as diabetes, visual impairment, hypertension, thyroid dysfunction, and arthritis (Cross & Day, 2008). Furthermore, their risk for multiple health problems is heightened by their low socioeconomic status resulting in poor access to healthcare and nutritional foods (G. A. Kaplan & Keil, 1993). The stress associated with the complex familial circumstances that resulted in the custody or guardianship of their grandchild (Hughes et al., 2007) can also exacerbate their health problems.

Mental health. The psychological and emotional consequences of being the primary caregiver of a child can be overwhelming for a grandparent (Strong, Bean, & Feinauer, 2010). In regards to mental health, depression is the most commonly studied outcome of grandparent caregiving (Goodman & Silverstein, 2006; S. Kolomer & P. McCallion, 2005; Minkler, Fuller-Thomson, Miller, & Driver, 1997). Studies conducted by Minkler et al. (1997) and Strawbridge et al. (1997) found that grandparents raising grandchildren had double the rate of depression when compared to non-caregiving grandparents. More recently, Musil et al. (2010) indicated that primary caregiving grandmothers reported more stress and depressive symptoms than non-

caregiver and non-custodial grandparents. Many grandparents in the study also expressed concerns regarding their caregiving roles. These concerns were most often expressed in terms of its effect on their physical or mental health. Studies have also noted that the stress of raising grandchildren may lead to the onset of depression (Whitley et al., 2001), and grandparents may feel anger or shame because of the lack of willingness or ability of their children to take care of the grandchild (Kolomer, 2008).

Many of the reasons that grandparents assume the caregiving role can complicate this situation and the grandparents' ability to adapt. Grandparents may never truly grieve the loss of a child due to an untimely death or incarceration because they are immediately forced into a caregiver role (Kolomer, 2008). Caregivers may also feel embarrassed or ashamed if their caregiving role is the result of their child having HIV, substance abuse addictions, or incarceration (Kolomer, 2008). Grandparents may experience isolation from their peers because caring for the grandchildren often means they must put their own lives on hold (Cox, 2008; Williams, 2011).

Leder and colleagues (2007) examined 42 grandparents and found that increased caregiving stress was correlated with declines in the grandparents' physical and mental health. In order to cope with the stress of caregiving, grandparents may engage in risky behaviors such as smoking and alcohol use (Kolomer, 2008; Longoria, 2010), which may further exacerbate their physical and mental health problems. Longoria (2010) examined the prevalence of alcohol and drug use in a sample of 465 grandparents from Wave I of the National Survey of Child and Adolescent Well-Being . In general, the findings suggested that alcohol use was not significantly related to wellbeing, and that grandparents' wellbeing did not differ significantly based on whether they reported using drugs. However, grandparents with recent episodes of alcohol and

drug *misuse* had significantly lower levels of emotional wellbeing. Grandparents who used *both* alcohol and drugs also had significantly lower levels of emotional wellbeing. Although grandparents may use alcohol or drugs as a means to cope with their situation, these findings suggest that this may be further jeopardizing their health if the substances are misused.

Lack of physical activity. Research has identified the benefits of physical activity including reduced risk of cardiovascular disease, stroke, hypertension, type 2 diabetes, osteoporosis, cancers, anxiety, and depression (Nelson et al., 2007). However, older adults and youth are two generations who typically do not engage in adequate amounts of physical activity. Only a few studies have examined the physical activity levels of grandparents raising grandchildren. Taylor, Washington, Artinian, and Lichtenburg (2008) examined the physical health outcomes among Black grandparents engaged in kinship care and parents. They found that grandparents and parents spent an average of 158 minutes per week participating in physical activity. The researchers did not examine physical activity by age. The average noted above included younger parents who may be more active; thus, the actual average amount of time older adults spent in physical activity may be less. Whitley, Kelley, and Sipe (2001) examined 100 grandparents who were raising grandchildren to determine their risk for health problems. The researchers reported that 45% of the grandparents exercised less than once a week, leading to levels of involvement much lower than the recommended 150 minutes of moderate-intensity physical activity a week for this age group.

There are several potential reasons for low levels of involvement in physical activity among grandparents raising grandchildren. Existing chronic health issues may lead to inadequate levels of physical activity (U.S. Department of Human Health Services, 2009) and given the prevalence of health concerns facing grandparents in this role, this may be one barrier to

participation. However, researchers have also suggested that many grandparents consider the health of their grandchild more important than their own. Thus, grandparents may be less likely to engage in health promoting activities such as physical exercise (Hughes et al., 2007) due to an insufficient amount of time as a result of prioritizing their grandchildren's needs over their own. Lastly, the time involved in parenting a child often precludes many adults, regardless of age, from engaging in physical activity.

The implementation of intergenerational physical activity programs with this population is appealing due to the prevailing health issues among grandparents and grandchildren and the multitude of benefits associated with physical activity. While there is a growing trend for intergenerational programs in community-based programming (Nichols, 2003), there is a paucity of intergenerational research on physical activity programs targeting grandparents and grandchildren. This is a promising area of research because studies have determined that adults' modeling of physical activity increases physical activity involvement in children (Madsen et al., 2009). Thus, grandparents' participation in these activities may affect their grandchildren's engagement in physical activity, while simultaneously providing important health benefits to them as well.

Conceptual Frameworks

Intergenerational approach. Programs that implement intergenerational approaches aim to engage both young and older individuals in purposeful and mutually beneficial interaction. Researchers implementing community-based programs are increasingly incorporating intergenerational approaches into their programs. One challenge to this is that intergenerational theory is still in its infancy (VanderVen, 2011); hence, researchers do not fully understand the interplay of the various mechanisms involved in the interaction and how they relate to outcomes.

When using an intergenerational approach, many researchers often borrow from well-established life span theories like Erikson's Psychosocial Theory (more specifically, the phase of generativity) (Newman & Smith, 1997; VanderVen, 1999, 2004). However Baltes' Selective Optimization with Compensation (SOC) and the Social Cognitive Theory (SCT) are also relevant theories that can inform intergenerational theory. While the aforementioned theories are very different, they all are embedded with elements that may inform intergenerational programs. The proceeding paragraphs will include a brief overview of generativity, SOC, and SCT and explain how each of these theories may aid in elucidating the underlying mechanisms of intergenerational approaches.

Generativity is one of the most commonly used concepts when researchers are attempting to understand the underlying mechanisms involved in intergenerational contact. Generativity itself is not a theory; it is a part of the seventh stage of Erik Erikson's Psychosocial Theory (Erikson, 1950). He proposed that during middle adulthood, individuals deal with the conflict of generativity versus stagnation. Successful resolution of this stage results in adults gaining a sense that they have produced something meaningful and lasting beyond his or her lifetime. Later, Erikson himself realized that generativity may not end at the seventh stage and that it may extend beyond middle adulthood. Therefore, he coined the concept *grand generativity*, which was used to explain the continuing generative behaviors exhibited by many older individuals (Erikson, Erikson, & Kivnick, 1986).

The notion of generativity in later life has been explored in the intergenerational literature. Research has identified that older adults' perceptions of generativity were increased as a result of contributing to the growth and development of the children (Holmes, 2009). Similarly, Herrman, Sipsas-Herrmann, Stafford, and Herrmann (2005) reported that older adults who served as mentors in a youth violence/ anger reduction or career development program displayed

higher levels generativity at post-test in comparison to the control group. Underwood and Dorfman (2006) evaluated a rural intergenerational oral history and recreational activity service-learning project with university students and found an increase in generativity; such that they felt their life experiences contributed to the students' learning.

In addition to examining the presence of generativity in the lives of older adults, researchers have also used generativity as a cornerstone of their research as a means to examine intergenerational study outcomes. A case example is Experience Corps (EC). Older adults demonstrate generativity by volunteering in Experience Corp, a school-based tutoring program designed to promote the academic achievement of youth and the health of older adults. Generativity is cited as being one of the mechanisms that has contributed to improvements in the older volunteers' strength, energy (Barron et al., 2009; Glass et al., 2004), and cognitive functioning (Carlson et al., 2009). Actions reflecting generativity, such as older adults sharing knowledge and engaging with others to create a legacy, may be a contributing force behind the efforts and health outcomes related to intergenerational programs.

SOC may help to explain how generativity materializes and thereby has implications for intergenerational programs as well. Developed by Paul Baltes, SOC is a model that addresses how older adults adapt to age-related gains and losses through the management of behavioral, psychological, and physical forces (Baltes & Baltes, 1990). The management includes goal setting, capitalizing on strengths, and adjusting to circumstances and abilities (Baltes & Baltes, 1990). SOC may be important for understanding the mechanisms of intergenerational programs because older adults, who are experiencing physical decline, may take their intact social and intellectual capacities and invest in youth through knowledge sharing. Through these actions, older adults have become generative because of their need to conserve energy/resources and

share optimized well-preserved abilities. Hence, the process and result of selecting, optimizing, and compensating for abilities may be the impetus for generative actions and be related to positive outcomes for older adults and youth participating in intergenerational programs.

SCT may also provide insight into intergenerational interactions. SCT suggests that human behaviors result from the interplay of personal, behavioral and environmental influences (McAlister, Perry, & Parcel, 2008). SCT concepts include reciprocal determination (dynamic influence of the environment on the individual and vice versus), outcome expectations (the probability of and value of a consequence relative to a behavioral choice), self-efficacy (the belief in one's ability to perform and produce a desired result), collective efficacy (the belief about the ability of a group to bring about change), observational learning (learning new behaviors by watching media or peer modeling), incentive motivation (involving the use of rewards and punishment to change behavior), facilitation (making change to the environment or supplying the tools and resources to promote effortless behavior change), self-regulation (controlling one's behaviors through self-monitoring, goal setting, feedback, and social support), and moral disengagement (disengaging in self-regulating and moral thoughts to make harmful behaviors and consequences acceptable) (McAlister et al., 2008).

The SCT concepts exhibit how behavior change is facilitated by various mechanisms. In the case of intergenerational interaction, certain aspects of the theory may be more relevant than others. For example, observational learning may be the mechanism through which children observe older adults' behaviors during the interaction and then attempt to model similar behaviors, such as increasing levels of physical activity. For older adults, it may be that facilitation and self-regulation are driving older adults' interaction with the children, such that using tools, activities, goal setting, and social support as a way to influence the children.

Collective efficacy of older adults and children may be a guiding force in intergenerational programs that focus on community related issues such as crime or pollution. The synergy gained from a common goal may be the impetus for the intergenerational interaction. There is lack of literature examining SCT in the intergenerational literature. However, CATCH Health Habits, an intergenerational program aimed to increase vegetable consumption and physical activity among youth and older adults, used social cognitive theory as a means to explain how health behavior changes might occur. The study did not address how intergenerational interaction may be involved in this process. However, because the older adults were the facilitators of the program and we understand the benefits of generativity, it is reasonable to hypothesize that SCT may be involved in intergenerational interaction.

Since the origination of intergenerational programs, researchers and practitioners have depended on the "feel good" and "common sense" nature of these interactions to guide program theory and development (VanderVen, 1999) . Over the years, researchers like VanderVen (1999) have encouraged us to go beyond the "common sense", "feels good" nature of intergenerational programming and begin to think more intently about theory. Borrowing from generativity, SOC, and aspects of SCT may be the first step in meeting VanderVen's challenge. These theories can provide a fertile foundation for intergenerational theory to flourish.

Intergenerational outcomes. Although researchers are unsure of intergenerational program's underlying mechanisms, intergenerational approaches are viable because the potential of positive benefits for multiple generations. These benefits can be seen in exemplar programs like the tutoring program offered through Experience Corp (Rebok et al., 2011) and health promotion programs such as CATCH Health Habits (Teufel, Holtgrave, Dinman, & Werner, 2012) and Active Generations (Werner et al., 2012). Furthermore, the American Heart

Association Subcommittee on Physical Activity, the Council on Cardiovascular Disease in the Young, and the Interdisciplinary Working Group of Quality of Care (2006) recommend using intergenerational approaches to physical activity as an avenue to address health issues in families and communities. The support for intergenerational programs across academia and health organizations indicates their potential viability as a mechanism for improving the health of individuals.

In a review of community programs serving grandparents, Roe (2000) stated programs employing an intergenerational approach were successful because they rallied the resources, strengths, and ideas of the caregivers and the community to meet the needs of kinship families. Furthermore, programs that served grandparents and grandchildren using an intergenerational approach have been shown to be successful in persuading grandparents and grandchildren to exercise together (Duquin, McCrea, Fetterman, & Nash, 2004; Hrostowski & Forster, 2010) and to make healthy food choices (M. Kaplan, Alloway, & Middlemiss, 2009). However, the literature examining the development and implementation processes of these health programs is limited.

To the researcher's knowledge, only two intergenerational kinship studies reported in the literature have included physical activity. Duquin, McCrea, Fetterman, and Nash (2004) implemented a faith-based wellness intergenerational program targeting grandparents (n=12) and grandchildren (n=29) who participated in exercise and dance over a 12-week period. Results of the grandparents' pre and post assessments indicated reduced stress and increased spiritual wellness. This study did not report the children's outcomes. The researchers used a novel approach for addressing health issues because they engaged the grandparents and grandchildren together in culturally competent health promoting activities; however, there were some

limitations in this study. First, the study suffered from inconsistent participation; although forty-one participants attended at least one session, only five participants completed pre and post quantitative assessments. In addition, the measures used to assess the outcomes of the physical activity component were not identified. Lastly, the processes and factors that facilitated the outcomes of the intergenerational interaction were not discussed.

The other kinship intervention focused on improving the health of grandparents and grandchildren through physical activity was the Grandfamilies Health Watchers Program (Hrostowski & Forster, 2010). The intervention aimed to enhance the older adults' health through case management services, nutrition and exercise classes. The grandchildren received separate health education and exercise classes. Engagement of intergenerational physical activity at home was encouraged by a social worker who also supplied the families with pedometers and subjectively gauged how much physical activity they engaged in together. This program lasted for approximately nine months, and various biophysical and self-report measures of health were taken throughout the intervention period. No results were reported for the grandchildren; however, results indicated there was a reduction in cardiac risk indicators for the grandparents (n=18). The grandparents also increased their aerobic exercise by 122.8%. At the post-test, the participants scored significantly higher on the functionality test (i.e., arm curl, back scratches, chair sit and reach, six-minute walk, and eight-foot "up-and-go") than they did at baseline.

The program was also found to be successful at getting grandparents and grandchildren to exercise together. Although the program educated its participants about physical activity and health, one of the strengths of the program was that it actually provided facilitators to ensure individuals engaged in physical activity (e.g., YMCA membership). The program also tackled potential barriers to participation and maintenance of physical activity in these populations, such

as transportation. They also provided the individuals with a physician and physical therapy visits. This intensive involvement and mitigation of various barriers may be one reason why the researchers where successful in improving many health indicators in these grandparents.

There were some limitations to this study that should be noted. Similar to the previously mentioned study, the program sample size was small (*n*=18) and the researchers used convenience sampling. They did not detail how the increase in the intergenerational activity was determined, and the intergenerational activity between the grandparent and grandchild was not formalized and organized by a facilitator. Instead, the intergenerational activity was only encouraged by a social worker during his/her interactions with the families. In addition, the processes involved in the intergenerational engagement were not a focus of this project. Thus, it is difficult to discern what dynamics of the intergenerational engagement increased the grandparents' and grandchildren's physical activity.

Researchers and health organizations alike have endorsed intergenerational programs as a future direction for health programming. The aforementioned research studies illustrate the possibilities available through intergenerational approaches. Thus, more refined research explicitly examining the effectiveness of these programs on grandparents' and grandchildren's health is important. However, it is also necessary that we explore the processes involved in developing and implementing these types of programs as a means to understand the feasibility of such programs in the future.

Community Based Participatory Research (CBPR). CBPR may be a viable framework for understanding the processes involved in intergenerational programs and their associated health outcomes. CBPR is a strategy that is increasingly meeting the needs of government health agencies, universities, and communities that aim to conquer public health issues through

partnerships and community involvement. CBPR is characterized by a collaborative approach to research utilizing all potential users of the research and other stakeholders in the community to bring forth the issues that define the needs and focus of the study. In addition, these individuals are involved in the development and process of the research and establishment of equitable partnerships (Green & Mercer, 2001; Minkler & Wallerstein, 2008). According to Israel et al., (2005), CBPR is not a specific research method design, but rather a collective approach that may draw upon many different research designs. The science and research involved in the CBPR approach ranges from complex clinical trials to basic community level studies. Data collection and analysis can consist of quantitative, qualitative, or mixed methods. Thus, CBPR is a comprehensive but flexible approach, which can help to enhance our understanding of dynamic and multifaceted intergenerational programs.

There are nine principles that should serve as guidelines when considering use of the CBPR approach (see Table 1) (Israel et al., 2005). Minkler and Wallerstein (2008) further added to the principles by suggesting that the CBPR approach should address social justice issues, incorporate cultural humility, and work to guarantee research rigor and validity, while expanding the notion of what is considered to be valid work in communities.

Table 1

Community-Based Participatory Research Principles

Nine Principles
1. Acknowledge the community and its identity
2. Build on the strengths and resources within the community
3. Create a collaborative environment with an equitable partnership that is empowering and includes social justice
4. Include co-learning and aids in building capacity among community partners

5. Contribute to scientific knowledge while simultaneously addressing the needs of the community

6. Address health concerns related to the community and also consider multiple determinates of health using an ecological framework

7. Engage the community/stakeholders in the phases of the research (e.g. assessment, design, implementation, dissemination, etc.)

8. Share results with all partners and include them in the dissemination of the results to the community at large

9. Remain committed to the research project and maintenance of relationships over time

Note. Adapted from Minkler, M., & Wallerstein, N. (Eds.). (2008). *Community-based participatory research for health: From process to outcomes* (2 ed.). San Francisco, CA: Jossey-Bass.

Researchers also suggest the CBRP principles should serve as key criteria in assessing the effectiveness of a research project (Shalowitz, 2009). Community stakeholders and researchers may not use all of these principles, but instead may choose the principles that are indicative of their shared vision and that will direct their decision-making in their programs. It is important to note that these principles by themselves do not determine the research design or method of the project. However, CBPR principles can be used as a supplement to guide the intergenerational approach and help to understand the mechanisms that might facilitate change.

To the researcher's knowledge, the study conducted by Duquin, McCrea, Fetterman and Nash (2004) is the only published intergenerational physical activity program for grandchildren and grandparents that was guided by CBPR principles. Prior to the start of the program, the researchers held focus groups with the grandparents to determine their needs. Based on the suggestions from the grandparents, the researchers designed an intergenerational wellness program that included components of physical health, spiritual health, and overall wellbeing. At the conclusion of the program, the grandparents were consulted again, this time focusing on how

to restructure the program to promote consistent attendance and overall wellbeing outcomes. The collaborative nature of the program was intended to secure the participants' interest and encourage the future sustainability of the program. Through the application of the CBPR principles, these researchers were also able to identify the various processes of the program (e.g., attendance) and the mechanisms (e.g., strategies to cope with stress, learning active listening skills, and role play) that facilitated the success of the program in achieving the targeted outcomes.

Studies that solely focused on grandparents' health outcomes, and were not based on intergenerational programs, have also been successful when employing aspects of the principles of CBPR. An example is illustrated in the Larimer County Alliance for Grandfamilies. In this community intervention, the grandparents defined the issues that they faced regarding their financial, legal, health and wellbeing needs. Once these issues were identified, partnerships were created and individuals were divided into work teams consisting of service providers in the community, grandparents, and university faculty and students. The partnerships and work teams engaged in strategic planning and then implemented action plans to coordinate and deliver services to grandparents. Furthermore, the work teams disseminated reports and feedback to various stakeholders in the project (Fruhauf, Bundy-Fazioli, & Miller, 2012). All of these actions ensured equity of power, built trust among stakeholders, and encouraged sustainability of the program.

In a caregiver study conducted by Minkler, Roe, and Price (1992), the researchers formed an advisory group of grandparents that contributed to the research process by revising the interview questions for the study to make them more culturally relevant. The researchers also provided the grandparents with opportunities to learn about media advocacy and fundraising. In

addition, the research team was racially diverse and consisted of individuals who helped navigate the ethical and practical mores of working in the community (Roe, Minkler, & Fludd Saunders, 1995). The action employed by Minkler et al., (1992) illustrated how facilitating CBPR allows researchers to eliminate the use of oppressive language and include diverse stakeholders in the research process while simultaneously building the participants' skills. Even though these studies used the principles of CBPR in different ways, the ultimate intention of all of them was to meet the projected goals of their programs. However, by implementing these principles, the researchers were also able to learn about the various processes involved in developing and implementing the programs.

While the use of CBPR in research studies is growing, this approach is not without its challenges. One of the most intriguing challenges related to CBPR is defining community and who it includes (Atienza & King, 2002; Minkler & Wallerstein, 2008). Defining the community (i.e., who is the community, who represents the community, who influences the community, who are community partners, how are they involved, who is not part of the community, etc.) directly affects the CBPR principles that are chosen and implemented. An additional challenge of the CBPR approach posed by researchers is that there are currently no standards for assessing the quality of the research, reporting requirements in the literature, and the effectiveness of the intervention. Thus comparing studies, which is one of the ultimate forms of understanding an approach and determining its reliability across different research projects or interventions, is difficult (Faridi, Grunbaum, Gray, Frank, & Simoes, 2007).

The CBPR approach also contains some methodological limitations. Atiena and King (2002) suggested the methodological issues facing CBPR interventions include randomization, statistical power, cohort versus cross sectional assessments, historical effects, outcome

measurement, and conceptualization of the methodological design. While CBPR does have its challenges, it is an approach that will only become stronger as more research is implemented to understand and overcome these issues.

Because of its thorough and flexible nature, CBPR is an appropriate approach to better understanding the complex and dynamic process and outcomes of intergenerational programs. Using the principles of CBPR in intergenerational program development may increase the likelihood that the interventions will have a positive effect on the grandparents and grandchildren. This can be accomplished by solidifying their position as stakeholders and collaborating with them to develop a program that they find interesting and that meets their needs. In addition, these principles can help researchers and practitioners understand the processes that occur during intergenerational programs by allowing them to utilize and collaborate with stakeholders throughout the research process. The ability to use mixed methods in CBPR also makes it a practical approach for enhancing our knowledge about intergenerational programs. This allows the researcher to obtain an in-depth view of the feasibility, processes, and outcomes of the program through both qualitative and quantitative methods. Thus, the benefits of using CBPR in researching intergenerational programs outweigh the challenges. Duquin, McCrea, Fetterman and Nash (2004) have illustrated the benefits and the wealth of information that can be gained from applying this approach. Given that literature focused on understanding the processes and feasibility of intergenerational programs is in its infancy, the practical guidance that the principles of CBPR can provide is valuable.

Evaluative Frameworks

Process Evaluation. Process evaluation can be used to monitor and document the implementation of an intervention. The information gleaned from the evaluation helps

researchers to better understand the relationship between the intervention and its components and outcomes. Over the past few years, there has been a growing emphasis on using outcome evaluations to determine if health promotion programs are effective (Saunders, Evans, & Joshi, 2005). The increase in outcome research has simultaneously increased the use of process evaluations in public health interventions (Steckler & Linnan, 2002). Process evaluations are becoming more popular due to the complexity of interventions. Interventions are being implemented across multiple contexts and are incorporating theoretical, social, and behavior components. Therefore, it is necessary to have a tool that allows the researchers to disentangle all of the different aspects of the program, specifically how they are implemented and contribute to the outcomes of the study. Process evaluation provides a detailed assessment of an intervention by addressing how components such as the context, program design, implementation, and/or recruitment contribute to the success or failure of an intervention. Although process evaluation is typically used in a summative capacity, it can also be used for formative purposes as well; it can provide integral information through monitoring that can be used to adjust the implementation of the program (Saunders et al., 2005). A process evaluation provides rich and detailed data through its use of quantitative and qualitative methods and variety of data collection approaches (e.g. surveys, observations, checklists, focus groups, document review, etc.).

Intergenerational programming is currently in a state of self-discovery. Therefore, employing a process evaluation would contribute to the literature by providing information about the interworkings of the program and the relationships of the different components to the expected outcomes. As previously mentioned, there is a paucity of research on intergenerational physical activity programs. This dearth of knowledge is even greater regarding the processes utilized to implement these programs. However, the intergenerational literature is not completely

devoid of process evaluation. A study showcasing CATCH Healthy Habits reported that the program was the result of a process evaluation from a similar intergenerational program, Active Generations (Teufel et al., 2012). CATCH Healthy Habits is an intergenerational health promotion program that encourages physical activity and healthy nutrition of older adults and children. In this program, the children are the receivers of the information and activities and the older adults facilitate the program delivery or serve as support staff. While not disclosing in-depth details, Teufel, Holtgrave, and Dinman (2012), noted that their process evaluation included pre-post participant surveys and interviews of the program coordinators to obtain a deeper understanding of the program planning and implementation. The information gleaned from this data collection helped to identify weaknesses and strengths of the program, and this provided insight for the development of the CATCH Health Habits program. Teufel et al., (2012) illustrates the benefits of process evaluations. However, a more detailed discourse elucidating their planning and implementation measures as well as specific feedback would benefit the intergenerational field by illustrating the rich information that can be gained from a process evaluation.

Because intergenerational physical activity programs are dynamic and are in their infancy, traditional evaluation methods alone are not sufficient to fully understand how these programs are implemented and how they affect potential outcomes. To this end, the goal of this study is to explore components of process evaluation in an intergenerational physical activity program for grandparents and grandchildren. The process evaluation framework developed by Steckler and Linnan (2002) and refined by Saunders, Evans, Joshi, Praphul (2005), respectively will be used. This framework is comprised of six components: recruitment, dose delivered, dose received, fidelity, context, and reach. Table 2 provides a description of these components. The

present study will explore only five components of the framework (i.e., recruitment, dose delivered, dose received, fidelity, and context) because these components are most relevant for this study.

Table 2

Process Evaluation Components and Definitions

Components	Definitions
Recruitment	Addresses the planned and actual recruitment techniques that were used to attract individuals; the barriers to recruiting and maintaining participation; and the methods used to encourage continual participation. Typically, a function of the organization, community, and/or research team.
Dose delivered	Addresses if the intended program components were provided to the participants (content, materials, etc.) as illustrated by the endeavors of the intervention providers.
Dose received	Addresses if the methods, strategies, and activities of the intervention were used and to what extent the participants were engaged. This is a function of the participants.
Fidelity	Addresses if the intervention is implemented as planned. It represents the quality and integrity of the intervention as addressed by the intervention providers.
Context	Addresses the community, organization, and social/political context that could potentially affect the intervention implementation or outcomes.
Reach	Addresses the proportion of the target audience that was part of the program. Reach is a function of the participants.

Note. Adapted from Steckler, A., & Linnan, L. (2002). *Process evaluation for public health interventions and research*. San Francisco, CA: Jossey-Bass. ; Saunders, R. P., Evans, M. H., & Joshi, P. (2005). Developing a process-evaluation plan for assessing health promotion program Implementation: A how-to guide. *Health Promotion Practice, 6*(2), 134-147.

Feasibility. A feasibility study is used to determine an intervention's readiness for further testing and its sustainability (Bowen et al., 2009). Feasibility studies play a critical role in public health translational research to determine if, and how well, studies conducted in controlled environments can be translated to unpredictable community settings. However, gaining an understanding of whether an intervention is ready for widespread dissemination is not the only condition in which a feasibility study can be used. It can also be utilized to increase the general

knowledge of or determine necessary improvements to an intervention. Feasibility studies can be implemented in a variety of ways (e.g., formative, efficacy, and dissemination).

There is a lack of literature exploring the feasibility of intergenerational programs. Feasibility studies have the potential to uncover various facets of program implementation and predict sustainability. A study conducted by Perry and Weatherby (2011) illustrated the benefits of ascertaining the feasibility of an intergenerational program. To increase youth and older adults' physical activity, Perry and colleagues used a CBPR approach to implement an intergenerational tai chi program for community youth and older adults. In addition to assessing outcomes, the researchers examined the feasibility of the program. The specific components of feasibility addressed were practicality, acceptability, and satisfaction. In regards to practicality, the researchers noted that the youth and older adults attended the class 50% of the time. They also noted that the youths' lack of attendance was due to transportation issues. Also, the program facilitators noticed that 60 minutes of physical activity was problematic because many of the youth became disinterested in the program towards the end of the sessions. Acceptability was assessed through the participants' enjoyment of the class. Although the youth reported that they enjoyed the class, many noted that the class moved at too slow of a pace. The perceived benefits of the intervention were used to explore aspects of satisfaction. The older adults and youth reported feeling stronger after the program. Some older adults indicated that they were more comfortable with physical activity and were more likely to become more physically active because of the intervention. The older adults noted their engagement with the youth did not occur immediately and took some time. The information captured about the participants' satisfaction level and the nuances of class implementation, such as duration of the program and intergenerational interactions, illustrates the dynamic level of data that can be obtained from a

feasibility study. This information can inform the decision-making process regarding the program in the future.

The goal of this study is also to understand the feasibility of an intergenerational physical activity program. However, this study is concerned with feasibility in the kinship context. This type of study is novel; therefore, it is important to assess its feasibility. Particularly, the barriers (e.g., poor health, lack of time, and transportation) associated with engaging in physical activity for the kinship population that might present themselves during the intervention need to be understood. To assess feasibility, this study is using the framework presented by Bowen et al., (2009). They asserted that there are eight areas of feasibility that can be addressed: acceptability, demand, implementation, practicality, adaptation, integration, expansion, and limited efficacy testing (see Table 3 for details). Depending on the needs of the study, the authors noted that some components might not be relevant. In addition, the authors explained that some researchers may decide to use other facets of feasibility such as follow-up rates, response rates, and program compliance (Arain, Campbell, Cooper, & Lancaster, 2010; Whitehead, Sully, & Campbell, 2014). For this study, the feasibility of the intergenerational physical activity program for grandparents and grandchildren will be assessed by examining demand, acceptability, practicality, integration, and limited efficacy.

Table 3

Feasibility Study Components and Definitions

Components	Definitions
Demand	Addresses the extent the program is likely to be used and the degree of expressed interest in the program.
Acceptability	Addresses the extent the program is judged as suitable, satisfying, or attractive.
Practicality	To what extent can the program be carried out with the intended participants using existing resources, means, and circumstances, w/o outside intervention?
Integration	To what extent can the program be integrated within an existing system and sustained?
Limited-efficacy testing	Assessing a program's outcomes, but in the limited capacity that feasibility studies allow (i.e., using convenience sampling, measuring intermediate outcomes, having shorter follow-up intervals, etc.).
Implementation	To what extend can a new idea, program, process, or measure be successfully delivered to intended participants in some defined, but not fully controlled, context?
Adaptation	Addresses the adjustments that are made to fit the program's new context.
Expansion	Assesses the potential success of adopting a proven successful program with a different population or different environment.

Note. Adapted from Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., et al., (2009). How we design feasibility studies. *American Journal of Preventive Medicine, 36*(5), 452-457.

Purpose of Study

Research has illustrated that grandparents and the grandchildren they raise are at risk for poor health outcomes. A physical activity intergenerational intervention where the grandparents and grandchildren engage in physical activity together is one potential approach to this issue. However, our understanding of these types of programs in the context of kinship caregiving has been hampered by the lack of literature exploring their implementation, outcomes, and feasibility. Hence, the goal of this dissertation was to explore the impact of an intergenerational

physical activity program on grandparents' health outcomes and to better understand the development and implementation processes of the program using CBPR as a guiding framework. More specifically, the aims of the study were to explore components of process evaluation and the feasibility of the intervention involving grandparents and the grandchildren they raise. Addressing these aims will help researchers and practitioners gain a better understanding of intergenerational programs through the lens of the participants. This knowledge should increase the likelihood that these programs are effective and sustainable in the future.

CHAPTER THREE:

METHOD

Participants

Intervention sampling. This study used convenience, purposive, and snowball sampling strategies. Grandparents raising grandchildren may be less likely to participate in a study because of time and caregiving constraints; thus a convenience sample made it possible to find potential participants from this hard to reach population. However, the sampling for this study was also purposive because there were specific criteria (i.e., being a grandparent raising a grandchild and being cognitively and physically fit) that were required for study participation. To further increase the chances of attaining a sufficient sample size, snowball sampling (i.e., asking recruited participants to recommend additional grandparents who might be interested in joining the study) was employed as well. A sample of 12 grandparents (ages 50-73) and 23 grandchildren (ages 5-17) were recruited for this study.

Inclusion criteria. Once the grandparents indicated an interest in the study, the researcher determined their eligibility for participation. Grandparents were required to self-identify as having the responsibility of raising their grandchildren. Grandparents had to be age 45 or older and have a score of ≤ 2 errors on the Short Portable Mental Status Questionnaire (SPMSQ) (Pfeiffer, 1975) to ensure validity of the self-reported responses. Physical activity readiness was established using the Physical Activity Readiness Questionnaire (PAR-Q). Grandparents that were assessed as "at risk for injury" on the PAQ (n=2) were required to provide documentation from a physician consenting to their participation in the study.

The eligibility age for the grandchildren to participate was 5 years or older. This requirement was set to ensure that they were developmentally capable of paying attention and following directions given by the physical activity instructor. The grandparents also had to indicate whether their grandchild was physically capable of participating in the physical activity intervention by completing the Physical Activity Readiness Questionnaire (PAR-Q) (Thomas, Reading, & Shephard, 1992; USA Gymnastic Inc, 2013) for the grandchild. All of the children were reported as being physically capable of participating in the program. The grandchildren were asked to participate in the physical activity along with the grandparents; however, aside from age and gender no information was collected on them.

The exercise instructors, recreation manager and staff, and health professionals were eligible to participate if they helped to facilitate any phase of the research study. The physical activity instructors who facilitated the exercise intervention and the community health professionals who assessed the health indicators pre intervention, at the midway point, and post intervention were recruited to participate in focus groups in the third phase of the study. The recreation manager, the individual responsible for coordinating the logistics of the intervention at the center, and the recreation staff member who was responsible for the room set-up for the intervention were recruited to participant in separate one on one interviews. In addition to taking part in a focus group or interview to understand their experience while helping to facilitate the intervention, these professionals also completed a demographic survey.

Study Design

CBPR approach. Due to its comprehensive and flexible nature and its ability to incorporate mixed methods research, CBRP was chosen as the approach for this research study. The researcher was guided by many of the principles of CBPR when engaging with and

assessing the community. This provided the researcher with a better understanding of the feasibility and process of an intergenerational physical activity program for grandparents and grandchildren. For this study, seven CBPR principles (i.e., acknowledge the community, build on community strengths and resources, create equitable partnership, co-learning, address health concerns, engage community members in phases on the research, remain committed to the relationship over time) were used to facilitate the development, implementation, and follow-up of the intergenerational physical activity intervention.

Mixed methods. Mixed methods research involves the collection, analysis, and combining of quantitative and qualitative data (Creswell & Plano Clark, 2007). Mixed methods were chosen for this study because both quantitative and qualitative methods were needed to comprehensively assess the research aims. Understanding the feasibility of initiating an intergenerational program, as well as the processes that occurred during the program, lent itself to qualitative assessment. However, the pretest, midpoint, and posttest health outcomes experienced by the participants was best measured by quantitative assessment.

Multiphase design. A multiphase mixed methods design was used in this study. A multiphase design goes beyond the typical simple mixed method design because it examines an issue over the course of interconnected phases that build upon one another to provide a comprehensive assessment of the goal(s) of the study. Creswell (2011) suggested that this design is particularly useful in the context of evaluation because the multiple phases allow researchers to succinctly build a program of study through needs assessment, program development, and program evaluation testing. Hence, a multiphase design was chosen for this study because its aims are addressed over the course of three phases. This design also complements the evaluative and developmental aspects of the overall study.

In this study, the multiphase design incorporated qualitative and quantitative approaches across three phases (development, intervention, and follow-up) to address the process and feasibility of an intergenerational physical activity program. In regards to priority, this study emphasized a qualitative approach across all three phases; thus, qualitative data played a significant role in addressing aspects of feasibility and process while quantitative methods played a secondary role in this research. Furthermore, the study employed concurrent timing (i.e., both quantitative and qualitative methods were employed together during a single phase) across all three phases. The quantitative and qualitative methods were mixed during data collection and interpretation.

Procedure

CBPR process. The CBPR approach had an integral role when developing and implementing the physical activity program. Over the course of three years, the researcher employed various CBPR principles in order to build partnerships with stakeholders and best serve the needs of the community. In April 2011, the researcher met with the recreation manager, whose goal was to develop aging programs in a city located in the southeastern United States. The researcher and manager identified a common interest in implementing an intergenerational community-based research project. The manager specifically suggested a small, predominantly Black community within the city that would be suitable for the collaboration. This was supported by a needs assessment completed in 2008 that cited a lack of programs for older adults as a major issue in the community. The recreation manager referred the researcher to various community stakeholders, gatekeepers, and a community committee to ascertain the issue the community wanted to address through this project. Through collaboration with these stakeholders and

gatekeepers, it was established that a financial literacy or physical activity program should be developed.

A community *Strengths, Weaknesses, Opportunities, and Threats Analysis* conducted by the city during the 2008 needs assessment listed kinship caregiving as a phenomenon that was both a weakness and an opportunity. Therefore, it was decided that the program would target the kinship population. In November 2011, the researcher met with the Community Leadership Committee and learned that they preferred the implementation of a physical activity program because many organizations within the community were already targeting financial literacy. They felt that health issues in the community needed to be addressed, and they particularly expressed their satisfaction with the intergenerational component of the study. Over the next two years, the researcher developed the framework for the study and fulfilled the university requirements (e.g., human subject's approval) to proceed with the research study. During this time, the researcher remained committed to the community. The researcher attended community events, volunteered expertise on program development, and maintained contact with stakeholders and gatekeepers to keep them updated and gathered information for the development of the research study. Once a framework was developed and the research project was reviewed and approved by the university IRB # 0001353 (see Appendix F), the researcher contacted the stakeholders and gatekeepers again to begin the process of recruiting potential participants. Key personnel and city stakeholders were asked to help facilitate the intervention (e.g., recreation center staff, exercise instructors, and health professionals). In addition, the recreational center located in the center of the community was chosen as the venue for the physical activity program.

Once the grandparents were recruited for the study, they also became a part of the CBPR process. These adults decided the type of intergenerational physical activity they wanted to participate in as well as the program logistics (i.e., time and day) to better ensure the success of the program. Once the program was implemented, the grandparents continued to be involved as stakeholders; they were routinely assessed for program satisfaction and asked to identify areas for improvement. In addition, the health professionals and recreation staff and manager were a part of the CBPR process as their input was requested throughout the duration of the program. Using the principles of CBPR, the researcher was able to capture various perspectives and develop a comprehensive study design that provided a better understanding of the process and feasibility of the program as well as address community concerns related to the health of kinship caregivers.

Recruitment. This study focused on grandparents aged 50 and older who were the primary caregivers of grandchildren aged 5-17. Targeted recruitment took place at a kinship resource center in the city. This organization helped to recruit participants from several grandparent caregiver support groups that met each month at various locations throughout the county. During these support groups, a short 2-3 minute presentation about the study and a brochure describing the study was provided along with the researcher's contact information. Participants were also recruited by word of mouth, beginning with the community service provider meetings. The researcher visited key community organizations such as recreation centers, churches, a health clinic, and a local convenience store to distribute flyers. The researcher also held private meetings with individual community stakeholders and gatekeepers to discuss possible recruitment sites. A total of 39 sites were visited and 12 grandparents were recruited for the study.

The Short Portable Mental Status Questionnaire (SPMSQ) and Physical Activity Readiness Questionnaire (PAR-Q) were used to determine the grandparents' eligibility for the study. The grandparents also completed the PAR-Q for the grandchildren to assess their eligibility for the study. The SPMSQ and PAR-Q were administered face to face or via telephone. Details of these measures can be found in the quantitative measures section. Once the grandparents were deemed eligible to participate in the study, the researcher provided them with an informed consent and parental consent form. Prior to phase 1, the researcher reviewed the consent forms with the grandparents and provided them with the opportunity to ask questions about the study. Next, the researcher scheduled the phase 1 focus groups with the grandparents. A research assistant explained the study to the children and obtained their assent during phase 2 of the study.

The city's partners, Faith Nurses, and Zumba® exercise instructors helped to facilitate various components of the intervention. These partners, along with the recreational center staff and manager, aided in implementing the intervention and were recruited to participate in focus groups or one on one interviews during phase 3 of the study. Four weeks prior to the conclusion of the intervention, these individuals were informed that they would be asked to voluntarily participate in focus groups. At the final health assessment, they were provided informed consent forms and demographic surveys. Prior to the start of the focus groups or interviews, the researcher provided a thorough explanation of the informed consents and answered questions about the study.

Study phases. The study took place over the course of three phases: Phase 1 (development), Phase 2 (intervention), and Phase 3 (follow-up).

Phase 1 development. During the development phase, focus groups were conducted with the grandparents to determine the type of physical activity they were interested in participating in with their grandchildren. The logistics that would facilitate their participation were also addressed in this session. During the months of February and March of 2014, three focus groups (*N*=8) were conducted. The demographic survey that was provided during the initial meeting with the grandparents was collected during this phase. A focus group protocol (see Appendix B) was used to guide the conversation. Prior to the start of the focus groups, the grandparents were reminded of the purpose of the program. The groups began with a conversation about exercise in general. Next, the grandparents were introduced to three types of physical activities – African dance, Line Dancing, and Zumba® – and they were asked to choose which program they would prefer to participate in with their grandchildren. To aid their decision, a 30-60 second video was shown to illustrate each activity. Once they choose the activity that most appealed to them, they were asked a series of questions regarding the logistics of their participation. A $5.00 gift card was provided to each grandparent who participated in the focus group.

The grandparents were informed that the activity that received the most votes would be the activity that everyone would participant in. The grandparents voiced their votes during the focus groups. The researcher tallied the votes after the last focus group in phase 1. The activity that received the most votes from the grandparents was Zumba®. After reviewing the grandparents' surveys, the information gathered through the focus group discussions, and accounting for the Zumba® instructors' schedule, the program was scheduled on Wednesdays and Fridays at 6pm-7pm. The program was initially set to take place at one recreation center; however, scheduling and Zumba® instructor issues required the activity to be moved to another

recreation center in the community located approximately 5 miles from the original site. The grandparents did not express any concerns regarding the site change.

Zumba® is an aerobic Latin dance fitness program. An instructor leads the class in dancing that includes a combination of traditional Latin dances such as Merengue, Salsa, Cumbia, Reggaeton, Belly Dance, Flamenco, Tango, and Samba. Zumba® class includes lively music that encourages people to dance. Participants are informed that they should participate at the level that feels comfortable to them. Furthermore, they are encouraged to move to the rhythms, either in a form similar to the instructor or free style. The classes are designed to meet the needs of diverse individuals at various levels of fitness (Zumba® Fitness, 2013).

The lead instructor was a certified Zumba® instructor who was credentialed to instruct children and older adults. Thus, she was trained on how to effectively address the anatomical, physiological, and psychological needs of both of these populations. The instructor had been teaching Zumba® for five years and had a contract with the city's Parks and Recreation Department where she mainly instructed classes for older adults. However, she had experience conducting an intergenerational Zumba® class once a month at a local library. She was highly recommended by key stakeholders in the community. The recreation manager also hired an assistant Zumba® instructor who was a previous student of the lead instructor and had been teaching Zumba® for six months. Her role was to assist the lead instructor, but also to serve as a source of inspiration for the grandparents as she had lost over 100 pounds through dieting and Zumba® participation.

The researcher and lead Zumba® instructor met to construct an outline for the Zumba® intervention. The instructor and researcher decided to develop a simple outline for the program because a more specific outline or curriculum might constrain her creativity. The outline was a

tool that was meant to guide her creativity within the limits of the researcher's expectations for the program. The outline covered many aspects of the program including utilization of the exertion chart, an education segment on the different dances and their countries of origin, goals for intergenerational interaction, and exercises (e.g. warm-up, cool-down, stretching, toning, aerobic exertion, etc.). The information obtained from all three focus groups in phase 1 of the study was used to design the Zumba® intervention as well. For example, some of the grandparents discussed how they wanted to Line Dance, so Line Dancing songs were included in the intervention. This outline served as the template for the class sessions over the 8-week period. In addition, the outline was converted into a checklist and became part of the research observational protocol that was integral in the process evaluation (see Appendix A).

Phase 2 intervention. The grandparents and grandchildren engaged in Zumba® together for 1 hour, 2 days a week, over an 8-week period. Community health professionals collected baseline, midpoint, and post-intervention measures of health (i.e., heart rate, blood pressure, waist circumference, weight, height, and balance) at weeks 1, 4, and 8. The grandparents also completed subjective measures of physical and mental health (i.e., Center for Epidemiological Study of Depression and SF-12) at these three time points. During these assessment periods, the grandparents and grandchildren were provided healthy snacks. While the nurses assessed the grandparents, a research assistant provided games, cards, and drawing materials to the grandchildren to occupy their time. The grandparents were asked to arrive at the recreation center 30 minutes to an hour to prior to class time on assessment days in order to have these assessments taken. If a grandparent missed an assessment day, the researcher collected the health measures with the assistance of LC500, an interactive health monitoring station located at the recreation center. The machine provided weight, blood pressure, and heart rate readings. The

remaining assessments were collected manually. To limit threats to validity related to instrumentation, one of the nurses in the study compared her personal health readings from the instruments that assessed the grandparents to the readings from the health monitor. She received comparable measurements on weight, blood pressure, and heart rate. The health monitor station was used 5 times during the intervention phase. Over the course of the 8 weeks, participants were also asked to discuss their satisfaction with the program with the researcher via phone or in-person. More specifically, the participants were asked, "*Do you have any feedback regarding the program that you would like to share with me?*".

The grandparents and grandchildren engaged in classic Latin dances such as the Bachata, Cha Cha Cha, and Samba. In addition, throughout the 8 weeks the instructor included Line Dancing (e.g. Wobble and Cupid Shuffle) to appeal to the grandparents who originally expressed interest in Line Dancing during phase 1. Each session lasted for 45-60 minutes. The dance moves addressed toning, balance, flexibility, cardio, and mind and body coordination. During the sessions, the instructor provided education about the dances, detailing where they originated and information about the associated culture. The dances also included social components in which the participants interacted with one another. Each session concluded with a 5-minute warm-up and cool down. The instructor encouraged water breaks throughout the sessions, and water was provided during every exercise session.

A calendar with the date and times of the intervention sessions was distributed to the grandparents and grandchildren at the first session. In addition, the researcher made follow-up phone calls to remind the participants of the intervention sessions. The researcher also took attendance and observational field notes at every session to assess measures of the implementation process.

Ensuring the safety of the participants was an important aspect of the intervention. On the first day of class, the instructor explained the Rate Perceived Exertion Chart (RPE) to decrease the likelihood of injury among the participants. RPE consists of a 0-to-10 scale that allows adults to rate their feelings of exertion and have the participants actively gauge their own exercise intensity. For example, quietly sitting in a chair would have a rating of 0; walking at a moderate pace would be given a rating of 3. Increasing the pace to a run might register as a 10 on the scale. The suggested RPE range for most individuals is typically between 3 (moderate) and 5 (strong) (American Council on Exercise, 2001). Even though the RPE is a person's exertion rating, it has been shown to provide a fairly good approximation of one's actual heart rate while participating in physical activity (Borg, 1998). The RPE chart remained in the exercise room throughout the intervention. Furthermore, the participants were told to use the chart as a self-evaluation tool to determine how to moderate their exertion level by reducing or halting their engagement in the activity. The instructor also reminded the grandparents to be mindful of the chart and safety throughout the intervention.

Participants who completed phase 2 of the research study were provided a Recreation Family Pass. A Recreation Family Pass allows individuals to visit city fitness centers, extreme skate parks, nature parks, and pools in the city for free. They also can attend city-sponsored programs/activities for free or at reduced rates. It also made them eligible to receive priority registration for camps and programs. The passes were distributed in a graduated manner. Individuals (n=8) who attended 10 or more sessions received the 12-month pass. Individuals (n=2) who complete nine or fewer sessions received a 6-month pass. During the last session, the grandparents were provided the pass application. The majority of the grandparents returned the

applications during their phase three focus groups and redeemed their passes; others stated they would redeem their passes at a later date.

Phase 3 follow-up. The follow-up phase occurred one week after the intervention phase concluded. Similar to phase 1, the researcher conducted focus groups (*N*=2) that lasted for approximately 1 hour with the grandparents. However, the goal of the focus groups in this phase was to assess the feasibility of the program from the grandparents' perceptive. Five-dollar gift cards were provided to each grandparent who participated in this focus group. Interviews and focus groups were also conducted with the professionals and key personnel in this study. Two separate interviews, one with the recreation staff member and one with the recreation manager were conducted. In addition, two separate focus groups were conducted with the nurses (*n*=4) and exercise instructors (*n*=2). The interviews took less than 30 minutes to complete, and the focus groups lasted for approximately 45 minutes. These interviews and focus groups were conducted to assess the feasibility aspects of this program. A protocol was used to assure that similar questions were asked during both the interviews and focus groups.

Quantitative Measures

Inclusion measures. The measures described below were used to assess the participants' eligibility for inclusion in the study prior to phase 1.

Cognitive status. The SPMSQ (Pfeiffer, 1975) is a widely used screening measure that assesses cognitive impairment in older adults. This assessment may be used in person or via phone, and the participants answer a series of questions about themselves (e.g. how old are you?) and relative current events (e.g. who is the current president?). They are also asked to perform a counting task. The SPMSQ consists of 10 questions. The measure is scored from 0 – 10 with lower scores indicating better cognition. For each question that an individual answers incorrectly,

she/he received a score of 1; final scores of 2 or less indicate normal cognition (Pfeiffer, 1975). The participants had to receive a score of ≤ 2 to be included in this study.

Readiness for physical activity. In this study, the grandparents' and grandchildren's physical activity was assessed using a modified version of the Physical Activity Readiness Questionnaire (PAR-Q). The original PAR-Q is a screening questionnaire that assesses one's risk for injury before engaging in a physical activity. The screening tool consists of 7 questions that determines if an individual has experienced adverse health symptoms (e.g. chest pain or bone problems) (Thomas et al., 1992). If an individual answers yes to any of the seven questions, the respondent is recommended to defer to a physician before engaging in physical activity. The reliability and validity of this assessment has been tested in individuals between the ages of 15 and 69. Although 15 is the lower validated age limit suggested for this measure, researchers assessing physical activity injury risk have successfully used the assessment with children below the age of 15 (Colley & Tremblay, 2011; Johnson, Bryan, & Solmon, 2004; Júnior et al., 2013; Mealey, 2008). When using the measure with children, the parents or guardians of the children serve as their proxies.

For this study, a modified version of the PAR-Q was used to assess the participants' risk for injury. The parent or grandparent completed the assessment for the grandchildren. The modified version includes six additional questions that ask if the individual ever had injuries or diagnoses such as a neck injury, convulsions, or asthma (USA Gymnastic Inc, 2013). As with the original assessment, if the parent/grandparent indicated "yes" to any of the questions then they were required to provide a physician's release before they or their child could participate in the physical activity intervention. The USA Gymnastics, Inc. developed the modified version used in this study, and uses it to assess youths' injury risk. While this modified measure was developed

for youth, the additional questions are applicable to older adult populations who may be at a high risk for injury because of existing health conditions.

The children's risk for injury was assessed during the same time the grandparents' PAR-Q assessment was completed. If the results of the assessment suggested that the grandchild was at risk for an injury, s/he was not allowed to participate in the physical activity intervention, unless the grandparent/parent provided documentation from a physician citing that the grandchild could safely participate. Thus, this assessment was not being used to lower one's risk, but simply to determine who could safely participate in the physical activity intervention.

Demographic surveys. Demographics surveys were used at the beginning and conclusion of the intervention to obtain information about the grandparents. The recreation staff, recreation manager, exercise instructors, and the health professionals completed a demographic survey at the conclusion of the intervention.

Demographic data. After eligibility was confirmed, demographic, caregiving responsibilities, and general health information were collected from the grandparents. Demographic data included date of birth, race/ethnicity, gender, marital status, education (highest level completed), employment status, and income. Additional information regarding the caregiving situation, such as current living arrangements, number of grandchildren being cared for, and the length of time in the caregiving role was assessed. The grandparents were asked to indicate any existing health conditions and the number of medications they were currently taking. The grandparents were asked questions regarding their leisure activities and their relationship with their level of physical activity grandchildren. The questionnaire also asked general demographic questions about the grandchildren (i.e. gender & age).

Lastly, the grandparents received a short follow-up questionnaire after the physical activity intervention that asked questions, once again, about their level of physical activity, relationship with their grandchildren, and participation in leisure activities. The demographic data that were collected from the recreation staff member and manager, Zumba® instructor, and health professionals included gender, age, race, education level, role in the intervention, and the number of years they had been in their respective professions. They were also asked a question about program demand and their level of satisfaction with the program.

Performance and objective health measures. Community health professionals assessed the measures described below at weeks 1, 4, and 8 of the physical activity intervention (phase 2).

Objective health measures. At the start of phase 2, nurses assessed the grandparents' height (inches) and weight (pounds), which were used to calculate body mass index (BMI). The nurses also measured the participants' waist circumference (inches), blood pressure (millimeters of mercury), and heart rate (beats per minute).

Balance. The Timed Up and Go (TUG) Test (Rydwik, Bergland, Forsén, & Frändin, 2011; Shumway-Cook, Brauer, & Woollacott, 2000) was used to measure the grandparents' balance. Participants were asked to rise from a standard chair, walk 3 meters at their normal pace, then turn and return to the chair, and sit down. The health professional used a stopwatch to assess the number of seconds it took the participant to walk from the chair once told to "go" until they returned to the chair and sat down with their back touching the backrest of the chair. A shorter completion time indicates better balance. A completion time of 12 seconds or more indicates that the individual is at risk of falling. An occupational therapist assisted with the TUG at baseline. The recreation manager, who is a certified Matter of Balance instructor, assisted with the measures at mid and posttest. The TUG has been shown to be both reliable (Nordin,

Rosendahl, & Lundin-Olsson, 2006) and valid (Austin, Devine, Dick, Prince, & Bruce, 2007) (Lin et al., 2004), & (Podsiadlo & Richardson, 1991).

Wellbeing measures. At week 1, 4, and 8 of phase 2, the participants completed the self-report measures discussed below to assess wellbeing.

Quality of life. The Short Form-12 Version 2 (SF-12 v2) Health Survey (Ware, Kosinski, Turner-Bowker, & Gandek, 2002) is a condensed form of the SF-36 Health Survey. It is one of the most widely used surveys to assess overall quality of life. The questionnaire consists of a physical scale (PCS) and mental health scale (MCS). The PCS scale provides a score of the individuals' overall physical health and the MCS score provides an overall view of their mental health. The SF-12 v2 includes questions such as, "In general, would you say your health is excellent, very good, good, fair, or poor?" The measure includes 12 questions. Six questions encompass four domains of physical health: physical functioning, role-physical, bodily pain, and general health. The remaining six questions cover four domains of mental functioning: vitality, social functioning, role-emotional, and mental health. The survey also includes questions that assess issues and limitations with daily activities due to emotional or physical health problems. In this study, participants were asked to answer the questions in the time frame of the "last four weeks". Quality Metric Health Outcome Scoring Software 4.5 was used to score the surveys. The software used a norm-based scoring method such that the MCS and PCS raw scores would be transformed to have the same mean (50) and standard deviation (10) of the general U.S. population. Scale scores typically range from 20-70. In general, an individual scoring less than 45 or a group score less than 47 indicates impaired functioning or wellbeing. The SF-12v2 is a reliable and valid measure of wellbeing (Ware et al., 2010).

Depressive symptoms. Grandparent depressive symptoms were assessed using the 10 item self-reported Center for Epidemiologic Studies Depression Scale (CESD-10)(Andresen, Malmgren, Carter, & Patrick, 1994). The measure includes 10 brief questions that assess different depressive symptoms. Respondents were asked about symptoms (e.g. "I felt depressed" or "I felt hopeful about the future") by indicating the number of times they experienced each symptom over "the past week" from 0 (less than 1 day) to 3 (5-7 days). The responses were summed to produce a CESD-10 score ranging from 0 to 30. A score of 10 or higher indicates a greater severity of depressive symptoms and worse mood. The scale has been shown to be a reliable and valid measure of depressive symptoms (Andresen et al., 1994).

Physical activity measures. At week 1, the participants completed the self-report measure described below to assess their physical activity level.

Physical activity. The Rapid Assessment of Physical Activity (RAPA) (Topolski TD et al., 2006) is a brief assessment that was developed to monitor physical activity levels in adults aged 50 and older. In this study, it was used to establish individuals' physical activity levels at the start of the intervention. The RAPA consists of a total of nine questions such as, "I do some light or moderate physical activities, but not every week". The question format is constructed as yes (1) or no (0). The first seven questions were developed based on the Centers for Disease Control and Prevention (CDC) recommendation that adults engage in 30 minutes or more of moderate physical activity 5-7 days a week. The assessment also includes two questions that assess flexibility and strength. The total score of the first seven items range from 0 to 7 points. The respondents' score is categorized into one of five levels of physical activity: 0 or 1 = sedentary, 2 = underactive, 3 = regularly underactive (light activities), 4 or 5 = regularly underactive, and 6 or 7 = regularly active. The strength training and flexibility items are scored

separately. If a person reports participating in strength training, s/he receives a score of 1, flexibility = 2 or both = 3. The RAPA has shown comparative or better specificity and predictive validity to other measures of physical activity such as the Community Healthy Activities Model Program for Seniors (CHAMPS) and Patient-centered Assessment and Counseling for Exercise (PACE) (Topolski TD et al., 2006).

Measures of process. Although the process evaluation components were primarily assessed with qualitative data obtained through observations, the recruitment, dose delivered, and dose received components were supplemented with quantitative data. Recruitment was assessed by the number of sites visited and the number of individuals recruited. Dose delivered was assessed using a fidelity checklist to determine the percentage of components implemented over the course of the 16 sessions. Dose received was assessed by attendance percentages of the grandparents and grandchildren for the 16 sessions. Table 4 illustrates the questions posed for each process component and the associated data source(s).

Table 4

Process Evaluation Components, Related Questions, and Data Sources

Components	Questions	Data Sources
Recruitment	What planned and actual recruitment techniques were used to attract individuals? What were the barriers and facilitators related to recruitment and maintaining participation? What procedures/methods were used to encourage continual participation?	Observations & recruitment descriptive statistics
Dose delivered	To what extent were the intervention components provided to the participants?	Observations & fidelity checklist

Table 4 (Continued)

Dose received	To what extent were the participants present and engaged? How did they react to specific components of the intervention?	Observations & attendance records
Fidelity	To what extent was the intervention implemented consistently with the intergenerational principles and pre-planned curriculum?	Observations
Context	What factors in the community, organization, social and/or political context affected the intervention implementation or outcomes?	Observations

Note. Adapted from Steckler, A., & Linnan, L. (2002). *Process evaluation for public health interventions and research*. San Francisco, CA: Jossey-Bass. And Saunders, R. P., Evans, M. H., & Joshi, P. (2005). Developing a process-evaluation plan for assessing health promotion program Implementation: A how-to guide. *Health Promotion Practice, 6*(2), 134-147.

Measures of feasibility. Although the feasibility components were assessed with qualitative data, the components of acceptability, demand, and integration were supplemented with quantitative survey questions. The grandparents were asked about acceptability, and it was assessed using a 5-point scale, 5 = excellent to 1 = poor, with the question "*How would you rate your experience of exercising with your grandchild?*" Similarly, acceptability was assessed from the professionals on a 5-point scale, 5 = excellent to 1 = poor, with the question "*How would you rate your experience of assisting with the physical activity program*?" Demand was assessed from grandparents in a dichotomous yes or no question that asked, "*In your opinion is there a need for physical activity programs that get grandparents and grandchildren to exercise together?*" Demand was also assessed from the professionals in a dichotomous yes or no question that asked, "*Do you believe there is a need for physical activity programs that bring grandparents and grandchildren to exercise together?*" Integration was assessed from the grandparents with a dichotomous yes or no question that asked, "*Would you like to participate in*

future physical activity programs that include grandparents and grandchildren exercising together?" Lastly, the limited efficacy component was assessed with the quantitative health assessments and measures of wellbeing described in previous sections. Table 5 displays the questions posed for each component and the associated data source(s).

Table 5

Feasibility Components, Related Questions, and Data Sources

Components	Questions	Data Sources
Demand	What was the level of expressed interest in the program?	Focus groups & survey questions
Acceptability	To what extent was the intervention assumed to be appropriate or satisfying?	Focus groups & survey questions
Practicality	To what extent was the intervention implemented and used using existing resources and means?	Focus groups
Integration	To what extent was the intervention incorporated within the existing context? What were the prospects for intervention sustainable?	Focus groups & survey question
Limited efficacy	Did the intervention illustrate promising results?	Subject & objective health measures

Note. Adapted from Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., et al., (2009). How we design feasibility studies. *American Journal of Preventive Medicine*, 36(5), 452-457.

Qualitative Measures

Focus groups and interviews. Focus groups are a qualitative research method used to facilitate group conversation and gain a richer understanding of participants' experiences and beliefs. They can be integral in the planning, implementation, and assessment of a research project, such that they can help to determine the direction of a project, fine-tune a project, or provide lessons learned for future work (Morgan, 1998). Similarly, one-on-one interviews

provide in-depth data and can be used to inform various aspects of a project or study. In this study, focus groups and one on one interviews were used for program development and to assess program feasibility.

In phase 1, grandparents participated in focus groups regarding the physical activity they were interested in participating in during phase 2 of the research project. They were also asked about possible factors that might influence their sustained participation in the intervention. An example question was "*What factors will encourage your participation in physical activity?*" In phase 3, the follow-up phase, grandparents participated in focus groups and were asked questions regarding their general experiences while participating in the intervention and the benefits and challenges associated with their participation. Program feasibility was also assessed in both phases.

It was important to understand the recreation staff and manager, health professionals, and exercise instructors' experiences while participating in the program. Furthermore, it was necessary to assess program feasibility (i.e., acceptability, demand, practicality, and integration) from their perspective. Therefore, a set of open-ended questions was used to assess their experiences in helping to facilitate the program and the feasibility of the program in both the focus groups (health professionals and instructors) and interviews (recreation staff and manager). A sample question asked was, "*What could we do to make these programs sustainable*?"

A protocol was used in order to ensure consistent focus group and interview administration (see Appendices B, C, and D). The protocol contained questions developed from the research aims and complementary probes to mine for information. Academic professionals with expertise in kinship families and gerontology reviewed the protocol for relevancy and

appropriateness. In addition, the researcher pilo*t test*ed the protocol in a mock focus group with gerontology graduate students prior to administration with the research participants.

At the conclusion of each focus group and interview, the moderator reviewed and summarized the information provided by the participants and asked for them to comment on the accuracy of the summary and to provide clarity or any additional information for credibility purposes. There were two one-on-one interviews. Seven focus groups were conducted that ranged in size from 2-6 participants. All focus groups and interviews were audio-recorded and transcribed verbatim. The researcher listened to the audio-recordings and read the transcripts to ensure transcription accuracy.

Observations. Observations are a qualitative research method that allows researchers to observe individuals in their natural environment. Through these observations, researchers are able to describe the setting, the activities that occur, and the individuals that participate in the activities (Merriam, 2009; Patton, 2002). Observations can provide an in-depth understanding of the context in which individuals operate and interact with one another. Field notes are the key mode of capturing data collected from observations. Observations are not considered data unless they are recorded as field notes (Kawulich, 2005), and are categorized along a continuum of involvement. For this study, the researcher was categorized as an "observer as participant". This means that the observer's presence and observation activities are known to the individuals being observed, but the observer is not an active participant in the settings' events (Gold, 1958). In addition, structured observations were made in this study such that the observations were guided by a framework of process evaluation (Mulhall, 2003) developed by Saunders and colleagues (2005). Also, a fidelity checklist was created and maintained by the researcher and lead exercise instructor.

For this study, non-participant structured observational field notes were taken to document components of the process evaluation (i.e., fidelity, dose delivered, dose received, recruitment, and context) during the intervention phase of the study. While observing, the researcher used a fidelity checklist (see Appendix E) and an observation guide (see Appendix A) to focus the observations. The fidelity checklist, created in collaboration with the exercise instructor, contained the core components of the intervention (e.g. warm-up, toning, aerobic exercise, cool-down, etc.). Due to a lack of resources, video recording was not used in this study. Thus, during each session, the researcher watched for the components and checked them off the list as they occurred. The observational guide prompted the researcher to "*Describe individuals, settings, situations and behaviors that you observed. Describe organizational, community, social, or political issues that could affect the program's implementation, and detail reflections after observations are written*." The guide contained two columns; one column was used to write observational field notes and the other for reflections. In the reflection column, the researcher wrote memos about feelings and opinions related to the observations made. The reflection section also served as a space for preliminary data organizing and analysis memos. After each session, the researcher reviewed the field notes to include missed descriptions and to detail the reflections regarding her observations. In addition, the researcher took attendance and included conversations with the exercise instructors and participants in the field notes. The researcher attended and made observations at all 16 sessions of the intervention. At the conclusion of the intervention, the field notes were organized and typed in a word document.

Data Analysis

Quantitative. Quantitative data were entered into SPSS (Statistical Package for the Social Sciences) version 22 (IBM Corporation, 2013). Utilizing descriptive analyses, the

demographic variables were examined for those who completed (*n*=8) or withdrew, as defined by completing 3 or fewer sessions, (*n*=4) from the intervention. One-way repeated measures ANOVAs were used to examine potential means differences on measures (*N*=10) of physical health (i.e., BMI, weight, waist circumference, blood pressure, balance, and heart rate) and wellbeing (i.e., SF-12 and CESD-10) at pretest, midpoint, and posttest. Using *t*-test, planned comparisons were conducted to explore the means differences between each time period. Frequencies and means from the survey questions were used to triangulate the process (dose received, dose delivered, and recruitment) and feasibility (acceptability, demand, and integration) qualitative data.

Qualitative. Focus group and interview data were transcribed verbatim in f5 transcription software. The observational data was typed into a word document. All qualitative data were exported into Atlas ti version 6.2 for data management and coding. Direct qualitative content analysis was used to analyze the qualitative data in this study. In general, content analysis is a systematic process of describing the meaning of qualitative data. In other words, qualitative content analysis focuses on summarizing the elements in the data versus creating theory or viewing the data in new ways (Schreier, 2012). Direct qualitative content analysis is a more structured and guided process than the conventional content analysis because the researcher uses existing theory or prior research to identify key concepts as initial coding categories (Hsieh & Shannon, 2005). Direct qualitative content analysis is appropriate for this study because the goals of this study were to understand how the intervention and its implementation could be understood within the context of established frameworks of process evaluation and feasibility. Focus group, interview, and observational data were analyzed using content analysis.

Process analysis. Coding of the process data occurred in three stages. During the first

stage, the primary researcher examined the article by Saunders et al., (2005) that details a framework for process evaluation and searched for terms, phrases, and outcomes that were indicative of process domains of fidelity, dose received, dose delivered, and recruitment, and context. Next, a codebook of themes was created based on the indicators of these domains as illustrated by information provided in the Saunders et al., (2005) article and from themes created in the first round of coding conducted by the researcher. Once the codebook was revised and completed, the researcher and research team members conducted a second round of coding in which they independently coded the data focusing on the themes related to the observations made about the intervention's implementation and the participants.

In the second round of coding, two coders compared their documents to determine if they applied the themes to the text in a similar manner. Upon discussing the themes and coding, there were three instances in which two themes that were similar in addressing a domain were merged. Text could fit into more than one domain of process; however, text could not fit into more than one theme within a domain. According to Schreier (2012) and Krippendorff (2012), themes within a domain should be mutually exclusive, such that a unit of coded text should only apply to one theme within a domain. Cases where a unit of coded text applies to more than one theme within a domain highlights possible reliability issues with the overall coding scheme/coding frame. In cases where the text seemed to fit into more than one theme within a domain, the research team discussed which theme best fit the text by examining the context of the text and the operational definition of the domain and themes. In two instances where the coders could not agree, a professor's input on the matter served as the tiebreaker. Table 6 illustrates the themes associated with the four domains of process evaluation measured by the qualitative data.

Table 6

Themes Associated with the Four Domains of Process Evaluation

Domains	Themes
Recruitment	Facilitators to participation Barriers to participation
Dose Received	Engaged Disengaged Distracted
Fidelity	Implementation quality
Context	Social influences Facility influences

Feasibility analysis. The coding for feasibility also occurred in three stages. First, the primary researcher examined the article by Bowen and colleagues (2009) that details a framework for feasibility and its domains: acceptability, demand, integration, and practicality. Secondly, a codebook of themes was created based on the indicators of the domains as illustrated by the outcome of interest in Table 1 of the Bowen et al., article (2009) and from themes created in the first round of coding conducted by the researcher. With the completion of the codes, the researcher and research team member underwent a second round of coding transcripts where they separately coded the transcripts, specifically focusing on the themes related to the quotes about the implementation of the intervention and its participants. The second round of coding for feasibility was similar to the coding completed for process domains. The coders compared their transcripts to determine if they applied the themes consistently. Upon discussing the themes and coding, there were two instances in which two themes that were similar in addressing the domains were merged. Feasibility themes were also treated as mutually exclusive. In instances where units of coded text seemed to fit into multiple themes within one domain, the researchers

examined the context of the text and the operational definition of the domain and themes to determine the most suitable theme. There was one instance in which coders did not agree and the input of a professor served as the tiebreaker. Table 7 illustrates the themes associated with the four domains of feasibility measured by the qualitative data.

Table 7

Themes Associated with the Four Domains of Feasibility

Domains	Themes
Demand	Expressed interest Perceived Demand
Acceptability	Appropriateness Satisfaction
Practicality	Facilitators to participation Barriers to participation Using existing means, resources or circumstances Effects on participants
Integration	Perceived fit with infrastructure Perceived sustainability

Achieving trustworthiness. Trustworthiness is a concept that relates to qualitative research and the ability of the findings to accurately reflect the participants' thoughts, feelings, values, outcomes, etc. (Lincoln & Guba, 1985). Lincoln and Guba (1985) suggest the rigor of qualitative research should be judged using four basic criteria that fit the qualitative paradigm: credibility, dependability, transferability, and confirmability. For this study, credibility (analogous to reliability) and dependability (analogous to validity) were used to describe the trustworthiness of the qualitative data. Threats to credibility of the qualitative data was mitigated through data (involves using different sources of information regarding a similar outcome) and

methodological (when multiple quantitative and/or qualitative methods are used to examine if similar outcomes can be obtained) triangulation (Guion, Diehl, & McDonald, 2011). For example, in this study, data triangulation occurred by assessing feasibility from the perspectives of the grandparents, health professionals, recreation staff, physical activity instructor, and the recreation manager. An example of methodological triangulation in this study was using surveys and focus groups to assess demand as it relates to feasibility. Lastly, credibility was secured by having a gerontologist from a different content area review the initial set of themes (coding frame) to ensure they aligned with process evaluation and feasibility frameworks (Schreier, 2012).

Dependability of the qualitative data was initially assured by providing a systematic protocol for the researcher to follow while conducting the focus groups and during observations. Furthermore, the researcher facilitated all the focus groups to ensure consistency in interview style and responsiveness from the participants. Dependability was also assured by having the researcher and a team member independently code the data. The coding was deemed dependable as both the researcher and team member similarly coded the majority of the units of coded text. Instances of disagreement typically resulted in consensus once the coders discussed their discrepancies and reviewed the definition of the domain and themes as well as the context of the quotes.

CHAPTER FOUR:

RESULTS

Participant Profiles

Grandparents. A total of 12 grandparents enrolled in the research study. Observations, focus groups, and health assessment data were collected on the group of grandparents. The grandparents' average age was 62.25 (*SD*=6.8). Their age ranged from 50-73. The majority of the grandparents were Black (75%), female (100%), and not married (75%). In addition, the majority of the women had a high school diploma (83.3%) and was employed (75%). Approximately 68% of the grandparents had a yearly income of $20,000 or less. On a scale of 1(poor) to 5 (excellent), they rated their health as good (*M*=3.3). The most frequently reported health conditions were high blood pressure (75%) and diabetes (58.3%). As measured by the RAPA, the grandparents' physical activity level prior to the intervention was rated as underactive (*M*=3.1, *SD*=1.52). On average, the grandparents were raising approximately 3 (*SD*=1.9) grandchildren whose ages ranged from 5 to 17. On a scale of 1 (poor) to 5 (excellent), on average the grandparents rated their relationship with the grandchildren they were raising as above average (*M*=4.0). Fifty-eight percent of the grandparents said they exercised with their grandchildren and engaged in activities such as bike riding, playing catch, and basketball. Table 8 compares the demographic characters of the individuals who completed the study (*n*=8) versus those who withdrew (*n*=4). Due to the small sample, the data from the individuals who withdrew were not subject to analysis.

Grandchildren. A total of 23 grandchildren were enrolled in the study. Approximately 53% were male and 47% were female. The average age of the grandchildren was 11.1 (*SD*=3.7).

Professionals. Interview and focus group data were collected with professionals (*n*=8) consisting of the recreation manager, recreation staff, nurses, and exercise instructors. The average age of these professionals was 51.6 (*SD*=10.6). The majority of the professionals were female (88%) and White (75%). The number of years these individuals had been in their respective fields ranged from 6 months to 43 years. Every professional had a college degree or higher.

Process Evaluation

Five domains of process evaluation – recruitment, dose delivered, dose received, fidelity, and context were assessed with quantitative or qualitative data. The themes from the qualitative analysis of the observational data were shown in Table 6. Below are the results of the analyses for each domain. It is also important to note that in the following process and feasibility sections, the actual names of the participants and the recreation center have been changed to protect the participants' identity.

Recruitment. The researcher's recruitment strategy began by contacting community stakeholders and gatekeepers to reintroduce the project. The researcher held private meetings with individual community stakeholders and gatekeepers to discuss potential recruitment sites. These individuals provided names and contact information of potential participants as well as organizations for recruitment. The researcher visited community staples such as churches, a health clinic, and a convenience store to distribute flyers. Flyers were also posted in community recreation centers. Participants were recruited from several grandparent caregiver support

Table 8

Demographic Characteristics of Individuals Who Completed and Withdrew from the Intervention

	Completed (*n*=8)			Withdrew (*n*=4)		
Characteristics	*M*	*SD*	*%*	*M*	*SD*	*%*
Age	60	6.16		66.7	6.24	
Gender (female)			100			100
Race						
Black			62.50			100
White			25			
Hispanic			12.50			
Education						
< High school			12.50			25
> High school			88.50			75
Employment						
Retired			25			25
Part-time			50			50
Full-time			25			25
Marital Status						
Not married			12.50			50
Married			25			25
Divorced			25			0
Widowed			37.50			25
Income						
< 20,000			75			50
Between 20,001-40,000			12.50			50
Between 40,001-60,000			12.50			
# Grandchildren raising	2.88	2.10		2.25	1.50	
# Years raising grandchildren	7.38	5.32		6.06	4.89	
# Medications	2.13	1.73		4.00	2.45	
# Chronic illness	1.63	1.06		2.75	0.96	
# Physical activities pre intervention	1.25	1.83		1.75	2.36	
General health	3.25	0.71		3.50	0.57	

Note. General health is measured on a scale of 1 to 5 with higher scores meaning better health.

groups. Figure 1 provides an overview of the grandparent recruitment process including the number of organizations visited and the number of grandparents recruited from each location. A total of 39 sites were visited, and 12 grandparents and 23 grandchildren were recruited for the study.

During the course of the study, 4 grandparents and 5 grandchildren withdrew from the study. Two grandmothers withdrew prior to the start of the intervention (phase 2). One grandparent and her granddaughter withdrew because of her conflicting work schedule and the other dyad withdrew because the grandmother required emergency knee replacement surgery. Once the intervention began, 2 participants and their granddaughters (n=2) withdrew from the study due to conflicts with the grandparents' work and social obligations. One grandchild withdrew from the study because the mother removed the child from the grandparent's care; however, even without the grandchild, the grandparent continued to participate in the study. Over the course of the intervention, the researcher attempted to sustain the grandparents' participation by providing a calendar of session dates and calls to remind them of assessments periods. In addition, the researcher kept the families abreast of their attendance numbers for the Family Recreation Pass. Eight grandparents and 18 grandchildren completed the intervention. Hence, this study incurred a 33% grandparent and 22% grandchild attrition rate. The two themes regarding recruitment that emerged from the observational data were barriers and facilitators to participation.

Barriers to participation. The primary barriers to maintaining consistent participation were health issues and outside obligations. Health issues precluded some of the grandparents from full participation during a session. They would attend the class, but would have to intermittently stop exercising to mitigate the discomfort their health issues were causing. This

was the case with three grandparents who acknowledged having back discomfort and one grandparent who acknowledged having hip discomfort prior to the intervention. The grandchildren also experienced health issues related to injuries. For example, one 12-year old granddaughter had an accident at school that resulted in a hairline fracture of her elbow. Another 17-year-old granddaughter's jaw was unintentionally cut during a dental procedure. During the classes that these grandchildren were injured, they did not participate in the exercise

At times, grandparents missed sessions because of existing obligations such as choir rehearsal or Boys Scout meetings. One grandmother who worked part-time and was raising her 12-year old granddaughter withdrew from the study. She disclosed that her job and leadership positions in church and social organizations dominated her schedule and left no time for participating in the intervention. Many of the grandparents were still employed; therefore, work related barriers such as meetings prohibited a grandparent from attending some classes. One grandmother who had been raising her granddaughter for 2 months withdrew from the study because she said her work obligations were increasing and forcing her to stay at work longer. In addition, she told the researcher that her job was transferring her to a new location that would place her further away from the recreation center and make it impossible for her to arrive to the program in a timely manner.

Facilitators to participation. The observational data included conversations with the grandparents that suggested the primary motivator to regularly attend the intervention was because it was a gathering where everyone in the family could participate. A grandmother who was raising 6 grandchildren between the ages of 6 and 17 supported this observation. She told

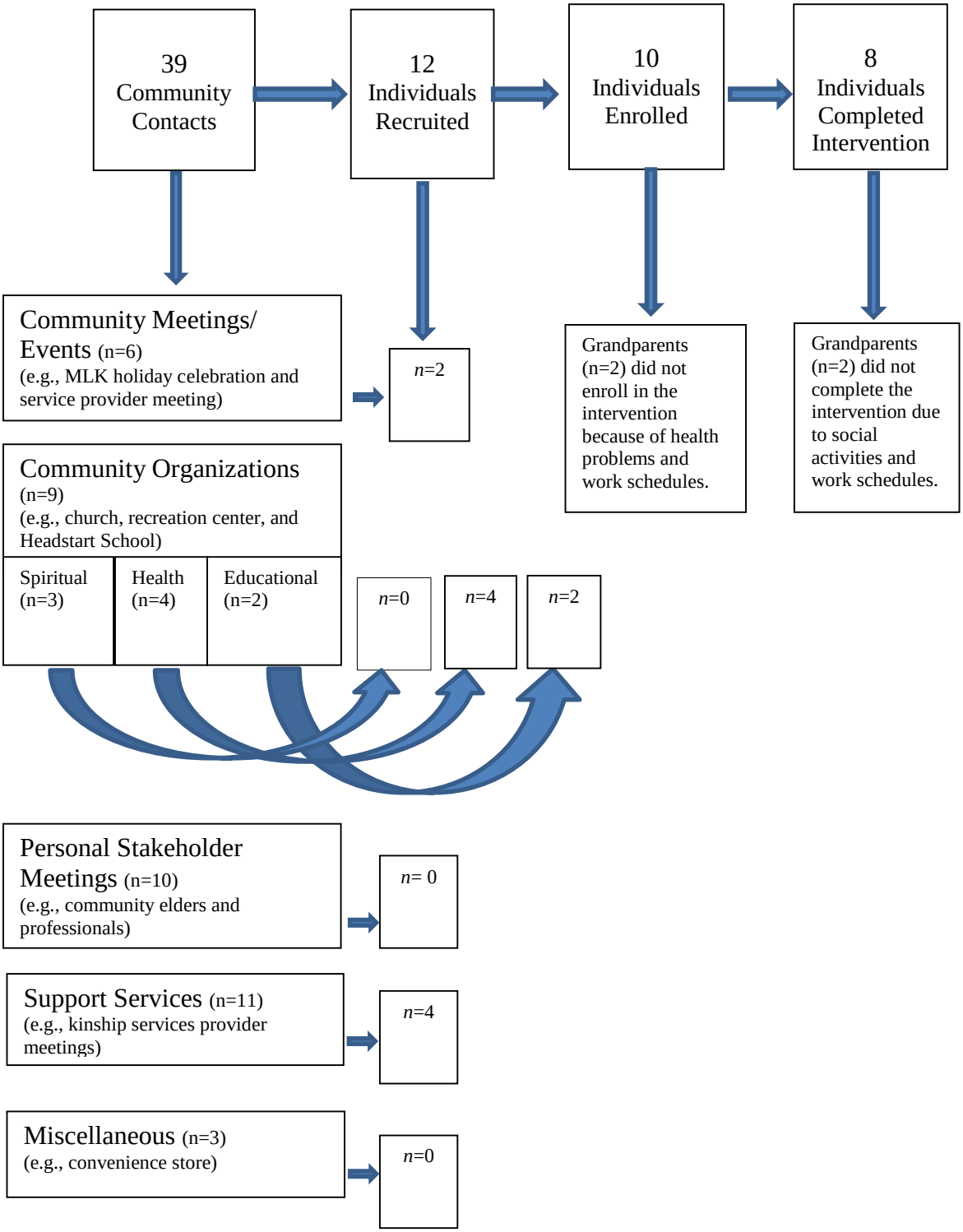

Figure 1. Grandparent recruitment flow chart illustrating recruitment contacts, number of individuals recruited, number of intervention enrollees, and attrition.

the researchers that the program was good because she cannot go many places to exercise with her grandchildren. She commented that most places do not offer childcare and the gym does not allow children of certain ages. A great-aunt raising three teenage boys with her mother made a similar comment. She thanked the researchers because she said the Zumba® class was something that she got to do for herself and her mother. She further commented that it was nice that she did not have to worry about what to do with the kids.

Dose delivered. Through observations and the assistance of the fidelity checklist, information about the domain of dose delivered was documented in all of the 16 intervention sessions over the course of the 8 weeks. Results indicated that the instructors implemented 92% of the 13 items on the fidelity checklist during the course of the 16 sessions. In general, all of the exercise related items (e.g., warm-up, cool down, balance, mind-body coordination, flexibility, toning, and cardiovascular aerobics) were implemented in every session. In addition, at least 45 minutes of music was played, and the instructor provided encouragement and support 100% of the time during the 16 sessions. Intergenerational interaction was documented the majority of the time (95%), while culture/education aspects of the sessions were implemented approximately 70% of the time. An explanation of the exertion chart was carried out (38%) of the time, the least among all of the items over the 16 sessions.

Dose received. Over the course of the 16 sessions, the average number of Zumba® classes attended by the grandparents was 10.5 (*SD* = 4.95) and the grandchildren were 9.38 (*SD* = 5.56). More specifically, 60% of the grandparents and 47.6% of the grandchildren attended 10 or more sessions. The majority of the observations regarding the domain of dose received centered on the themes of participants being engaged, disengaged, or distracted.

Engaged. Many of the observations categorized as "engaged" involved the grandchildren and grandparents smiling and laughing while dancing together. Grandparents were typically engaged in dancing throughout the entire class. It was also noted that the grandparents who had injures that typically would preclude other older adults from dancing found ways to adjust the moves so that they could continue to participate. For example, a 62-year old grandmother who wore a knee brace would dance standing for half of the class and then sit and continue to do the dance moves in a chair for the remainder of the class.

The grandchildren were more sporadic with their level of engagement over the 16 sessions. For example, they would dance for a while and then sit down and observe others before returning to dancing again. A couple of children would separate themselves from the group by dancing off to the side or in the back of the classroom. These behaviors were seen across all grandchildren regardless of their age.

There were times when the researcher noticed a high level of interest in particular songs or dances among all participants. This was observed through comments such as "oh yea" that were made when certain songs were played or when individuals who were not engaged immediately rushed to the floor to partake in the dance. High interest was also observed in the more forceful and exaggerated moves the participants displayed when these songs were played. According to the observational field notes, songs that typically elicited overwhelming interest were Line Dancing songs such as the "Cupid Shuffle", "Cha Cha Slide", and "Wobble". The high level of interest was also seen during the Carnival Circle Dance which included the use of instruments, and the handclapping dance that required a partner and engaging in a "patty cake" like handclapping movement. The grandparents and grandchildren expressed high levels of interest in similar songs and dances.

Disengaged. Unlike the grandparents, the grandchildren had issues remaining engaged in the classes over the course of the 16 sessions. The youth who did not exercise would often be occupied with electronic mobile devices, toys, or be observing everyone else exercising. This behavior occurred across all genders and ages.

Distractions. Over the course of the 16 sessions, a few distractions presented themselves during the class and that may have affected the participants' ability to be totally engaged in the exercise program. Visitors appeared to have the most impact on distractions. Some of the grandparents would bring additional grandchildren to the class who were younger than 5 years of age. Oftentimes, these children would run around the class or talk loudly during the instruction. In one instance, the grandchild got so close to the instructor she could no longer instruct the class and had to stop and redirect the grandchild. The children's attention spans waning also posed as a distraction. For example, after dancing for thirty minutes or more, some of the children would begin to play on the chairs, purposefully bump into each other while dancing, or swing on the structural columns in the classroom. During these times, the instructor encouraged the grandchildren to focus and would continue to move forward. However, there was one instance when the instructor stopped the class and directly addressed the adolescent grandchildren that were engaging in behaviors that antagonized the other grandchildren while they were exercising.

Fidelity. The primary theme used to express the domain of fidelity was implementation quality. Implementation quality was ascertained through the various actions and behaviors the instructors displayed while instructing the Zumba® exercise class.

Implementation quality. Many observational notes acknowledged when the instructors were implementing components that were included in the fidelity checklist. In particular, the researcher highlighted when the instructors educated the class on the origin of the dances and

music. For example, the instructor would discuss that the dance for the day would be the Samba and that it originated in Brazil; then she would instruct the participants on how to do the Samba. The researcher also noted instances when the instructor would include new songs or content in the sessions. The instructor asked the class to provide her with their favorite songs and she would choreograph dances for the songs. One of the grandparents requested the "Happy" song by Pharrell and within a week, the instructor presented the new song and dance to the class. The researcher also made several notes regarding the occurrence of the intergenerational handclapping song during the sessions. The researcher also commented on the natural intergenerational action that occurred while the grandparents and grandchildren danced. For example, the researcher noted when a grandmother would instruct the small grandchildren on how to do the dances. However, the grandchildren also assisted the grandparents. In one case, a fifteen-year old instructed his great-aunt step-by-step on how to do the Bachata side-to-side movement.

The notes also captured when the main instructor broke her foot and was absent from class for three weeks. The assistant instructor immediately stepped in to instruct the class. The participants were familiar with the assistant instructor and most were positive about her taking over the class. Similar to the lead instructor, the assistant instructor brought lots of energy to the class and was able to maintain the interest of the participants. One difference that the researcher noted was the assistant instructor moved through the group and instructed from various angles in the room.

The research also noted issues that potentially affected the quality of the implementation. After a couple of sessions, the dances became familiar and it became evident when missteps occurred. The researcher noted instances when the assistant instructor was incorrectly doing the

dances. Many of the observational notes reflected on the issues with the transitions between songs, such as the instructor restarting and skipping over songs on the playlist. These instances were abrupt and left the grandparents startled and wondering what to do next.

Also related to implementation quality was the instructional support the instructors provided. Many of the observational notes illustrated how the instructors provided support in terms of informing the grandparents and grandchildren what parts of the body they were exercising. The instructors also provided information on how to exercise in a way to avoid injury. For example, they provided instructions on how to correctly do a squat. During the sessions, the instructors also told the participants to breathe through the exercise movements and to stay hydrated by drinking water.

The instructors provided encouragement to the grandchildren and grandparents. This was documented in the descriptions of the instructors' animated facial expressions and comments. During every session, the instructors had high levels of energy and were always smiling and laughing. They tried to transmit their high energy and encourage the grandparents and grandchildren by asking them if they were "ready to turn it up". They engaged in vigorous handclapping and saying "come on" and yelling "whoooo". They constantly yelled during the class "you can do it". While dancing, they would ask the grandparents and grandchildren to smile and sing along to the songs as well.

Context. The majority of the observations regarding the domain of context were related to the themes of facility influences (recreation center) and social influences.

Facility influences. The observational notes illustrated the recreation staff member and recreation manager's investment and dedication to the program through their attentiveness and problem solving actions. The recreation center met their obligations in implementing the

program. Not only did they provide the space for the activity, but they also negotiated the presence of health professionals and the equipment necessary for the required health assessments (i.e., tape measures and scales for waist and weight measurements respectively). They provided healthy light refreshments and drinks during the sessions that the health assessments were taken as well. During the assessments, the staff was attentive to ensure the snacks were plentiful and that everyone's needs were met, including the researcher's and health professionals' needs.

The staff and manager extended themselves to ensure nothing interfered with the implementation of the intervention. For example, the occupational therapist who assessed balance during the first health assessment was unable to attend the midpoint and post assessment because of new employment. Thus, the recreation center manager, who was a certified Matter of Balance trainer, stepped in and administered the TUG test for the midpoint and post health assessments. As problems arose, the recreation manager was integral in finding creative solutions. For example, the recreation center lacked parking because of a national Olympic swim meet that was being held. The recreation manager and staff were aware that parking would be an issue for the grandparents; therefore, the center blocked off and reserved a section of parking spaces for the grandparents. In addition, the manager stood outside in the rain to direct the grandparents into their reserved spaces.

Social influences. Grandparents had family issues that did or could have affected the outcome of the intervention. For example, during the course of the intervention, two of the grandparents experienced their grandchildren being removed from their care. For both grandparents, the loss came as a surprise as the grandchildren's parents abruptly made the decision that the grandparents would no longer be responsible for the grandchildren's care. Indirect family issues possibly affected the program outcomes as well. For example, one

grandmother had a daughter who was going to be hospitalized for a long period of time because of pregnancy complications. The grandmother acknowledged to the researcher this was a stressful situation because the health of her daughter and unborn grandchild were in jeopardy. The situation with one of the grandmothers who lost guardianship of her grandchild and the grandmother with the hospitalized daughter occurred at the time of the health assessments. It was noted that these grandparents had elevated blood pressures in comparison to their prior assessments. The other grandparent whose grandchild was removed from her care actually dropped out of the intervention. While she mentioned work as the main reason for her withdrawal, she also noted that she did not feel comfortable continuing the intervention without her grandchild.

Feasibility Analysis

Feasibility was assessed through data collected from all study participants and at multiple phases. More specifically, feasibility was assessed with only grandparents' data during phase 1. However, feasibility was assessed with data from the grandparents and professionals during phase 3. Because of the time and who was assessed, some domains of feasibility were more applicable and discussed in greater depth in some focus groups or interviews in comparison to others. Therefore, the analyses are presented below in three parts: grandparent feasibility phase 1, grandparent feasibility phase 3, and professional feasibility phase 3. The themes associated with the four domains of feasibility (demand, acceptability, practicality, and integration) were illustrated in Table 7.

Grandparent feasibility phase 1. The domains that were associated with the information provided by the grandmothers during the developmental stage of the intervention were demand, acceptability, and practicality. It was necessary to assess feasibility in phase 1 to understand the

grandparents' ideas of the intervention. This also provided an opportunity to confront any perceived issues the grandparents had prior to the intervention and to include desired components to increase their likelihood of continuing their participation once the intervention began.

Demand. During the development phase of the study, demand was assessed with a single dichotomous survey question; *"Do you believe there is a need for a physical activity program that brings grandparents and grandchildren to exercise together in this community?"* One hundred percent (*n*=12) of the grandparents indicated yes.

Acceptability. All of the quotes regarding acceptability in the qualitative data were related to the theme of appropriateness. Acceptability was assessed in the context of the grandparents deciding which physical activity programs they wanted to participate in: African Dance, Zumba®, or Line Dancing. The majority of the grandparents deemed Zumba® as appropriate. Half of the grandparents decided what was appropriate according to the sentiments of the children. A 64-year old White great-aunt who was raising three males between the ages of 9 and 15 commented:

> I have, I have to go with something that doesn't have dance in the name... because my kids aren't going to do it. So... I'm... I'm, I'm in for Zumba® because... oh, they wanna do Zumba®. They wanna look like Shaun T. That's what they said... oh gosh, ah, yeah that's, that sounds cool!

A 62-year old White grandmother raising 5 grandchildren between the ages of 6-17 chose Line Dancing because of her grandchildren as well, she commented:

> Well, I had taken the kids on a cruise... and they loved the Line Dancing. We didn't know how to do it very much... but we loved it. So, even the little guys liked it, so...-it's easier

for them to learn- to follow. Yeah, because they heard we were coming [to the focus group they said], "Line Dance! Line Dance!"

In contrast, others chose an activity according to their own personal interests. After viewing the video, a grandparent who was indecisive about Zumba® and Line Dance said, “Um, it looked like the Zumba® was um, movin' a little more than the Line Dancing”. “Um, the Line Dancing is like the dance they doing now, um, I can do that.” Another grandparent who chose the dance according to her personal preference had a similar comment regarding why she chose Line Dancing, “I guess it's because we are, we're, it's something that we're comfortable with, we're use to that, you know?”

The grandparents also discussed activities that would not be appropriate. Some of the grandparents said they were willing to try anything, “No, I, I'll try any, any of it.” and another grandparent commented that they would try, “Anything once”. Other grandparents commented on activities that would be inappropriate, such as activities that caused injuries like weight lifting. They were also clear that anything that would put stress on their knees would be difficult for them to participate in like “the kickboxing and all that kind of stuff” and another grandmother stated, “I don't like the, um, and I know- I don't like the treadmill”. Grandparents also commented that they did not want to engage in activities that were too rigorous. They made specific comments like: “...aerobics that's too fast for me” and “...ah, anything that's really, really, really fast... like the Zumba®.” It was clear that low impact activities were deemed more appropriate for these grandparents.

Practicality. Themes related to practicality were facilitators and barriers to participation and possible effects on the participants (referring to the possible effects of the program on the participant’s health outcomes and lives).

Facilitators to participation. Facilitators were initially discussed when the researcher asked the grandparent the times and days that would best accommodate their schedules to schedule the physical activity program. Before discussing the specific days and times, the researcher wanted to assess the number of days the grandparents would be willing to participate. Understanding the time constraints of these families, the researcher was apprehensive that having a program two days a week would require too much of their time. However, the grandparents were overwhelmingly in agreement that having the program two days a week was fine. The grandparents were also very vocal that the program would have to occur in the evening, mostly because of the school dismissal times of the grandchildren and the adults' work schedules. An example of this point was when a grandmother commented, "Uh, if it's two days, long as it's in the afternoon, then it's fine. Yeah. As long as it's after 4:30, when the kids get off from school." In dialogue with two grandparents about scheduling, one grandmother commented, "Well, Monday through Friday any evening, I'm open. Because, I work Monday through Friday, 7-3, so I'm home every evening." Another grandparent in the same focus group responded, "Well, any day during the week after f-, after five, six o'clock, that's fine."

Next, the researcher asked the grandparents what motivated them to participate in exercise in general; the researcher used this information to surmise what would be potential facilitators or motivators for their participation in the intervention. In one focus group, the overarching motivator was being able to include the children or have childcare. One grandmother commented, "I think if I had the time, and... if I had someone to sit with, you know, basically I have to take them [grandchildren] with me". Another grandmother in the focus group had similar sentiments, she concluded, "Well, it would be easier if I could do it with the children... because then they're with me".

In a different focus group, grandparents commented that social support would be a motivating factor to exercise. “When you know that you gonna have someone that's there that'll meet you... and set your little meeting place and relaxing place with other wo- other ladies of your [age]...” One of the ladies agreed with her, “Yeah” they commented and a third grandmother who was nodding her head while the other grandmothers were talking and commented, “I just thought I agreed with them. I do agree.”

Barriers to participation. Similar to facilitators to participation, the researcher asked the grandparents to discuss potential barriers to them participating in the intervention. A majority of the grandparents’ trepidation resulted from health issues. For example, a 62-year old grandmother with two chronic conditions commented, “I guess anything I'd have to get down on the floor and get back up would be my only problem with my knee”. Another grandparent who was 60 years old with four chronic conditions commented, “You know it's so weird, that my knees won't let me anymore. And the walking part I can only do that for a half an hour, cause my knees will start to ache”.

Other grandparents made comments that were related to intrapersonal barriers. A 64-year-old great-aunt stated, “...I don't think I would mind exercising if I didn't sweat. That's the thing--I just don't like to be hot and miserable... and sweaty”. Another grandmother discussed how she has a Silver Sneakers membership (health and wellness program for older adults), but that she did not use it. The researcher inquired why she does not use it, and she said, “I’m lazy”.

Effects on the participants. During this phase of the study, the grandparents discussed the possible effects of the intervention in terms of the goals they hoped to accomplish by the conclusion of the intervention. The majority of the goals were health-related, and many grandparents commented on their desire to lose weight and be fit. However, for some the desire

to lose weight came from doctor's orders due to existing health issues. For example, a 62-year old grandmother with two chronic health conditions commented, "...cause the doctor keeps saying, "Well you know if you lose weight, you won't have um, your knees won't be as weak. ...So I really have to get the weight off, it, it, it probably will help". In a similar example of a 64-year old great-aunt with three chronic conditions, when asked about her goals for the intervention she said, "Weight loss. Because my doctor keeps yelling at me, talking to me about losing weight, "You gotta lose some weight so you can get that blood sugar down. I'm trying..." Other grandparents commented on how they wanted to maintain the healthy behaviors and weight loss. A 50-year old grandmother with one chronic condition stated she wanted to, "Continue to lose weight 'cause I'm losin' pretty good. To lose weight and really continue to exercise...".

Others commented on how they wanted to firm, tone, and strengthen their muscles. For example, A 72-year old grandmother with two chronic conditions commented, "...Cause I've lost weight...and I need to tighten, tighten flab and firm up". Another grandmother was more specific in the areas she wanted to tighten, "Um, the flab, the arms. Lose it first before I tighten it up. And then um, um, the middle ...And then, basically just to strengthen..." (63-year old grandmother with 2 chronic conditions).

Grandparent feasibility phase 3. It was necessary to assess feasibility in phase 3 from the grandparents' and professionals' perceptions of the intervention once it had concluded. Similar to the development phase, the domains that were associated with the focus group information provided by the grandmothers during the follow-up phase of the intervention were demand, acceptability, and practicality. In addition, quantitative health measures from three time

points: baseline, mid, and post intervention were compared for the feasibility domain of limited efficacy.

Demand. Similar to the development phase, demand was assessed with a single dichotomous survey question; *"In your opinion, is there a need for physical activity programs that get grandparents and grandchildren to exercise together?"* One hundred percent (*n*=8) of the grandparents indicated yes. The majority of their comments in the qualitative data related to the theme of expressed interest. In the focus groups, the grandparents spoke about their interest and their grandchildren's interest in participating in the intervention. The grandparents relayed the grandchildren's interest in the intervention. One grandmother commented," …on the day of Zumba®, they could not wait... could not wait to get here. [The grandchildren would say] "Is it time to go yet? Is it time to go yet? Is it time to go yet?" Another grandmother discussed how the family missed a week of classes because of a death in the family and her grandchildren were disappointed they were unable to attend class. She commented, "...actually, my grandchildren were like, "Grandma... we didn't die!" You know, I was like..."Oh my God!" You know? They really wanted to come, but I was, you know [supporting family]..."

The grandmothers also expressed their own personal interest in the program. They made comments like, "Well, I need to find something 'cause I'm doing so good with the Zumba®. So, I would like to find another Zumba® class." The grandparents discussed how after the sessions the grandchildren would instantly fall asleep. Then one of the other grandmothers chanted, "Need more Zumba® !". Other grandparents' interest led them to inquire about future interventions. They asked, "So what are we gonna do now?" and "Having one (intervention) again this fall?"

Acceptability. Acceptability was assessed with a single question. On a scale of 1 (poor) to 5 (excellent), the grandparents were asked, *"How would you rate the overall experience of*

exercising with your grandchild?" All of the grandparents (*n*=8) rated their experience as "excellent". In the focus groups, the main theme in the domain of acceptability that was supported was satisfaction. The grandparents often talked about how much they enjoyed the program. They made remarks like, "Enjoyed it", "Yeah, it was great", "It was worth it", "It was enjoyable", "I loved it", and "It was fun". The grandparents' level of satisfaction was often discussed in the context of the social interactions. One grandparent commented, "The whole group in general, the grandparents, the young, the old, they just, keeping being there and everybody's getting along and… that was just fantastic. That's an experience that I'm never going to forget." In line with the previous comment, another grandmother stated, "Um, but actually I love this. I really did. I looked forward to coming, as much as anybody else in the family did... um, I look forward to being with the people that were participating..." Also relating to the social aspect, a great-aunt discussed how there was a sense of belongingness in the group. She commented,

> ... off where you left off, with that ah, point in the song where, um, you're clapping hands with another person... Um, I saw several times when, ah, maybe a person was on this side of the room and there was a person on this side of the room...: but nobody partnered up with them... where two people would open up and let three people clap with the other two and I just thought that was um just really special. It just shows the, the... caliber of people that were in the class. And how willing they were to be accepting and allow everybody to participate with them you know... (64-year old, White great-aunt).

Some grandparents discussed the specific components of the program such as the music and dances that were satisfying to them. One grandmother commented, "I liked all the music too… but um, I think, all in all, when Michael Jackson [came on]... (She started doing the dance

routine and singing)" One grandmother commented on the dances that her grandchildren enjoyed, "and then he'd love that one part, um, we had to shake our tooshie on the way back... that was his favorite part... he'd shake that little tooshie ...that, and the freestyle."

The grandparents spoke about being satisfied according to the benefits they received from the program. One 62-year old grandparent who lost weight while participating in the intervention commented, "So, I learned that I have to get up off my butt and do it if I want to lose weight and... And look at the benefits that have come! I know! I'm so happy!" Another grandparent described that she was satisfied with the program in the context of regaining her old self, she commented, "And so, and that's, that's what this whole journey has helped me to do, you know, to get inspired, to find myself, and get back to, you know, who I really am. And I'm enjoying it…"

The grandparents expressed overwhelmingly positive views of the intervention; however, a few grandparents discussed ideas that would enhance it in the future. Some grandparents expressed how they felt that sometimes the music and dances felt repetitive and that changing things would add more excitement, especially for the children who learned the routines quickly. Another grandmother discussed adding more educational and social components to the intervention. She stated,

> Well, I would like to see ah, some way that, ah the bonding kinda continues on, and I know this was, you know for the project, but definitely would like to see it move on. Maybe develop into a club of some sort and we can do ah... in addition to that we can... have outings together. We can, um, you know, do different foods, learn about different cultures, I like when we did the little salsa thing... So just different things and ah, I, I like to be educated more after class, and I know the, the, is the class 45 minutes or an hour?

> So, it's an hour long class... And um, I, I would just like to see, at the end of that time... you know, maybe there's a cool down, where we wind up sitting down, and you know, holding hands in a circle, or just doing something where we all come together and have some kind of closure and... for the event for the next time... Those are just some of the things I thought, what would have been nice, it would have kind of added a little bit more depth... and, you know... to the experience each time (56-year old, Black grandmother).

Practicality. Themes related to practicality that were supported by the data were facilitators and barriers to participation and effects on participants.

Facilitators to participation. The grandparents discussed a host of circumstances that facilitated their participation. One grandparent discussed that her family's motivation for coming was to receive the Family Recreation Pass, so the grandchildren could go swimming for the summer. Another grandmother discussed how far she lived from the recreation center, but because the program was centered on family and it was Zumba® she made the extra effort to come. One grandparent discussed that her reason for continuing to participate was because of a competition between her and one of the other grandmothers. She stated,

> 'cause I didn't wanna miss. See, me and Ms. Jane had this thing goin' on that we were... so I was tryin' not to miss ...you know, I wanted to come more times than she was.... was comin', right? And, one time I heard she came [when I didn't come] and I'm like... "Darn!" I was so mad! So really, it was like we was playin' this little competition thing, you know.... tryin' to out-do each other and stuff... who would come the most... and all this stuff. I didn't wanna miss any days, to be honest... (58-year old, Black grandmother).

There were many statements about commitments being made. One grandparent discussed that she made a commitment to herself to complete the intervention, so that was her motivating

factor. Another grandmother commented about her grandchildren being a facilitator,

> Only thing, I never had to force my grandkids to come, they more or less was like, "Grandma, we goin' to Zumba®?" You know. I never... once it was on, it was on. Ain't no way I could say, "We ain't goin' to Zumba® tonight?" They'd be mad, they'd be like, "Uh uh, we wanna go!" So... I had to come, you know? I wasn't gonna let them down, 'cause I started it, you know... it was like... now I can't, you know, I gotta go now... (58-year old, Black grandmother)

In addition to making commitments to themselves and their grandchildren, the grandparents discussed how they all came to the intervention because they had made a commitment to the researcher and her endeavor to complete her dissertation project. The dialogue below illustrated how multiple grandparents agreed that support for the researcher was a motivating factor. Ms. Baker commented first,

> So, um, so I just wanted to make sure that I, made a commitment and, you know I might not have made that commitment completely if it hadn't been that I knew this was for your doctorate. So I, I... I probably would've dropped out one day when my back was hurting, when I went home. You know? I probably would've um said, "Oh, look, walking is a lot more important than Zumba-ing "...so I'll just, ah..."...I'll just, you know..."...keep my belly, try to suck it in when I go in to..."...in a door..." and do that as exercise and be done with the whole sweating thing." Um, but, because I, I knew the purpose of this program... I felt a commitment also to you, to, um, follow through with this because of your commitment to your- yourself and your education.

All while Ms. Baker was telling her story, the other grandmothers nodded and said “yes” in agreement with her. Ms. Parker chimed in the conversation and said, “I, I agree. That-that was a

big motivating factor for me too. To come here...” Ms. Dill also joined in and stated, “Yes. That's the reason we made sure we came every week. Because, so... I'd say, "Come on kids, we gotta go for Ms. T (researcher)!"... "Okay!" [We are] all very, very proud of you!”

Barriers to participation. The grandparents cited various life circumstances that precluded some of them from attending class. One grandparent discussed how she has back problems and was often times unable to walk. She commented,

> ...well, there were probably a couple times I didn't come, it's because my back, I had back surgery... four and a half years ago... and a lot of time I have to have shots in my back and... and neck, sometime I can't get up, like, this morning, I had a shot, yesterday and I couldn't hardly get up this morning (50-year old, Black grandmother)

Another grandmother discussed how prior scheduled appointments and the children being sick contributed to her missing class. She commented,

> “I know I missed, I might've missed maybe the first one I missed and the... and I missed maybe a few, but it was because of ah, appointments, um, I live pretty far away from Clearwater at the other end. Um, and, also, to sickness...we were sick and I'm the only one that drives... (61-year old Hispanic grandmother)

For a couple of grandparents, they were absent to support friends and family members who had experienced the death of loved ones. One grandmother stated,

> I think I missed one class 'cause it started at 5:30 and ...I got off at 5 o'clock. And then, a friend of mine lost her aunt. ...and... I just spent time with her, but ...I really could have made it... (58-year old, Black grandmother)

Effects on the participants. The grandparents discussed numerous effects the intervention had on them and their grandchildren. Most of the quotes related to the effects the intervention

had on the grandparents' mental, social, and physical health. The consistent improvement with most grandmothers was in their blood pressure. One grandparent commented on the change in her blood pressure during the intervention, "When I did my blood pressure... Ah, the time before it was like, 146 over like, almost 90, it was like, really high... I never had high blood pressure, but now, last time we did it, it was 114... over 74." Another grandmother commented on the weight she had lost, and during the focus group stood up and displayed her loosely fitted pants.

The intervention also had an effect on the grandparents' mental health. For example, one grandmother commented on how the program helped her cope with the death of her mother,

> Well, with me, I, I probably mentioned, in October I lost my mom. So I was in a kind of depressive state, but this helped me kind of get my mind off of that, you know not dwell on it as much you know. 'Cause my mom was not a person for me to, you know if she'd have known I was dwellin' on her, or grieving, she would be like, "Girl!" That's how my mama was... she would just... So, that's, it kind of made me be more active 'cause my mom was like that. We'd play volleyball when I was younger... and she would play on the team with us, you know, that's just how she was so... as we'd get more into this, it kind of reminds me of my mom, you know? Continuing on with her, 'cause she wouldn't want me sittin' back doin' what I was doin'... tryin' to grieve, you know... You grieve, but not, she wouldn't want me grieving like that... like I was. So, it kind of made me more, happier, I guess (58-year old, Black grandmother)

Another grandmother commented on her increased sense of wellbeing, "...and, um, I really started feeling very, um, I think the, you know, good hormones kinda popped out, 'cause I really started feeling like I had some energy and more, and was happy, you know... Like ooh..." (64-year old White great-aunt)

The grandparents also discussed how the intervention got them out of the house and provided them the opportunity to interact with other grandparents.

> Um, it made me know that I need to get out more with my, with myself and my grandchildren because I was mostly like, stayin' at home...it, you know, and it got me out to meet, like I met... a lot [of]... the ladies here... (50-year old, Black grandmother)

Also related to health, the grandparents discussed how the intervention motivated them to engage in other physical activities. One grandmother commented on her Saturday exercise class, "So... so I have actually gone to several little Saturday classes [Silver Sneakers Exercise class]... by myself… before the kids get up. Um, and have really enjoyed that too." After she left the first class feeling empowered and encouraged, one of the grandmothers stated how the class motivated her to work out on her treadmill. During the focus group, she disclosed the private conversation she had with herself,

> "…Okay, now, this here, let me blow all this dust, this dust off this treadmill..." "...let me take all the clothes off of it..." "...and plug it up!" And so, I said, "I'll just do like thirty minutes a day," and then it went on to each week I said, "I'll add five minutes"... so, I started at thirty, for a few weeks. Then I went to thirty-five, now I'm at forty... and then I'll get on the floor and I say, "Okay, I did my treadmill, I'll do my Pilates." And now, I'm, you know, just feelin' really good about that and have that big Zumba® class, Men in Black, in ah, August, I gotta get, I gotta, you know get myself ready so I can go there and, and participate in that (58-year old, Black grandmother)

The grandparents also discussed how the intervention helped them to learn about their health. One grandparent commented on her conversation with the nurse about her blood pressure and how it changed her behavior,

> ...when I get weighed in, she told me that my blood pressure and stuff had went down... a lot, you know...a lot. It was really high...the first time. I started, you know, taking my medicine like I was supposed to... the first time I said, "Yeah, I took my medicine." But after then, I started taking it everyday 'cause I seen it, my blood pressure was like, really high... the first time (50-year old, Black grandmother)

Another grandmother commented on what she learned as well,

> I have learned that...get off... I do... to get up off my butt and... exercise, really exercise. I thought in my head, I had it… Well, you're taking care of the six kids, you're always out, running around, you're always takin' 'em to the beach or... takin' 'em to the park or... I thought that was exercise, when actually, it wasn't. I was just runnin' around... and sittin' there while they were playing in the park! So, I learned that I have to get up off my butt and do it if I want to... lose weight and... And look at the benefits that have come! (62-year old, White grandmother)

The grandparents also commented on the effects the intervention had on the grandchildren. The grandparents discussed how the kids slept better. One grandparent commented, "...Cause and once you bring him and I get him home (snores). ...Can't hardly feed him, you know, just can't hardly bathe him, he just knocked out, so..." Another grandmother had similar sentiments, "So, and when they go home after Zumba®, they die. Those two little boys would be out in the car before we ever got home!"

When asked if the program had affected their relationship with their grandchildren, most of the grandparents disclosed that they already had a good relationship with their grandchildren. However, the grandparents raising multiple grandchildren discussed how the grandchildren seemed to be getting along with one another better. One grandparent explained,

> But um, yeah, they get along a lot better and, and now when ah, they go home after the Zumba®, Amy does the Wii and Gerald says, "I want to do the Wii with you!" They, 'cause we have Zumba® too... on the Wii. So they just dance and they don't, you know, say, "Oh, get out the way", they dance together and ah, they're doing a lot of things together, which... they weren't doing before. So, I think they're sharing more... (61-year old Hispanic grandmother raising 3 grandchildren)

According to grandparents, the intervention helped some of the shy grandchildren to open up more. "...my grandchild's, my grandson he really don't mingle with people too much but comin' here... he mingled a little more than he... usually do. Because he's usually to himself." A great-aunt explained how the program affected her great-nephew's confidence,

> I ah, I think ah, one of the special things is that, um, Tuesday of this week, I had a s- a conference at school, and they were talkin' about after FCAT. Um, that they played some music, um, off of one of the, you know, I don't know if it was, I don't know what kind of music, but it was one of the kids... um, music videos. And um, so, Adam our youngest and and our shyest... um, a-, he kind of didn't, I mean, he just really didn't wanna participate [in the intervention] because he was so concerned about... messing up and stuff. Well, when I went to the teacher's conference, she said, "You know he did, he did fantastic on FCATs this year. He really focused"...and she said, "Then we put on this dance, um, video..." And she said, "He was just up dancin' all over the room!" And s-, and... and I, I said, "He was!" And she, and she said, "Yes!" And so, ah, she asked me, um, what kind of things that the kids were doing, and I said, "Well, we've been taking Zumba®, as a class." And the teacher said, "That's it!" "That's what he was doing!" He was Zum-, he was doing Zumba®. He was doing Zumba® after his FCAT. (64-year old,

White grandmother)

The dialogue with the grandparents also illustrated how the grandparents and grandchildren had started to hold one another accountable for their health behaviors. One grandmother discussed how her grandchildren reminded her to take her medicine and exercise.

> Yeah, 'cause they be on me about exercise...."Grandma, come on, let's go walk." "Grandma, come on." 'Cause I told 'em, I said, "Well... see this make me start walkin' and stuff, so..." "Come on, Grandma, take your medicine, let's go. Take your blood pressure pill, here go your pill, get somethin' to drink, let's go." My granddaughter, she know which one. She'll watch, she done watch me, "Come on, Grandma take your medicine, 'cause we don't want you going to the emergency room." (50-year old Black, grandmother)

Another grandmother discussed how she and her granddaughter have been making healthier choices together.

> We have been more physical, you know, as far as exercising bein' more, conscious about our health. You know, 'cause really all of us just sittin' 'round, eatin' chips and sodas. You know, but we, now we lookin' at... You know a better healthier lifestyle, you know... So... I used to talk to Patty, as you can see, Patty heavy, you know ...we used to do this, say "Do this, P" instead of tellin' her to do stuff, now we kinda do it all together and that helps her, she doesn't feel like she's bein' picked on. You know, all of us do it together now... so that helps, you know? (58-year old, Black grandmother)

Integration. None of the grandparent focus group data provided information related to the domain of integration. However, the researcher did assess one of the integration themes perceived sustainability by asking the grandparents a single dichotomous question, *" Would you*

like to participate in future physical activity program that include grandparents and grandchildren exercising together" One hundred percent (*n*=8) of the grandparents indicated "yes".

Limited efficacy testing. Limited efficacy testing describes the outcomes indicative of the intervention in a limited manner (i.e., using convenience sampling, measuring intermediate outcomes, having shorter follow-up intervals, small samples, etc.). The outcome component of this study met the criteria for limited efficacy testing. In this study, measures of wellbeing, blood pressure, waist circumference, BMI, and balance were assessed at baseline, 4 weeks, and 8 weeks. Eight participants completed data for all three-time points. Although the repeated measures ANOVAs were not significant, group means and standard deviations illustrated both increasing and decreasing trends of improvement across the various health assessments over the 8 weeks (see Table 9).

At baseline, grandparents' scores on the SF-12 for the mental health subscale were below average of the U.S. general population. However, overtime the scores trended upward to surpass general population scores. The grandparents' TUG walking time and heart rate experienced an improvement across the three measurement points. Scores on the CES-D improved from Time 1 to Time 2, but leveled out between Time 2 and Time 3. While blood pressure (diastolic and systolic), weight, and BMI experienced net improvement over time, there was not a consistent trend in one direction. For example, average weight increased from Time 1 to Time 2, but decreased from Time 2 to Time 3. For the planned analyses, paired-samples *t*-test illustrated that there was a significant difference in the CES-D scores from time 1 (*M*=11.13, *SD*=5.06) to time 2 (*M*=8.88, *SD*=4.45); *t* (7)= 2.61, *p*= 0.04. These results suggest that the physical activity intervention did have an effect on depression scores, such that the grandparents were less

depressed four weeks after the program began. It is important to note that the grandparents maintained the low depression scores at the posttest. The planned analyses *t*-test on the other nine measures of health was not significant. The results of the repeated measures ANOVA and planned analysis must be used with caution because of issues related to the small sample size. This also precluded the use of more powerful statistics. However, it was still important to conduct some form of statistical analysis to illustrate the possible effects the intervention might have on health.

Table 9

Means, Standard Deviations, and Repeated Measures One-Way Analysis of Variance for the Effect of the Intervention on the Health Outcomes at Time 1,2, & 3.

	Time 1		Time 2		Time 3			
Characteristics	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*(2,14)	*p*
SF-12 Physical Component Score	45.05	7.15	45.85	5.93	46.36	9.21	0.11	0.90
SF-12 Mental Component Score	48.09	10.68	51.15	7.35	51.70	10.25	0.81	0.10
CES-D	11.13	5.06	8.88	4.45	8.88	3.60	2.50	0.12
Blood pressure (systolic)	78.75	10.18	75.38	7.35	76.88	4.64	0.40	0.68
Blood pressure (diastolic)	139.38	11.25	129.88	8.25	130.25	11.45	2.42	0.13
Waist circumference (in.)	43.60	2.98	42.69	2.49	42.91	2.60	2.63	0.11
Heart rate (beats/min.)	81.00	12.97	75.13	9.82	74.13	5.44	1.66	0.23
Weight (lbs.)	214.53	23.70	215.10	22.09	213.83	22.66	0.71	0.51
TUG Balance (sec.)	10.18	3.92	8.60	2.09	8.56	2.32	2.95	0.12
BMI	34.68	4.32	34.76	3.97	34.57	4.16	0.65	0.54

Note. The data represents the outcomes of grandparents (*n*=8) who completed the intervention.

Professional feasibility phase 3. The domains that were associated with the information provided by the professionals during the follow-up stage of the research study were demand, acceptability, practicality, and integration. It was necessary to assess feasibility from the professionals in the follow-up phase because it was important to understand their personal perceptions and their perceptions of the grandparents and grandchildren's experiences in the intervention.

Demand. Demand was assessed with a single dichotomous survey question; "*Do you believe there is a need for a physical activity program that brings grandparents and grandchildren to exercise together in this community?"* The majority (87.5%; *n*=8) of the professionals indicated "yes". The theme that supported the overarching domain of demand was perceived demand. During the focus group, the nurse discussed how the study brought the issues of grandparents involved in kinship to the forefront for them. They began to talk about how and where the program could be expanded, "Maybe there is a role for something like this at some of our churches you know? Inter-, intergenerational activities...whether it be exercise or something else... crafts or whatever it is you know?" The recreation staff member also felt that there is a demand for this type of intervention; however, he discussed the demand from an intergenerational solidarity perspective. He stated,

> You have the ah, generation gap is a, tough ah, tough one to close. So um, I think it's important to, to try to at least get people to understand the other, the other's perspective... because they really do live in two different worlds, but, in another sense it's all one world, so... gotta get along (Male, 1.5 years as recreation staff)

The recreation manager discussed demand in the context of the program being relevant and the grandparents continuing to attend the sessions. She stated, "You had taken very um, well, certainly a lot of time to create a very relevant program for these families, and, um, to watch them respond as they did, and keep coming back, I mean, that was just amazing..."

Acceptability. The prevalent themes related to acceptability were appropriateness and satisfaction.

Appropriateness. All of the professionals felt that the intervention was appropriate for the population for various reasons. The recreation manager commented, …I think that it was the

right class, I think it was the right exerc-, it was the right type of exercise..." While the nurses also made comments about the relevance of the intervention, they made comments regarding how the health measures used in the intervention were comprehensive and appropriate considering time, efficiency, and relevancy. The most frequently stated reason for the intervention being appropriate was because it allowed grandparents and grandchildren to exercise together and ward off possible health conditions or address current health issues. The assistant Zumba® instructor made a comment that addressed both points. She stated,

> And, um, again having grandparents, and grandkids, same place, same location, boom... everybody's there, it eliminates, it makes life easier and... for them to be able to exercise, you know, and everybody benefits. The grandparents from, um, it lowers their risk on different medical conditions that they can develop. Same with the kids... um, because kids are now gettin' stuff that older people used to get. You know? So, um... so like you said, blood pressure, and um, weight loss and it helps the grandparents with balance and stuff like that. 'Cause now they're taking care of grandkids, they're more mobile even. You know and all that, that helps, so the program is definitely needed. And now these days, there's more and more grandparents taking care of kids, which, this is new territory. This, this wasn't like this years ago (Female, 6 months as Zumba® instructor)

Satisfaction. Satisfaction was assessed in the professionals' follow-up survey. On a scale of 1 (poor) to 5 (excellent), the professionals were asked, *"How would you rate your overall experience of assisting with the intergenerational physical activity program?"* All of the professionals rated their experience as excellent. The focus groups provided additional evidence supporting their level of satisfaction. In general, the grandparents and grandchildren exercising together moved the professionals. They made comments like: "I loved seeing the g-, the

grandmoms, and the kids, all together, all movin' to the music, havin' fun, havin' exercise, interacting in a really positive, upbeat way..." and "…the fact that you did this program at the same time with the children and the adults..." illustrated the professionals liking for the intergenerational facet of the program.

The professionals commented on the design and organization of the research study. The recreation manager provided an example related to program design and families exercising together,

> Um, I liked that the program was so beautifully designed, um, and that's to your credit um, it was just ah, it was very clear that you had taken so much, ah, you had taken very um, well, certainly a lot of time to create a very relevant program for these families, and, um, to watch them respond as they did, and keep coming back, I mean, that was just amazing, and also, I, I really liked the dynamic of the multi- multiple generations in the room. That was um, just delightful (Female, 8.5 years as recreation manager)

The nurses also commented on the design and organization of the study. Specifically, one of the nurses stated,

> …I'm thinking of the group [nurses], and I really appreciated… the organization of it. I, It, very seldom are we able just to walk into a site… have everything set up so beautifully... have everything that, that we need there... I mean that's what I was, we were all so grateful… for that, because sometimes we go somewhere and, it's often we go and… that's not the case. And then I think the way that it was organized with the people getting their folders and you know, the information, and, and they knew what to do and they'd come and... and everything was very clear... on how we were to record things and, um, you know, and that, that's important... it doesn't seem important when everything

goes well, but when it's not... going as well, then you really notice it. So, I thought this was very well organized and, and then um, the um, you know I know you had snacks, healthy snacks and, and things for the... for the families and, and that just seemed so well organized and then the other thing is, everybody that was working... or representing the Long Center, everybody was so considerate... and kind and pleasant to be around which is also just a wonderful thing (Female, 35 years as a nurse)

The nurses and recreation staff member were also pleased with the incentive that was provided to the grandparents for participating in the program. When the nurses inquired about what was done to encourage the grandparents to continue exercising, they were informed that the families were provided with a Family Recreation Pass. They were all delighted. One nurse commented, "That's awesome. For each child? Yeah. Wow, that's really nice to hear. So, our taxes help... pay for that? I'm glad to hear that!" (Female, 33 years as a nurse) All the other nurses in the focus group nodded their heads in agreement or verbalized their satisfaction with the distribution of the Family Recreation Passes. The recreation staff expressed similar satisfaction when asked what he liked about the program he commented, "It [the intervention] pr-, provides incentives for the participants, ah, beyond a simple reward, but to encourage them to continue the same sort of behavior in the future by giving them a Family Recreation Pass".

The professionals also discussed being pleased with the health outcomes the grandparents received while being in the study. For example, the recreation manager stated,

"I was very pleased with the outcome of the program. I was delighted that, um, I was very happy that it seemed that many of the grandparents may have experienced a health benefit, whether it was stress reduction or actual physical changes that were a benefit to them, or that they, um, are sleeping better..." (Female, 8.5 years as recreation manager)

The assistant exercise consultant discussed how she was pleased that the grandparents were making healthy choices,

> ...they said they were enjoyed it [the intervention] and had started talking about making changes in their lives through nutrition and more water... and I was like, "Alright, they're moving towards better health." And so, I thought that was pretty awesome. (Female, 6 months as a Zumba® instructor)

While the professionals did not explicitly mention any major concerns they had regarding the program, they did discuss different components that could be added to enhance the program. The exercise instructors and nurses discussed adding a nutritional component. The assistant instructor suggested introducing nutrition into the program in small doses. She commented,

> ...like if we gonna do the class or exercise for like 45 minutes that's cool. But, I think if we put, add a little more nutrition in it like, for... example, first week or something, pick a target, say, water... to try to get people to introduce more water into, into their regular diet or something like that. And, start talking about that and then maybe next week would be another small change. That they could kinda make. So, I think stuff like that might be helpful... as you're going through the program. And then by the time you're finished, if those who have actually done this, they're leaving with, not only the experience of doing exercise... or Zumba®, but they have something to carry forth with them and hopefully, um, effectively change their lives. (Female, 6 months as Zumba® instructor)

The nurses made similar comments and discussed how education on sodium or label reading would be a great addition to the intervention. The nurses also felt that including a spiritual component would be helpful to the grandparents. One nurse commented,

> I think having ah, more of an emphasis or opportunity, to s-, to do intentional care of the spirit, to maybe help them foster whatever their spirituality is... help them foster, 'cause I I think in this particular group... the, the stress and challenges of what they're doing, I would imagine would be pretty amazingly difficult. And um, I, I it would be interesting to explore more their... their coping, their spiritual coping. If they have any... you know? And if they don't have any, why don't they? Would they be interested in some, you know? Um, so... I think a spirituality component and um, we tend to, we nurses tend to look at things holistically... the senses, you know? Even the sense of humor that a person has and their sense of spirituality, they're all such important senses to surviving and thriving in life, you know? So, I think a spirituality component could be expanded on, maybe…(Female, 33 years as a nurse)

The recreation manager also had suggestions for enhancing the intervention in the future. She commented on keeping the families active as a unit once the intervention is over. She stated,

> Add to the future um, probably I didn't say this earlier, but a way to transition people into mainstream recreational programming... and that's something we've, we've talked some about... and um, but how to f-, not formalize that process... but to transition... um, the families, um... in a more integrative fashion, which... I think is going to be interesting, but the only problem with that is that it will result in them, um, coming through the door and going different directions. And let, the, there are some experiences, um, whether it's ah, like a Mommy and Me type of swim class where they'll stay together or but otherwise, someone's a spectator. And so, that's the thi-, that's what I'm trying to incorpera-, how we can offer some family-style programs. (Female, 8.5 years as recreation manager)

The recreation manager also thought that clearly communicating to staff or who is helping to facilitate the program about the grandparents and their circumstances would be helpful. They commented,

> I think clearly communicating what the families will experience in a class. Um, you know, taking into account that, um, you know, it's important as to when the class is offered, you know, allow enough time peop-, for people to have dinner. Um… or come to the class, or ah, enough time afterwards... Um, just knowing that with li-, from little kids on up just um, being aware of what their needs are....whether it's close proximity to the restroom, or close proximity to parking. Or, um, the ability to have down time, um, you know we did not have any children in this group that had special needs. Um, but that is very much a possibility, and ah, in a class that's replicated, and how you, you know, how that can be addressed, you know, whether it's a quiet place for a child that is kind of overstimulated, or whatever, um, we didn't have to deal with that, ah, but that would be something just to take into account as well. (Female, 8.5 years as recreation manager)

Practicality. The professionals made numerous comments regarding the practicality of the intervention. Five themes supported practicality: using existing resources or circumstances, quality of the intervention implementation, barriers to participation, facilitators to participation, and effects on participants.

Using existing resources or circumstances. Lydia was the assistant exercise consultant who within the last 6 months started teaching Zumba® class. Her story is special because it was through diet and Zumba® that she lost over 100 pounds. Thus, many of the professionals commented on how she added value to the intervention by being a relatable testament to the grandmothers. For example, the leading instructor commented,

> ...and they [Lowe Center], I think they add value with, we have with Lydia is that, you know, they have a like perfect example that if you change your eating habits and your exercise habits, you can lose it. So, it was an added value. It was (Female, Zumba® instructor for 5 years)

The nurses supplemented the instructor's comment by adding that Lydia was a great role model for the grandparents.

The nurses also discussed how the grandparents themselves were an important resource and could help to spread the word about the program. One nurse commented,

> I would think that you would want, um, if you had a, one or two of the grandparents that [would] really pro- [promote]... you know [the] program. I would think that you would wanna use them in s-some [way], its good advertisements to talk to other um... grandparents, to get this program moving... you know, down the road (Female, 33 years as a nurse)

Quality of intervention implementation. As previously mentioned, the nurses commented on the project being thoroughly organized and the recreation manager stated how the intervention was well designed. In addition, the recreation manager also commented on why she felt the intervention was high quality. She stated, "...we were fortunate because we had a very dynamic lead instructor who could work through those issues of multi-, multiple generations in a class and, and I think that was challenging, but she effectively did that…"

Barriers to participation. The professionals commented on the barriers that affected their roles in the program as well as their perceived notions of barriers for the grandparents and grandchildren. The nurses said they could not think of any barriers that related to them enacting

their roles in the intervention. However, the recreation manager discussed how prospective obstacles came up, but they were effectively addressed,

> Well. Um, we did have an issue um, um a Zumba® instructor that um, was a, was an unexpected challenge or barrier that um, came up at the last minute... um, but we effectively worked through that issue and did the right for, thing overall for the initiative and ...and project. (Female, 8.5 years as recreation manager)

The instructors had many comments regarding barriers they experienced while implementing the Zumba® intervention. Many of their comments were about the challenges that a multigenerational class with diverse abilities encompassed. For example, the lead instructor commented about the diversity and instructing teenagers,

> ...the diversity of the group, we have different, you know... different kinds of families... We have some children that didn't want even to do anything at the beginning. And so, I was so glad that at the end everybody was doing it. You know? So, but at the beginning or like, eh, it was funny because like, I'm used to shake... you know, shaking my body... in my class... and when the first time I shake, all these teenagers laugh. Like... am I being silly or what? You know, so like, it was like, "Wow!" (Female, 5 years as a Zumba® instructor)

The lead instructors also spoke about the health challenges that influenced their instruction. One instructor commented,

> ...the other challenges were, some of the grandmas have some difficulties. You know, so like... you know so like, bad knees and some... other grandma that was having problems with the back... back and the hips. So... you know... too, it, it was challenging, 'cause you cannot do anything that would hurt [the] par-, participant.

Another issue the lead instructor discussed was the attention issues displayed by the children and the exhaustion the grandparents experienced,

> ...And then, and then, ah also, I think the time. I think... we chose for, for just one hour... but then you saw at the end we were doing like 45 minutes... Yeah, because definitely like by the end of the class, everybody's looking like... Uh huh.... you know like..."We don't want to do more." And, and it usually like, with the ah, with the ah, eh, older adult classes and the, and the kids classes they don't go more than 45 minutes. Because the elders get tired and the children's, their attention span... is you know, they, they like to do something, but if they get bored… they jump to another thing. So then, when we were doing one hour... you know like the last 20, 15 minutes of the class they were like doing whatever...

Facilitators to participation. The professionals commented on a facilitator that affected their roles in the study. Specifically, the nurses commented on the organization of the study. The professional also commented on the perceived notions of facilitators for grandparents. One of the exercise instructors commented on how the program allowing the participation of the whole family was a compelling component that facilitated participation. The recreation manager commented on the research process and how that might have affected the grandparents' participation level. She stated,

> Um, you know, the fact that, um, they do have busy lives that they could work this in, there probably were different motivators, but I think the one motivator we haven't really explored or talked about is the fact that they were a part of research... and that component that they were a part of something bigger than themselves, whether it was a part of ah, um generativity or...wanting to leave a lega- legacy or something, I'm not quite sure, but

that, I've, I've found really intriguing and to me that was shown because they kept coming...

Effects on the participants. The professionals provided information that related to the theme of the effects the intervention had on them personally and the perceived effects they felt the intervention had on the participants. The exercise instructor and the recreation manager commented on the improved attitude changes they saw among the grandparents and grandchildren regarding exercise. The quote below illustrates the recreation manager commenting on attitudes and health changes. Specifically, she said,

> ...I saw improved affect among the grandparents… um, and somewhat with the teenagers. The younger ones were just, lovely all the time, laughing, and happy, and bouncing off the walls, and a real delight. So... I didn't see a dramatic change in them. Um, they all improved their dancing abilities in Zumba® which, um, was wonderful and in my um, review of the biometric measures as it relates to, to, my limited review of the biometric measures and my anecdotal conversations with the grandparents, they all seemed very pleased that they, um, had either lost weight, had, had reduced, um, blood pressure to a more healthy um, range or were sleeping better...

On a similar note, a nurse commented on the health journals that were provided to the grandparents and grandchildren and how she noticed the kids being excited about health. She stated,

> I, I had an encounter with a little boy and it was like, he was so proud that he had his own little journal. So, I think that was great, that you gave the kids their own little passports to health too and that they could record their progress and even though he didn't change his weight, he did grow an inch. And, he was like so proud of that and he had me write it all

in for him and you know, that, that... you know, we didn't do a blood pressure on him 'cause he was too small, but s-still that… that's part of it all that they were, you know, learning... you know. "This is my record, this is me", you know, and, "I'm part of this!" (Female, 32 years as a nurse)

The lead instructor discussed how they felt the education experience within the intervention affected the families,

...but, but then you know they kind of learn and have fun with this, they did. You know? They did and then, kind of discover that it's, it's not only this is speaking English music... there is like, so much music out there…

Being part of the intervention had an effect on the professionals as well. According to the assistant exercise instructor, being a part of the program was a learning experience for her because she had never taught Zumba® to children. She stated,

For me it was a, a, a gr-, more of a great learning experience because I've never worked with children before... or had to put something together like this. So, I had no clue of a... um, the whole process... so working with Clair was a great learning experience, learning how you go through and you think this, that, the other thing to try to put it together…

The lead exercise instructor, Clair, commented because of her foot injury during the class, she had to learn to become a coach and teach Lydia how to instruct the class. Being part of the program was a learning experience for the nurses as well. One nurse commented,

...it made me wonder, um, as to whether, first of all, it opened my eyes even more to this situation with grandparents raising children. You know, and... 'Grandparents' Out', or, you know, it just got me thinking about, I wonder if this is something that can be parlayed? Or, talked about? And we do plan, when you give us, you know, s-, ah, like a

summary of things; we do plan on putting it in our newsletter and maybe even talking about it ah, with our nurses, just to plant a seed. In case, and get them thinking... like it's [the intervention] got us thinking... (Female, 33 years as a nurse)

Integration. Quotes from the professionals supported themes, such as perceived fit with the organization and perceived sustainability in the domain of integration.

Perceived fit with the organization. In regards to integration and the intervention being a good fit for the Lowe Center the nurse stated, "Well, I'll tell you, I thought, I thought it was great doing it where you did it because, I think the Lowe Center is very receptive to offering things that people want..." The recreation staff member concurred suggesting that the intervention could be easily integrated into the Lowe Center; the set-up is essentially no different from the programs they already offer. Specifically, he commented, "I think, this event from my perspective, materially, isn't any different than setting up for a talk on, the ins and out of condos, or a journaling class, it's all... part of [it], comes with the territory..." (Male, 1.5 years as recreation staff member)

Perceived sustainability. All of the professionals had different, but relevant, perceptions on how the intervention could remain sustainable. The lead recreation instructor discussed how Zumba® as an exercise dance craze has remained popular over time because it does not feel like exercise. It feels like a party, thereby keeping the participants interested. Thus, she suggested that the program will be sustainable as long as Zumba® is popular. In contrast, the recreation staff member commented that sustainability was dependent on the participants. Specifically, he said,

I think it's a, ah, function of the participants. Like, any sort of exercise program that we have that continues for a long duration forms, like, a, a core group of diehards who, have incorporated it into their daily routine, and it, it becomes like second nature. And every

> once in a while, you know, there might be five or six people each month, maybe more or less, but...who come in and, they're once and done. Or, maybe they come in once a month. There's a lot of people who just come take the class once and leave. But, every once in a while you'll catch somebody who's, you know, someone like Lydia [assistant instructor], who's like, really committed. So, it's just, I guess a function of reaching...

The recreation manager believed that two important aspects of sustainability were the instructor and finances. She stated,

> Well, I think it [sustainability] has to do with, um, working with an instructor who's willing to teach a large multigenerational group f-for a reasonable price, and then seeing what the families can, what they can um, provide financially. If it's four dollars a class, five dollars for entire family... if you have enough families, that, that could make it worthwhile. But for the sustainability, it's really providing a safe location and finding a certified instructor who would, um, be willing to teach based on those in the class… paying for the class. That's a, a critical point with ah, exercise class' sustainability. (Female, 8.5 years as recreation manager)

Similar to the recreation manager, the nurses had similar sentiments. One nurse commented,

> ...and hopefully they [Lowe Center] can figure out a way to offer it in the future, I mean, a lot of times stuff comes down to one, having somebody to lead it. Yeah... and, and two, making it feasible, you know, money-wise… (Female, 33 years as a nurse).

The recreation manager also commented on how a program curriculum would need to be created to make the program easily replicable for the community stakeholder. She commented,

> ...um, that to ensure that this program is considered for replication at, at the community level... then, um, it would be important to create a programmatic, um, and a fiscal

blueprint of what it would look like. Something very easy to follow, um, you know, step by step, whether it's recruitment, selecting an instructor, what to look for, but something that was more how-to, more simplified, um, and um, some guidance on how to track biometrically, if, if someone might be interested in that, um, but just that, um, that true br-, ah, programmatic blueprint, um, how to replicate. I think the research component is so fascinating and intriguing. But, I think someone at the community level could get lost in it and feel overwhelmed. How," I could never do this" it's you know... “Too many moving parts, too complicated", but something that was very simplified, I think would be very beneficial. (Female, 8.5 years as recreation manager).

Chapter Five:

Discussion

Overview

This study was designed to examine the process and feasibility of an intergenerational community-based participatory program with a focus on physical activity for grandparents raising grandchildren. Based on information from the observational notes, community recreation centers and support service organizations helped to recruit the most enrollees for the program. Documentation in the attendance records indicated that the majority of the participants attended at least 10 classes. The fidelity checklist and observational notes provided evidence of the fidelity of the intervention. During the classes, the grandparents were completely engaged; however, the grandchildren's attention sometimes waned, and their mobile devices often distracted them. Health emerged as a barrier for some of the grandparents, and the intergenerational nature of the program was a facilitator for others. The last domain of process, context, illustrated the complex family lives these grandparents navigate and the effects it has on their health. Indicators of context also illustrated the recreation staff and manager's dedication to ensuring the intervention was implemented accordingly.

Quantitative and qualitative measures of feasibility suggested that the program is feasible for future implementation in this community with this population of grandparents. The indicators of feasibility were the demand for the program, its perceived appropriateness, and the satisfaction with the program expressed by the grandparents and professionals. Grandparents initially noted time accommodation, childcare, and social support as facilitators to participation,

and they identified health and interpersonal barriers as possible deterrents to participation. At the conclusion of the intervention, the grandparents only cited health issues as a constraint. However, many grandparents overcame their health issues and found ways to attend and participate in the sessions. The commitment the grandparents made to themselves, the research, and their grandchildren was found to be a motivator for the intervention. Another motivator cited was the social support the adults received during their involvement in the intervention. Results illustrated that some of the grandparents met their physical health goals and noted social support and mental health benefits as well. Indicators of the adults' physical and mental health measured at pretest, midpoint, and posttest demonstrated trends for improved function, indicating promising efficacy for future implementation.

The professionals also commented on the practicality of the intervention. They felt that the assistant instructor added value to the program because of her own health journey. Nurses described the organization of the study as a facilitator for participation. The grandparents and professionals discussed the valuable lessons they learned while participating in the intervention. The only challenge discussed by these stakeholders was that the diversity of functional abilities and the intergenerational nature of the class posed a challenge to planning and instructing the class. Overall, the professionals believed that the program was a good fit for the Lowe Center, but that sustainability of the program in the future would depend on the finances, the participants' will, the exercise implemented, and instructor's skillset. Through the utility of process and feasibility frameworks, the researcher's observations, and the grandparents' and professionals' perspectives, a nuanced and detailed understanding of the implementation and efficacy of an intergenerational physical activity program has been provided.

Process

Recruitment. Participants were recruited from multiple community organizations. The most fruitful recruiting sites were a small youth recreational center and kinship services. The researcher had built a relationship with the center over the past two years; this may have contributed to its potential as a recruitment site. For example, the researcher facilitated an intergenerational training with the director and other community members as well as attended the center's events.

The kinship provider had a prior relationship with the University's School of Social Work. In addition, the researcher had met and discussed the research project with the director of the organization at an international conference. Hence, when it came to recruiting participants, the organization was familiar with the researcher and her goals. The researcher was told that the kinship family workers actively recruited for the study by providing the families with flyers and a description of the intervention. Despite this effort, this method did not provide any participants. It was hoped that kinship services would provide the researcher with the names of potential participants; however, privacy laws negated that possibility. In future studies, it may be beneficial to contact the funding agency of kinship service providers and form a partnership. Convincing the funder that the intervention aligns with their goals of serving kinship families would be necessary and would hopefully facilitate stakeholder buy-in. Furthermore, creating a mutually beneficial partnership may negate issues related to access to caregivers' contact information for recruitment purposes.

Kinship services did allow the researcher to attend kinship caregiver support meetings. When compared with other recruiting methods, these meetings highlighted that the researcher was the best advertiser of the program rather than relying on a "third-party" to recruit. This

allowed the possible participant to hear about the program directly from someone who was passionate and deeply knowledgeable about the program, and who they would be working with throughout the study. At each meeting attended by the researcher, the grandparents seemed receptive to the program. Even if the grandparents were not able to enroll in the study, they commented that there was a need for such an intervention. Meetings with gatekeepers, church leaders, and other recruitment efforts were not as fruitful because the researcher did not have direct contact with the grandparents.

Another issue that possibly interfered with recruitment was that the initial set of flyers did not include information about participant compensation. The city was concerned about the original wording of the compensation not being descriptive enough. However, the researcher had to comply with IRB standards and not overtly advertise the compensation. Once the researcher realized that the lack of compensation information on the flyer might be affecting recruitment, the flyer was revised. Towards the middle of recruitment and with the help of IRB, the city and the researcher were able to reconcile their differences and find the appropriate language to place on the flyer. To maximize future recruitment efforts, these types of reconciliation processes should take place prior to recruitment.

Dose delivered. In regards to dose delivered, information from the fidelity checklist illustrated that the instructors were successful in consistently providing the majority of the intervention components (92%) over the 16 sessions. However, explanation of the exertion chart was only carried out 38% of time. The exertion chart is important in helping the older adults monitor their activity and exertion level while exercising to reduce the probability of injury. Hence, it was necessary that older adults be consistently reminded of the presence of the chart. While the instructor did not discuss the chart regularly, the chart did remain posted in the

exercise room and was visible to the participants while exercising. Furthermore, the instructor did have the grandparents modify dances to fit their abilities, and she would communicate to the grandparents about the importance of breathing and taking water breaks. All of this advice had the ability to reduce injuries as well.

Fidelity. The observational notes corroborated information provided by the fidelity checklist regarding the implementation quality of the intervention. The observational notes illustrated how encouraging and supportive the instructors were to the grandparents and grandchildren during and after the sessions. After class, the instructors would have group and individual conversations with the grandmothers about their personal journeys and commitments to exercise and nutrition. The instructors in general were well received by the grandparents and nurses. The professionals made positive comments regarding the quality of the intervention. In particular, the recreation manager felt that the high quality of the program was a result of the instructors and their dynamic ability to work with older adults and children.

The researcher made many observations regarding the intergenerational component of the intervention. According to the fidelity checklist, the intergenerational component was carried out 94% of the time. However, there was not a diversity of intergenerational activities, the intergenerational component only consisted of a handclapping dance. The researcher did not want to interfere with the instructor's creativity; therefore, the researcher only explained what intergenerational action meant and left the planning to the instructor. In addition, the researcher felt comfortable with the instructor planning the intergenerational interaction because the instructor disclosed that she had prior experience instructing an intergenerational Zumba® class where she incorporated various activities. The researcher had an expectation there would be

diverse intergenerational activities because intergenerational interaction was the foundation of the intervention.

Although a diversity of planned intergenerational interaction did not occur, natural unplanned intergenerational interaction did occur. The researcher noted many instances of "co-learning" throughout the program. In the case of this study, the grandparents often taught the grandchildren how to carry out dance steps and the grandchildren reciprocated that behavior as well. Generativity and SCT may best explain the mechanisms behind the intergenerational interaction. It is possible through generativity and dancing that the grandparents are sharing and leaving a legacy with the youth. SCT may be an additional explanation of the interaction. More specifically, through reciprocal determinism, the interplay of the intergenerational dance environment and the relationships between the grandparents and grandchildren may promote sharing and teaching behaviors. It can be hypothesized that through these behaviors, the grandparents and grandchildren are able to capitalize (e.g. improved health outcomes or increased socialization) on the reciprocity of intergenerational interaction. Understanding the mechanisms of the interaction in the program further enriches our understanding of the intervention's processes.

Dose received. During the intervention, the grandparents were engaged 100% of the time in the exercise class. Even the grandparents who had health issues still found ways to participate by adapting their movements. For example, one grandmother exercised standing up for the first half of the class, and then she would sit and continue the exercises in her chair. This example fits well with the SOC framework. She had issues with her knees related to arthritis; therefore, she compensated by adjusting the Zumba® moves to her abilities and the environment. She optimized her exercise level while standing for the first 30 minutes, and then utilizing a chair but

continuing to exercise and sing along with the other participants for the remainder of the class. Her modification illustrates different components of the SOC model and how older adults' adapt to age-related gains and losses by managing their behavior or environment (Baltes & Baltes, 1990).

The grandchildren were engaged in the class the majority of the time. However, there were a few instances when their attention lagged or was focused on their electronic devices. One way to mitigate these diversions would be to incorporate familiar songs and dances as well as more interactive components into the intervention. Line Dancing was the second choice of the grandparents, and the researcher asked the instructor to include songs and dances appropriate for Line Dancing in the intervention. This inclusion proved to be a worthwhile addition; all of the adults and kids danced and exerted more energy in their dance moves during these times. The handclapping dance and the mock Carnival that included dancing with the entire group in a circle with instruments also elicited a positive and similar response to that of the Line Dancing. The incorporation of the Line Dancing was a byproduct of the CBPR approach and the understanding that everyone's input is important and should be represented in the intervention as much as possible. The fact that the participants were excited by the interactive components of the intervention illustrated the general importance of, and desire for, interpersonal interaction among all ages.

Context. The process evaluation enabled the researcher to consciously capture the context of the intervention's implementation and its effects on the participants' outcomes. Results from this study revealed that the social and facility factors were the two main influences. For example, one grandmother's pregnant daughter was hospitalized over the course of a few weeks, and another grandmother's daughter unexpectedly removed the grandchildren from her

custody. We were able to observe the effects of these circumstances on the grandparents because the circumstances occurred near the health assessment periods. In both cases, when comparing the results with their previous assessments, the current assessment illustrated that the grandparents' physical and mental health were negatively affected by these events.

The facility influences theme explained the actions of the recreation staff during the program. First and foremost, they met their predetermined obligations in facilitating the study; however, they went beyond their assigned roles. For example, the staff assisted the researcher in assessing balance and reserved parking for the grandparents during special events at the center. Without the assistance of the facility staff, the intervention may have seemed disorganized. Assessing the context of the intervention reinforced the reality and consequences of the dynamic lives the grandparents led, which further emphasized the need for this intervention. The involvement of the facility in this program illustrated how solid partnerships that demonstrate commitment and creative problem solving are necessary for the successful implementation of a community program.

Feasibility

Demand. Grandparents and professionals both identified a demand for intergenerational physical activity programs. The grandparents unanimously illustrated this demand in the focus groups and survey questions. The majority of the professionals (87.5%) felt the same as the grandparents. However, the recreation staff member acknowledged that he did not believe these types of programs are needed. His reasoning stemmed from the operative word "*need*", which precluded him from answering yes to the question. In a subsequent open-ended question on the survey, he commented, "I believe they [intergenerational programs] can be highly beneficial for the families involved and to the community as a whole, but I would not regard them as a

necessity." His reasoning can be further explained by his admission that he was not familiar with the issues related to grandparents raising grandchildren. Illustrating the need for a program from various stakeholders has significant implications for program sustainability and has potential effects on the individuals' future participation.

Acceptability. Many of the grandparents considered the grandchildren's desires when deciding what activity to choose for the intervention. This behavior is not novel because the literature has illustrated that grandparents typically focus on the grandchildren's needs and desires (Hughes et al., 2007), even if this leads to neglect of their own wants and interests. Therefore, it is not surprising to find that these grandparents prioritized the children's leisure activity choices above their own. However, some grandparents chose the activity that was most familiar to them and suited their personal interests. In the end, Zumba® was the program chosen; however, Line Dancing was discussed as a second option by many grandparents. The researcher was cognizant of the expressed interest in Line Dancing; thus, to ensure the intervention was enjoyable, inclusive, and participation was maintained among all of the participants, the researcher asked the instructor to incorporate aspects of Line Dancing in the intervention. As documented in the process evaluation, integrating Line Dancing proved to be worthwhile as the grandparents and grandchildren were overwhelmingly responsive to, and generally excited about the elements of Line Dancing that occurred during the intervention.

In general, all of the participants noted satisfaction with their experiences in the program. The professionals and grandparents all rated their experience as excellent. However, the professionals and grandparents did provide specific suggestions for ways to enhance the program. Grandparents felt that changing the music every couple of sessions would make the class more exciting, especially for the children who typically learned the dances faster than the

adults. Another grandparent expressed a desire for an intentional focus on social health. For example, she discussed forming a social club where the grandparents and grandchildren could go on outings together. One nurse felt that a spiritual component would enhance the program. She commented that intentional care and focus on the adults' spirit might help the grandparents cope with the stressful circumstances that surround kinship care. The recreation manager felt that communication with the recreation staff about what family dynamics to expect as well as planning for the integration of the families into traditional recreational activities once the intervention ended would be beneficial additions. Although the stakeholders' suggestions emerged from their respective personal and professional lens, these comments were relative to the intervention; thus, the suggestions can serve as the gateway to create a more holistic and sustainable program for this population.

Practicality. In the first focus groups, making time, childcare, and social support were mentioned as possible facilitators to engaging in physical activity. The community-based participatory component addressed the time factor because the grandparents were able to tailor the program to their availability, and the intergenerational dynamic negated the need for childcare. The grandparents mentioned social support as a motivating factor to exercise in the development focus groups. The role of social support as a facilitator was illustrated during one of the follow-up focus groups. One of the grandparent's discussed how she and her good friend, Ms. Jane, were involved in a friendly competition during the program. They wanted to see who could attend the most sessions and achieve the best health outcomes. It was apparent that their friendship had an impact on their attendance. Out of the 16 sessions, one grandmother attended 13 classes and the other attended 11. Social support is commonly cited in the research literature as a motivator to engage in exercise (Elavsky et al., 2005; Litt, Kleppinger, & Judge, 2002).

Therefore, it was not surprising that these grandparents noted it as a motivator during the current study.

In the follow-up focus group, the grandparents mentioned a host of factors that kept them motivated to attend the intervention. The grandparents discussed attending for the recreation pass; they also commented that they attended so as to not disappoint their grandchildren. The family orientation of the program is what facilitated one grandparent to attend. Support for this was also noted in the researcher's observational field notes. The grandparents suggested that their continued participation was because they did not have to worry about childcare – everyone in the family could participant in the program. The inclusion of the intergenerational component was beneficial because it allowed grandparents who otherwise might not have the opportunity to exercise, and this possibly contributed to the low attrition rate of the grandparents.

Another facilitator for many of the grandparents was the opportunity to be a part of something beyond themselves. Understanding that this research was actually a dissertation project for a PhD student, the grandparents mentioned that they consistently attended the program to support the researcher's educational endeavors. This was an interesting finding considering the recreation manager actually mentioned in her interview that she felt the research component – the opportunity to be a part of something beyond themselves – was a facilitator for their participation. The phenomenon that the recreation manager was referring to, and the grandparents were expressing, is related to the concept of generativity. Generativity occurs when older adults engage with youth or younger generations through nurturing, teaching, or mentoring, and the goal is to give back to society and create a lasting legacy (Erikson et al., 1986). As mentioned in the literature review, the mechanisms underlying intergenerational interaction are not well understood. However, the example above illustrates how generativity may help to

explain older adults' participation in intergenerational programs and the underlying mechanisms that promote its positive outcomes. In the case of this intervention, the commitment to the researcher and the grandchildren is what kept the grandparents engaged, which likely increased the probability of the intervention being successful. Because of their continued involvement, individually, some of the adults were able to benefit from the program in a variety of ways including weight loss, improved balanced, and reduced blood pressure and heart rate.

This finding illustrates that in addition to tailoring the intervention to the grandparents' needs, desires, and schedules, a potential aspect of maintaining older adults' participation is to include a generative and meaningful component. Through the generative process, grandparents might become more cognizant of their overall and needs; this was certainly the case in this study. Grandparents commented that they were getting back to their old selves, beginning to regularly take their medication, and some noted finally realizing how meaningful exercise can be in their lives. Thus, having a generative aspect to the intervention may be beneficial. Through the focus on others, grandparents may unknowingly reap the benefits of the physical activity intervention.

Also related to practicality, the grandparents commented on potential barriers to attending class. The majority of the grandparents' comments were health related. Grandparents commented on specific ailments that might prevent them from exercising or attending class. One grandmother made comments related to intrapersonal barriers such as "disliking sweating" or "being lazy". In the follow-up focus group, sickness and health-related problems kept some of the grandparents from actually attending class. The death of friends and family members was also a barrier to participation. The observational notes from the process evaluation detailed how the grandparents' work and social schedules sometimes precluded them from attending class.

However, many grandparents continued to attend class in spite of their life circumstances and health problems. On one occasion, it was very noticeable that one of the grandparents was experiencing hip pain. The researcher discussed with her that it would be best if she just sat and watched; however, she responded with "I just gotta get up and dance, I can't help it". One grandmother went to Georgia to attend to issues related to her elderly mother. Prior to class, she exclaimed how she had rushed back into town so she would not miss class. The observational notes from the process evaluation acknowledged the various barriers to participation the adults' encountered as well as the dedication of many grandparents to continue attending class despite these situations. Hubbard and Mannell (2001) suggest that the grandparents' ability to participate might be related to negotiation strategies mediating the relationship between their participation and constraints. Negotiation strategies are plans or tactics (e.g. coordinating time better, modifying activity, or engaging in activity with friends coordinating time with others) that are used to overcome or modify constraints to leisure activities (Hubbard & Mannell, 2001) . In a sample of adults age 50 and older, Kerstetter, Mowen, and Son (2008) found that negotiation strategies and constraints were associated when motivation was introduced into the model, such that an increase in motivation levels to participate in physical activity led to an increase in negotiation strategies and frequency in physical activity. Hence, another reason the grandparents might have continued their engagement in the program was because of their motivation to participate. Clearly, maintaining motivation and being able to enact negotiation strategies can supersede obstacles that might be present.

Comparing the grandparent's comments regarding their expectations from the first focus groups to the actual outcomes at the conclusion of the study was enlightening. Many of the grandparents reported goals of losing weight and becoming more physically fit. However, at the

follow-up focus group, the grandmothers commented on the mental and social benefits they received from participating in the intervention, which was supported by the quantitative health measures used in the limited efficacy testing. Due to the small sample size of the program, the study was not able to determine significance among the health outcomes; therefore, the results of the limited efficacy testing were interpreted with caution. However, the data showed positive trends toward improvements in many aspects of the older adults' health. Over time, the groups illustrated improved trends in their blood pressure, heart rate, and balance. Using a *t*-test, planned comparison analysis illustrated a statistically significant decrease in depression from time 1 to time 2. Hrostowski and Foster (2010), reported similar significant findings in their year-long intervention; thus, it is possible for older adults involved in kinship care to benefit from physical activity interventions. Their study also found that grandparents reported an improved sense of happiness and overall wellbeing, which was supported by their MCS and CES-D 10 scores. These findings align well with the current research study and suggest that improved affect and wellbeing are related to increases in physical activity. Engaging and socializing with peer grandparents has also been cited as an outcome to participation. Research has indicated that socialization is a component of exercise interventions that older adults enjoy (Mahmood et al., 2012; Strand et al., 2013), and as described in the previous section, it is often a facilitator to participation (Chang, Wray, & Lin, 2014).

Learning about self-care emerged as unexpected outcomes of the intervention during the focus groups. The grandparents reported that they learned to take better care of themselves as a result of the program. For example, one grandparent reported learning that doing daily errands was not exercise and that she needed to engage in more intense activity. By gaining access to a

recreation center through the use of their Family Recreation Pass, hopefully these grandparents will remember these lessons learned and use this knowledge to achieve their health goals.

The professionals also noted some lessons learned from this program. In the focus groups, the nurses stated how they became more immediately aware of the stresses and joys of kinship care through their involvement in this study. They vowed to inform other nurses about the issues facing kinship caregivers and their families. The hope is that the nurses will follow through with this promise to discuss the issues facing grandparents and grandchildren with colleagues and incorporate a kinship agenda in their volunteer mission. The assistant physical activity instructor discussed how she learned to simultaneously coordinate an exercise program for older adults and children, and the lead instructor disclosed that she learned how to coach the assistant instructor when she was sidelined with an injured foot. It was apparent from the focus groups that the instructors both saw the value in these intergenerational programs; hopefully, they will continue to offer this type of class in the community.

Only the nurses mentioned a facilitator to their participation in the study. As discussed in the section on satisfaction, they commented that the strong organization of the program helped them to carry out their role in the intervention. The nurses did not report any barriers to their participation. The recreation manager acknowledged experiencing a barrier during the development phase when Zumba® instructors were switched. However, she also discussed how this issue was successfully resolved and, in the end, turned out to be the best decision for the overall project.

In contrast, the instructors mentioned several barriers related to the difficulties of instructing an intergenerational group. Particularly, the diverse physical abilities and the children's attention spans were challenging for the instructors. The researcher's observational

notes supported the instructors' comments and captured the children's attention issues. These barriers are not uncommon to intergenerational programs. When implementing a creative dance program with older adults and children, Rossberg-Gempton and Poole (2000) reported that attention and diverse physical abilities emerged as problems. In their article, the researchers provided strategies to help mitigate these issues. They suggested pacing the dances in the beginning, and then once everyone is familiar with the tempo of the class, alternate the moves to address attention problems with the children. For example, the youth might be instructed on how to do a more flexible or exaggerated rendition of the dance the older adults are doing. According to the authors, this would allow the older adults to feel capable while at the same time provide a challenge the children. To deal with attention span issues, the authors also suggest using a catch phrase to get the children's attention, like "lights, camera, action", or engage in silent gestures such as the "silent no" head shake. They also suggest standing and dancing next to the child that is unfocused and possibly even asking him or her to help instruct the class. During the developmental stage of future programs, these approaches can be shared with the instructor to empower the youth and grandparents and reduce the number of distractions. Furthermore, these strategies can be incorporated into the fidelity checklist and potentially increase the quality of program implementation.

Integration

A key factor prior to integrating a new program is to understand its perceived fit with the organization. In this study, the professionals believed that the facility location of the intervention was appropriate. More specifically, the nurses' comments illustrated that the perceived success of the program was due to the center being receptive and open to programs for children and older adults. Furthermore, according to the recreation staff member, the program set up was no

different from any other programs offer by the facility. Therefore, there were no seemingly additional burdens to the center hosting the program. When a program fits the needs and abilities of the organization, this allows more attention to be focused on program implementation and less time spent determining the logistics of staff issues, accommodations, set-up, etc.

Sustainability is also related to integration. At some point during the life cycle of a program, the organization typically has to address questions related to sustainability. Often times, financial and staff resources preclude the sustainability of many community programs; however, there are many moving forces involved in program sustainability. The goal of this study was to understand how this program could be sustained over time from the perspectives of various stakeholders. The first step in understanding sustainability is determining if there is a continuing demand for the program. In the follow-up survey provided to the grandparents, 100% of the grandparents reported that they would like to participate in future intergenerational physical activity programs. In the follow-up focus groups, the professionals provided very diverse perspectives regarding sustainability. The instructors felt that sustainability would be a function of the exercise and the atmosphere and feeling it cultivates. The recreation staff attributed future sustainability to the program finances and the availability of an instructor with the ability to teach both grandparents and grandchildren. The idea that sustainability is about reaching the participants and their determination and motivation to participate was mentioned as well. In assessing stakeholders' perceptions of the sustainability of a falls prevention program, Hanson and Salmoni (2011) also discovered a diversity of views and used them to develop recommendations to help organizations and stakeholders work toward the sustainability of future programs. Some of the recommendations they suggested like create a plan for sustainability during the program planning period; draw upon the skill sets and perspectives of multiple

community stakeholders throughout the life cycle of the program; and encourage neighboring organizations to financially support components of the intervention that meet their mandates are applicable to this program. Similarly, communities considering intergenerational physical activity programs can use the results from this study to start a conversation about the sustainability of their program.

Limitations

It is important to mention the limitations of this study. First, the sample size is small; therefore, the study lacked the statistical power to conduct empirical statistical analysis and confirm the efficacy of the intervention. Another probable issue is that depression, overall wellbeing, physical activity appraisal, and survey questions were all self-reported and could have been influenced by social desirability in reporting. In addition, the study could have been affected by testing effects that often occur during repeated measurement. In this study, the participants responded to similar questions during three time periods of the study; through that experience, they may have become aware of the purpose of and constructs related to the assessments. This awareness, in addition to being influenced by social desirability, is what may have led to the trending improvements seen in the self-reported measures of health. However, objective measures of health were also used in this study, and positive trends were noted in these assessments.

The study only had one researcher to collect observational data. Therefore, it was not possible to determine the inter-rater reliability that typically occurs in observational studies to increase confidence. However, the systematic observational tool and fidelity checklist focused the researcher's observations. The validity of the observation data was increased because it was triangulated with data collected from other methods as well. For example, the observational

notes mentioned that the grandchildren had issues focusing on the exercises throughout the duration of the class. In the follow-up focus groups, the instructors acknowledged the children's waning attention spans and how it was a challenge at times to refocus the grandchildren. Another plausible limitation stems from the use of focus groups. Focus group discussions can be dominated by particular people and simultaneously suppress the voices of other group members. However, during the focus group facilitation in this study, the researcher made attempts to hear the perspectives of every individual in the group.

The exploratory and non-random sample technique employed in this study prevented the researcher from making causal and generalized statements. Essentially, this is an in-depth descriptive study in which the findings are limited to grandmothers raising grandchildren in a coastal city in the Southeast United States. Even though the sample is reflective of the gender make-up of the kinship population, the fact that the study sample was all female is an issue. Although fewer in numbers, there are grandfathers who are raising their grandchildren and they experience similar health concerns to those of grandmothers (S. R. Kolomer & P. McCallion, 2005). The present study does not address whether grandfathers could benefit from an intergenerational physical activity intervention, but it is appealing to speculate that they may benefit. It would be worthwhile to better understand grandfathers' needs and wants as well as their perspectives of the benefits and challenges related to participating in the intervention.

Although this was an inclusive study that included the views of multiple stakeholders, the grandchildren's health assessments and evaluative voices were not captured due to time constraints and limited research personnel. The grandchildren were integral stakeholders in this study, and their presence and behaviors influenced the intervention. Therefore, in future studies it would be wise to include the grandchildren in the intervention development and evaluation

processes to obtain their buy-in as stakeholders. This would increase the probability that their presence and actions would affect the program in a positive manner.

Contributions

Although this study does have some limitations, it is important to note that it is novel because it employed an intergenerational and CBPR approach. Although many research efforts have focused on the health of kinship caregivers (Kelley, Whitley, & Campos, 2010; Kelley et al., 2012; Kicklighter, Whitley, Kelley, Lynch, & Melton, 2009; Kicklighter et al., 2007), there is a paucity of literature on intergenerational physical activity interventions in the kinship population. Furthermore, there is a lack of published intergenerational studies that employ the CBPR approach and include the diverse perspectives of stakeholders. This study addresses these gaps through the implementation of a physical activity intervention where grandparents and grandchildren exercised together. In addition, the study was developed and evaluated based on the diverse perspectives of the community stakeholders and grandparents as well as the professionals involved in the study.

Although the benefits of intergenerational programs have been cited over the years, there has been a more recent inquiry into the mechanisms behind the programs and their feasibility in various contexts. This study aids in understanding the dynamics and nuances of intergenerational interventions through the use of process and feasibility frameworks, which can enrich intergenerational theory and practice. More specifically, process and feasibility data from this study can help to identify the interworking of intergenerational interactions, contribute to theory developments, and link processes to outcomes. In addition, the study can essentially serve as a guide to aid practitioners in adapting and implementing similar intergenerational programs that engage community members and stakeholders to address community needs. Lastly, this study

illustrates how the researcher's commitment to the community, as well as strong community partnerships and relationships solidified through the CBPR process, can contribute to the successful implementation of an intergenerational community program.

Future directions

The intervention could potentially be enhanced in a variety of ways. First and foremost, it is important to include the children in the development, intervention, and follow-up phases of the research study. More specifically, it is imperative to understand their needs and the type of intergenerational programming preferred from their perspective. Also, it is important to gain the children's buy-in, which may result in better outcomes and maintenance of their participation. As discussed in the literature review, the grandchildren have health issues that also may be mitigated through the intervention's physical activity; however, the only way to know if an effect is occurring is through the measurement of social, mental, and physical health indicators. It is important to evaluate their level of satisfaction and understand the challenges and benefits associated with their participation as a means to improve future implementation.

The grandchildren's attention span might be an issue in future programs as it was in this study; therefore employing creative data collection methods may be helpful in this regard. For example, in this study the grandchildren were provided with their own health guide that included youth-friendly health facts and a space for the nurses to record their height, weight, heart rate, etc. The grandchildren were excited about having their own health guide and were curious about the meaning of various indicators; one of the grandchildren asked what BMI meant. These guides kept the grandchildren engaged while they waited for the nurses to complete the grandparents' assessments.

Additionally, to assess satisfaction, researchers may want to use a creative data collection method such as participatory drawing. Participatory drawing is a visual research data collection method that obtains non-textual information through image making. Known for its benefits in children's therapy, it can be applied in research to obtain the perspective and narratives of individuals who have been silenced, overlooked, or lack the ability to verbally express themselves (Literat, 2013). Creative methods similar to participatory drawing are inexpensive and would allow the researcher to capture evaluative information from children and adolescents in a manner that would hold their attention.

Grandparents and grandchildren may also benefit from the addition of a nutrition, stress, or spiritual component to the intervention as a means to holistically address the health of these participants. Previous research (Bigbee et al., 2011; Kelley, Yorker, Whitley, & Sipe, 2001; Kicklighter et al., 2007) has implemented multimodal interventions with kinship caregiving grandparents with success. The translation of these multifaceted interventions in an intergenerational context can be a time and cost effective way to positively affect the lives of entire families.

Conclusion

The goal of this study was to elucidate the process and feasibility of implementing a physical activity intergenerational program for kinship families using CBPR as a guiding approach. The results provided a detailed view of the interworkings of the intervention from the beginning to the end of the study. More specifically, the results illustrated that there is a demand for intergenerational programs and the potential efficacy of these programs to improve health outcomes. Although there were suggestions for improvements and barriers noted to participation from all participants, stakeholders' commitment to the study was the key to the successful

implementation of the intervention. The commitment and engagement garnered from the participants was the result of an inclusive and responsive environment created through the CBPR approach.

The information offered in this study can enrich the work of researchers and community practitioners. It can help researchers clarify the mechanisms that may facilitate intergenerational interaction and outcomes. Practitioners can begin to adapt similar programs in their community by learning from the various domains of process and feasibility. In addition, researchers will hopefully appreciate the added value of capturing the voices of multiple stakeholders in a research study, and practitioners will appreciate the added value of incorporating frameworks and rigorous research methods into their work.

Attention to these findings and the future directions suggested are likely to help researchers and practitioners better understand the nuances of developing and implementing interventions that address the health challenges kinship families face. Hopefully, this study will assist researchers, community organizations, and practitioners with successfully garnering and using community energy and resources, as well as familial connections, to develop, implement, and sustain effective intergenerational community programs.

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APPENDICES

Appendix A: Phase 2 Observational Tool

Observational Tool

Date: _____ Session#: _____

Time started: _____ Contacts Involved:_____

Time ended: _____

Location: _____ #GP_____ #GC_____

Directions: Describe individuals, settings, situations and behaviors that you observed. Describe organizational, community, social, or political issues that could affect the program's implementation. Also, detail reflections after observations are written.	
Descriptions	**Reflections**

Appendix B: Grandparents Phase 1 Focus Group Protocol

Grandparent Focus Group Facilitation (phase 1):

Questions	Follow-up Questions
Opening Question	
1. Please tell us your name; and what is your favorite song you like to dance to?	
Introductory Questions	
2. In general, how do you feel about exercising?	
3. In general, what motivates you to participate in physical activity?	a. If you are not currently motivated, what do you think would motivate you to participate in physical activity?
Key Questions	
4. How often do you come to the North Greenwood Center by yourself or with friends? What activities do you engage in while you are here?	a. If you do not come to the center, why not?
5. How often do you come to the Center with your grandchild? What activities do you engage in at the Center?	a. If you do not come to the Center with your grandchildren, what are some reasons you do not?
6. Are there any activities that you definitely do NOT want to participate in? If so, why?	a. What are some physical activities that you do NOT enjoy?
7. (*I will show a 30 second video demonstrating each of the following activities)* After watching the videos, which activities would you like to engage in? What about these activities interests you? a. Zumba® b. African Dancing c. Line Dancing	a. Please tell me what makes you interested in that particular activity?
8. What factors will encourage your participation in physical activity here at the North Greenwood Center?	a. What are the best days & times for the program? b. Are there any other factors that might keep you from participating? If so, what are they?
9. What can I and the recreation staff do to make you want to participate in the activity?	a. How can we meet your needs to allow you to participate?

	b. How can we make participation for you easier?
10. When participating in the dance exercise, what would be an important goal that you would like to accomplish?	a. What type of physical health goals, relationship goals, mental health goals, or any other type of goals would you like to achieve while participating in this physical activity program?
Ending Questions	
After providing a summary of the responses *provided in the focus group ask...* 11. Did I correctly describe everything we talked about?	
12. Are there any additional comments anyone would like to make?	a. Would you like to make comments about the proposed activities or topics we talked about?
13. Are there any additional questions?	a. Any questions about the proposed activities or topics we talked about?

Appendix C: Grandparents Phase 3 Focus Group Protocol

Grandparent Focus Group Facilitation (phase 3):

Question	Follow-up Questions
Opening Questions	
1. Please state your name; and note what was the most memorable moment of the program for you?	a. Think about something you saw, learned, or someone said that might be memorable.
Introductory Question	
2. What are your thoughts about exercise after attending the exercise program?	a. Have your thoughts about exercise become more positive, negative, or both? How?
Key Questions	
3. How has being a part of the exercise program affected your overall wellbeing?	a. Have you noticed any changes in your health and/or wellbeing (physical, mental, social)? If so, what has changed?
4. What has the experience of being a part of the development of the program been like?	a. How does it feel to help identify a program, participate in it, and then evaluate it afterwards? b. How has the experience of being a part of the development of the program affected you personally? c. How has this experience affected your participation in the physical activity program?
5. If you did not attend all of the classes, what were some of the reasons why you did not attend? *(**look at the attendance data before focus group because you might notice something that you can speak to in the focus group*).	a. Were there any factors that kept you coming to the program regularly? If so, what were they?
6. Of the classes you did attend, what did you like best?	a. What was your favorite component of the program and why? b. What did you take away from the program? c. What factors kept you active? What kept you coming back?

7. Of the classes you did attend, what would you change about the program and why?	a. If you could change the program, what would you add? b. What could we provide or do to increase your participation in future programs? c. What can be done to keep you active during the program?
8. Please describe your overall experience of exercising with your grandchildren.	
9. Please describe your relationship with your grandchild after participating in the physical activity program? Has it changed in any way?	a. Describe your communication with your grandchild. Did participating in the exercise program affect this? Why or why not? b. Describe your interactions with your grandchild since participating in the exercise program. Do you think this program has affected your interactions? If so, how?
10. Did you experience any barriers to participation in this program? If so, what were they?	a. Barriers could include things like: time, location, other people, room temperature, physical activity consultant, and/or weather. Were any of these an issue for you during the program? If so, how?
11. Have you learned anything while taking part in this program? If so, what have you learned?	
12. If you were there, think back to the first focus group we did. I asked you all about the goals you would like to accomplish while in the physical activity program. Do you remember your goals? If so, what were they?	
13. Did you accomplish your goals?	
14. What was your overall perception of the program?	
Ending Questions	
After providing a summary of the responses provided in the focus group ask... 15. Did I correctly describe everything we talked about?	
16. Does anyone have additional comments?	b. Would you like to make comments about the topics we talked about?
17. Are there any additional questions?	c. Any questions about the topics we talked about?

Appendix D: Professionals' Focus Group and Interview Protocol

Professionals' Focus Group/Interview Facilitation:

Questions	Follow-up Questions
Opening Question	
1. Please begin by stating your name and noting the most memorable moment of the program for you.	a. Think about something you saw, learned, or someone said that might be memorable?
Introductory Question	
2. What were some things you liked about the program and why?	a. What do you perceive as some of the benefits of having intergenerational programs in the community?
Transitional Question	
3. In what ways were you involved in this program?	a. What was your role in this project? b. What did you do to aid the researcher or the program in general?
Key Questions	
4. Were there any barriers that prevented you from effectively carrying out your role?	a. These barriers could be related to the program itself, the facility, or even other individuals (staff, participants, etc).
5. What can be done to best accommodate staff in their roles in these types of programs?	a. What can we do to help staff or consultants be more effective in their roles in intergenerational programs?
6. Were you assigned any tasks that were outside of your predetermined role? If so, what were they, and how did you feel about taking on these responsibilities?	a. Did you fulfill someone else's role? What was that role and what did you do?
7. Are there any additional roles you see for professionals in your field to fill in intergenerational programs? If so, what?	
8. What could be done to improve the program?	c. How can we make this program better for the participants? d. How can we make this program better for staff and other professionals who help facilitate it?
9. What could we do to make these programs sustainable?	a. How can we make sure these programs continue in communities?

10. Have you worked with these program participants in the past? If so, have you seen a difference in them since being involved in the program?	a. Did you notice any changes in the participants across the 8 weeks of the program?
11. Do you think this type of program (intergenerational) is beneficial? Why or why not?	a. Who might benefit from similar programs?
12. What are your overall thoughts about the program?	a. Any overall thoughts about the participants, the process of the program, or/and your role in the program?
Ending Questions	
After providing a summary of the responses *provided in the focus group ask...* 13. Did I correctly describe everything we talked about?	
14. Are there any additional comments anyone would like to make?	d. Would you like to make comments about the program or topics we talked about?
15. Are there any additional questions?	b. Any questions about the program or topics we talked about?

Appendix E: Fidelity Checklist

1. Review the Exertion Chart in detail during Class 1. Participants will continue to be briefly reminded of the chart and to be in-tune with their body to prevent injury throughout the program.
    - ☐ Reviewed the exertion chart or reminded grandparents to be mindful of their body?

2. Warm-up (5-7 minutes): The goal is to warm up and increase blood flow, oxygen, and nutrients to the muscles. This is also done to mentally prepare for upcoming physical activity. Began to play upbeat music and continue it until the cool down.
    - ☐ Warm-up done?

3. Components of fitness & wellness addressed during instruction and through the specific dance movements.
    - ☐ 45 minutes~ 10 songs played
    - ☐ A 30-60 second break occurs after each song
    - ☐ Balance addressed
    - ☐ Mind-body coordination addressed
    - ☐ Flexibility addressed
    - ☐ Toning/firming addressed
    - ☐ Cardiovascular/ aerobic addressed
    - ☐ Social support from instructor (addressed through encouragement and guidance through specific movements) occurred

4. Additional components to be addressed: In addition to the family being in the class together, there will be moments where the grandparents and grandchildren are doing dance routines and movements together as partners. Also, education regarding the dances and their origin as well as education about the movements and parts of the body that are being affected will be delivered.
    - ☐ Intergenerational interaction occurred?
    - ☐ Culture/education occurred?

    Describe:

5. Cool-down (5-6 minutes): The goal is to gradually return the heart rate and breathing to resting level. This is also done to help avoid fainting and dizziness (which can result from pooling of the blood in the legs). Calming or motivational music is played during this time.
    - ☐ Culture/education occurred?

Appendix F: Institutional Review Board Approval Letter

USF
UNIVERSITY OF
SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

12/3/2013

Tiffany Young, M.A.
School of Aging Studies
4202 E. Fowler Ave., MHC 1305A
Tampa, FL 33620

RE: **Full Board Approval for Initial Review**
IRB#: Pro00013553
Title: "Having Our Say": Exploring the Processes of a Community-Based Participatory Intergenerational Physical Activity Program for Grandparents Raising Grandchildren.

Study Approval Period: 11/15/2013 to 11/15/2014

Dear Dr. Young:

On 11/15/2013, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents outlined below.

Approved Item(s):
Protocol Document(s):
Having Our Say protocol

Consent/Assent Document(s)*:
Grandparent consent form.pdf
Parental consent .pdf
Staff consent.pdf
Youth assent .pdf
Youth assent script.pdf

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s).

Per CFR 45 Part 46, Subpart D, this research involving children was approved under the minimal risk category 45 CFR 46.404: Research not involving greater than minimal risk.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval by an amendment.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John Schinka, Ph.D., Chairperson
USF Institutional Review Board