SocIal Support Facilitated Through Group Physical Activity Programs
For Older Adults

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SOCIAL SUPPORT FACILITATED THROUGH GROUP PHYSICAL ACTIVITY PROGRAMS FOR OLDER ADULTS

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Abstract

of

SOCIAL SUPPORT FACILITATED THROUGH GROUP PHYSICAL ACTIVITY PROGRAMS FOR OLDER ADULTS

by

Erica Jill Brown

This paper examines the relationship between participation in a group physical activity program and social support for adults 55 and older. The older adult population is expected to double over the new few decades, and this could have a substantial impact on society. Older adults are at risk for decreased physical abilities that can lead to disease and disability, and they often encounter fewer social connections that can lead to loneliness and social isolation. Physical activity programs can improve or maintain physical fitness levels of adults, but these programs can also facilitate social support systems for their participants. Group physical activity programs can address both physical and social concerns for older adults, and there is a need to highlight the social components of these programs.

The purpose of this study was to examine the relationship between participation in a group physical activity program and social support for older adults. This paper describes the development and evaluation of a social support questionnaire that was given to seventeen participants before and after participation in Fit for Life, a group physical
activity program for adults 55 and older at the University of California, Davis, Activities and Recreation Center.

Paired \( t \)-tests were used to examine within-group differences on the questionnaire (pre-test vs. post-test), and independent \( t \)-tests were used to examine between-group differences on gender (female vs. male). To adjust for the small sample size, an alpha level of .15 was adopted to detect any trends in the following analyses. Overall, participants experienced marginally significant changes in two of the four dimensions of social support on the pre-test vs. post-test comparisons. Participants had a tendency to experience more emotional support and positive social interaction after participating in the Fit for Life program. No pre-test–post-test differences were found on informational support, affectionate support, or the overall total score. Based on these trends, recommendations for future research include increased sample size and choosing participants with no previous experience in this type of programming.
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Chapter 1

INTRODUCTION

The older adult population is expected to increase substantially over the next few decades, which could have a significant impact on society in a number of ways. Older adults are at risk for declining physical abilities, various diseases and disabilities, and loneliness as they enter new phases in life and experience physical and social changes. With the enormous population growths expected, these risks could increase significantly. These increases could impact society financially, and will challenge society to meet the needs of a growing and diverse population. Activity levels tend to decrease as adults age, decreasing physical health and functioning abilities. Older adults also tend to decrease meaningful connections with others through changes in social networks that can limit their support systems. All of these changes can have devastating effects on the physical and mental well-being of older adults. Physical activity programs for older adults can target their physical needs, and can also facilitate social support through fitness and exercise programs. Physical activity programs can decrease the risks for declining abilities, diseases and disabilities, and the loss of social support systems. Programs often highlight the physical benefits of participation, but the social components are of growing interest. Older adults need programs that provide opportunities for social interactions, and programs need to highlight the social benefits that participants can achieve. As the older adult population expands, the need for programs that promote both physical and social benefits is likely to grow, and the relationship between participation in these programs and social support needs further study. This study aims to examine the
relationship between Fit for Life, a group physical activity program, and social support for adults 55 and older.

**Need for the Study**

The United States Census (2005) defines baby boomers as those born from 1946 – 1964; 77 million people were born during this time period. From the year 2003 to 2030 the number of baby boomers entering their senior years is expected to double from 36 million to 72 million, and by 2050 this population should reach over 86 million. In 2030, baby boomers will make up nearly 20 percent of the total U.S. population. These extensive population growths could have a large impact on our society. Physical activity levels tend to decrease with age, increasing the risk of chronic diseases and disabilities that could limit functional abilities among older adults. Declining physical activity also leads to losses in strength and stamina, which increases the risk of falls (Centers for Disease Control, 1999). Falls can lead to a wide range of health concerns and staggering medical costs, often limiting independent living and increasing mortality rates among older adults. Continued participation in physical activity can reduce the risk of falls and related injuries, disease and disability, and can improve overall health and wellbeing. Participation in physical activities not only improves physical abilities, but it can also improve some of the social challenges that older adults face through the aging process.

Older adults are vulnerable to the loss of meaningful relationships and networks through retirement, changes in their environment, and the death of loved ones. They experience role changes as children leave home, they retire, they experience declining physical abilities, and the chances of losing loved ones increases (Beck, Shulz, Walls, &
Walton, 1991). All of these factors can lead to high levels of stress and can increase the risk of loneliness and depression through the loss of valuable social support networks. Retirees have been found to report poorer health, increased levels of depression and loneliness, lower life satisfaction and happiness, and lower activity levels in comparison to workers (Gall, Evans, & Howard, 1997). They tend to go through a process of adjustment when acclimating to changes in their environment, which can include fewer resources and unrealistic expectations about retirement. It is important that older adults engage in alternative social networks as they experience these changes, to continue meaningful relationships and maintain or improve wellbeing.

Physical activities can benefit older adults in numerous ways. Not only can they improve physical fitness levels and health related factors, but they can also facilitate social support for older adults as they experience new phases in life. This is especially important as older adults encounter new environments and experience changes in their social atmospheres. Social support networks are important for older adults in maintaining meaningful connections and preventing loneliness and isolation. Payne, Mowen, and Montoro-Rodriguez (2006) found a strong correlation between social support and wellbeing among older adults; leisure activities with friends and family provided companionship, emotional guidance, and support. Group fitness and exercise activities can provide an opportunity for older adults to stay active and healthy while building meaningful relationships with others, helping maintain or improve quality of life. Social support systems can be facilitated through physical activity programs for
older adults, and they can provide opportunities for participants to build relationships, foster accountability, and create a sense of belonging.

Physical activity programs for older adults often focus on the specific physical benefits that can be gained from participation. Older adults have specialized needs to prevent chronic diseases and disabilities, and physical activity programs often highlight how participation can help prevent or treat these major health concerns. Programs for older adults should not only highlight the physical benefits of participation, but also the social benefits that can be gained through participation. McAuley, Jerome, Elavsky, Marquez, and Ramsey (2003) found that social support within fitness programs for older adults influenced frequency of participation, enjoyment in the program, and overall well-being. Maintaining social support systems is imperative for older adults, and physical activity programs have the potential to improve both the physical capabilities and the social networks for adults as they go through the aging process. There is a need for programs to understand the social benefits of participation, and to highlight these benefits when promoting and recruiting older adults in the community.

Fit for Life, a program within the Department of Campus Recreation at the University of California, Davis, is a program designed to enhance health and fitness levels for adults 55 and older. A variety of classes seek to maintain or improve physical activity levels for older adults by focusing on aerobics, strength, flexibility, balance, and mind/body awareness. Participants interact in intimate class settings with peers, and the department is beginning to consider the social benefits that participants may gain from participation. The program currently highlights the physical benefits of participation, but
the social benefits are of interest as an additional attraction to the program. Fit for Life can maintain or improve the physical activity levels of older adults, but social support can also be facilitated through these physical activity classes. The physical and social benefits of participation need to be highlighted when promoting Fit for Life to increase awareness and encourage older adults to enroll in the program. This study will examine the relationship between participation in Fit for Life, a group physical activity program, and social support for older adults.

**Theoretical Bases**

Sidney Cobb (1995) describes social support as information leading subjects to believe that they are cared for and loved, that they are esteemed and valued, and/or that they belong to a network of communication and mutual obligation. Social support is seen as a moderator of life stress, and it can protect against the health consequences of different stressors. Cobb’s theory states that social support facilitates coping with crisis and adapting to change.

Sherbourne and Stewart (1991) examined five dimensions of social support in their research. These dimensions were emotional support (positive affect, empathetic understanding, encouragement of expression of feelings), informational support (advice, guidance, feedback, information), tangible support (material aid or behavioral assistance), positive social interaction (someone to do fun things with), and affectionate support (love and affection). This theory looks at the specific functions of social support, and how specific functions meet different needs for the individual. The social support questionnaire was based on four of these functions of social support (emotional,
informational, positive social interaction, and affectionate). For the purpose of this study, these functions of social support were examined in relationship to the physical activity program, Fit for Life. Changes in these functions of social support were studied from pre- and post-questionnaires.

**Purpose of the Study**

The purpose of this study is to examine the relationship between participation in a group physical activity program, Fit for Life, and social support among adults 55 and older.

**Research Questions**

In the context of this study on adults 55 and older:

- What is the relationship between participation in Fit for Life and emotional support (positive affect, empathetic understanding, encouragement of expression of feelings)?
- What is the relationship between participation in Fit for Life and informational support (advice, guidance, feedback)?
- What is the relationship between participation in Fit for Life and positive social interaction (someone to do fun things with)?
- What is the relationship between participation in Fit for Life and affectionate support (love and affection)?
Definitions of Key Terms

The following terms are used throughout the study and are meant as an introduction to the concepts, as a preliminary guide for the reader. They are presented here in a basic manner and will be explained in greater depth throughout the study.

Older Adults refers to adults age 55 and older.

Social Support: refers to four main components. These are: emotional support (positive affect, empathetic understanding, encourage expression of feelings), informational support (advice, guidance, feedback), positive social interaction (someone to do fun things with), and affectionate support (love and affection). Social support also refers to feelings of being cared for and loved, esteemed and valued, and a member of a network of mutual obligation (Sherbourne & Stewart, 1991; Cobb, 1995).

Social network: individuals to whom one has direct links; the significant or important ties that provide support to an individual.

Quality of Life: sense of well-being, meaning, and value; ability to enjoy life activities.

Social Isolation refers to the absence of social interactions, contacts, and relationships with family and friends. It relates to the lack of having a social network providing emotional, social, physical, and/or financial support and care.
Baby Boomer refers to a person born between the years of 1946 – 1964 (United States Census, 2005).

Loneliness refers to an individual being affected with, characterized by, or causing a depressing feeling of being alone; lonesome (Merriam-Webster’s Collegiate Dictionary Online, 2010).

Physical activity refers to bodily movement that enhances health, which uses more energy than when you are resting.

Exercise refers to planned, structured, and repetitive movement to improve or maintain one or more components of physical fitness (Chodzko-Zajko et al., 2009).

Fit for Life: a group physical activity program at the University of California, Davis, for adults 55 and older. The 10 week program focuses on increasing fitness levels of participants through classes on aerobics, strength training, flexibility, and balance.

Delimitations

The following delimitations were applied to restrict the scope of the study:

This study was restricted to adults 55 and older participating in the Fit for Life physical activity program within the Department of Campus Recreation at the University
of California, Davis (UC Davis). It focused on measures of social support for participants 55 and older participating in this group physical activity program, and the relationship between participation in Fit for Life and levels of social support.

**Limitations**

There are several limitations to this study. Subjects were adults age 55 and older participating in the Fit for Life program at UC Davis. The results of this study cannot be generalized to all adults over the age of 55 participating in a group physical activity program.

The sample size for the study was small, which could have limited the ability to obtain statistically significant findings.

Subjects were required to pay a fee to participate in the class, so the findings are limited to those with the financial means to participate in such an exercise program.

Only specific physical activities were utilized by instructors throughout the 10 week course, and the findings are not a reflection of all physical activities. The results of the study cannot be generalized to all physical activities.

A control group was not used in this study, which is another limitation to the results. The results of participation in the program are not compared to a control group that did not participate in the program.

The study could not account for outside events that occurred during the 10 week program that could have impacted results. The study could not control for significant life events that occurred for subjects while enrolled in the program that may affect social support levels for an individual.
The study relied on subject honesty in reporting levels of social support. The researcher’s assumption that the participants were truthful is a limitation of the study.
Chapter 2

LITERATURE REVIEW

The older adult population has been steadily growing over the past 50 years, and the next few decades are expected to bring extensive growth rates within this population. The United States Census (2002) reported that there were 59.6 million adults over the age of 55 in the United States in 2002, representing approximately 21% of the total population. Within the older adult population, 26.6 million were men and 33 million were women. Among those 55 and older, men were more likely than women to be married and living with a spouse, and women had higher rates of being widowed.

The number of older adults will increase dramatically from 2010 - 2030, especially as the baby boomers begin turning 65 in 2011 (The Federal Interagency Forum on Aging-Related Statistics, 2008). The United States Census (2005) defines baby boomers as those born from 1946 – 1964; 77 million people were born during this time period. There were 35 million older adults in 2000; this is projected to double to 71.5 million in 2030 - making up 20% of the total population.

The growing number of older adults could have a large impact on our society as they begin making up larger proportions of our population. There is the potential for an increase in health care costs as physical abilities decline and the risk for disease and disability increases. Along with declining physical abilities, older adults are at higher risk for loneliness and isolation. Significant life changes such as retirement and the loss of loved ones can impact the social networks of older adults, and affect overall well-being. Leisure and recreation professionals will be challenged to address the needs of the
expanding older adult population, and can utilize physical activity programs to maintain physical abilities and provide opportunities for social support systems. Group physical activity programs can be instrumental in addressing both the physical and social needs of older adults to maintain or improve quality of life.

**Health Concerns for Older Adults**

Americans are living longer and have longer life expectancies than in previous generations. The rapid growth rate of the older adult population is upon us, and there is greater risk for increasing numbers of diseases and disabilities that could lead to costly hospitalizations and health-care expenditures. In 2004 the leading causes of death for people over 65 were heart disease, cancer, stroke, chronic lower respiratory diseases, Alzheimer's, diabetes mellitus, and influenza and pneumonia (The Federal Interagency Forum on Aging-Related Statistics, 2008). The National Institute on Aging (2009) reported that heart disease and stroke account for more than 40% of deaths for those ages 65 to 74, and nearly 60% of deaths for those 85 and older. Age is considered a primary risk for the development and progression of many chronic degenerative diseases, and the risk of eventually dying from these diseases increases with age. Additional health risks include arthritis, diabetes, osteoporosis, and falls. The older population exhibits the highest incidence of these degenerative musculoskeletal conditions, often due to inactivity (Chodzko-Zajko et al., 2009).

Older Americans are the least physically active of all age groups, and they produce the highest expenses for medical care (American College of Sports Medicine and the American Heart Association, 2007). The increasing numbers of older adults could
create substantial health-care costs, a considerable proportion to treat chronic diseases. In the year 2000 one-third of health care expenditures were for older adults; by 2030 health care costs for this age group is expected to increase by 25% due to the sheer number of older adults making up the population at that time (U.S. Department of Health and Human Services, 2002). This economic burden could be prevented, or lessened, if older adults engage in more physical activities to offset these chronic diseases. Increasing the amount of time that older adults participate in physical activities may be challenging, as physical activity has been consistently shown to decrease with age (Schutzer and Graves, 2004).

In 2005-2006, 22% percent of adults over the age of 65 reported engaging in regular leisure time physical activity; these percentages decreased with age. More than 30% of adults reported not exercising at all (Schutzer & Graves, 2004). In 2006 older adults reported spending 29% of their time (6.5 hours) in leisure time activities; these numbers increased with age. Those ages 55 - 64 reported spending 23% of their time in leisure activities, but more time (16%) in work related activities than those over the age of 65 (1 - 4%). The number one leisure time activity for those 55 and over was watching TV; this activity comprised about half of the time spent in leisure activities (The Federal Interagency Forum on Aging-Related Statistics, 2008). Socializing and communicating, reading, relaxing and thinking, participation in sports, exercise, recreation, and other activities followed this as leisure time activities. The most popular activities that older adults reported to engage in during leisure time were the least physically active ones, despite the numerous benefits that regular exercise could provide.
While the importance of physical activity is well known, convincing older adults to begin or increase activities can be difficult. Fifty percent of sedentary adults have no plan to begin an exercise program, and the elderly often believe themselves to be too old or frail for physical activity (Schutzer & Graves, 2004). They often view exercise as a recreational pursuit, and not as preventative or medical therapy. Additionally, existing health factors and misconceptions about the time required to achieve benefits may prevent adults from exercising. All of these factors can increase inactivity among older adults, which can lead to or exacerbate health concerns. The decreasing amount of time spent in physical activities is marked by the increases in overweight and obese older adults. Over the past few decades, the percentages of overweight and obese older adults have doubled (Centers for Disease Control and Prevention, 2007). Thirty two percent of adults over 65 were obese in 2007-2008, compared with 22% from 1988 – 1994, and 40% were overweight (The Federal Interagency Forum on Aging-Related Statistics, 2010). Obesity alone is a major health issue, but it is also one of the risk factors for many of the leading causes of death. The incidence of medical complications associated with obesity increases with age. These complications include metabolic abnormalities (metabolic syndrome, type 2 diabetes mellitus, hypertension), arthritis, pulmonary abnormalities, cataracts, urinary incontinence, and cancer (Apovian, Klein, Kushner, & Villareal, 2005). The medical complications caused by obesity can lead to substantial morbidity, decreased quality of life, and premature death. Physical activity can prevent many chronic conditions, including obesity, but the challenge remains to increase activity
levels for adults. Inactivity not only increases the risk for chronic diseases but it also affects strength and balance, and increases the risk of falls among older adults.

The Centers for Disease Control (2009) report that falls are the number one leading cause of injury death for adults 65 and older, and are the most common cause of nonfatal injuries and hospital admissions. At least 30% of adults over 65 fall each year; this percentage increases to over 40% for adults over 75 (Tinetti and Williams, 1998). These numbers are staggering considering the impending growth rates of older adults. In 2002 nearly 13,000 older adults died as a result of falls, over 1.6 million were treated at emergency departments for fall-related injuries, and 388,000 were subsequently hospitalized (Corso, Finkelstein, Miller, & Stevens, 2006). Falls can lead to bruises, fractures (hip, spine, and extremities), head trauma, and traumatic brain injuries. Hip fractures are the most serious injury from falling and are the leading cause of morbidity and excess mortality in older adults. Only 50% of hospitalized older adults in the United States are able to return home or live independently following the injury (Stevens & Olson, 2000). All of these fall-related injuries can limit independent living, lead to additional health issues, and create a fear of falling that causes older adults to limit their activities. Reducing their activities can then lead to reduced mobility and physical fitness, increasing their risk of falling again. Additionally, falls are costly. Corso, Finkelstein, Miller, and Stevens (2006) looked at the costs of fatal and non-fatal falls for the year 2000. They estimated that direct medical costs for these injuries totaled $0.2 billion dollars for fatal falls and $19 billion dollars for non-fatal falls. While these costs are substantial they do not include costs associated with lost wages, non-medical
expenditures (wheelchair ramps or other renovations), insurance claims processing costs, and other costs associated with declining functional abilities of adults who have fallen. The enormity of the economic burden of falls highlights the need for effective intervention programs to reduce the risk of falls among older adults.

There are numerous health risks for older adults as they age, and the rates of disease and disability increase as adults grow older. Lack of physical activity is a key contributor to many chronic diseases, including obesity, for older adults. Falls among older adults are a serious concern, as they can lead to limited functioning and therefore impact independent living. Physical activity can prevent many of these health concerns. It is critical for older adults to participate in physical activity routines to maintain and improve balance, strength, flexibility, and overall health and wellness. Maintaining physical health can prevent devastating injuries, such as those from falls, and ward off potential disease and disability. Finding routines that are appropriate and safe is also important, particularly for those with specific needs.

**Social Support Concerns**

Cobb (1995) defined social support as someone believing that he/she is cared for and loved, esteemed and valued, and a member of a network of mutual obligation and communication. Relationships within social networks can serve specific functions for an individual. Some of these functions include emotional support (positive affect, empathetic understanding, encouragement of expression of feelings), informational support (advice, guidance, feedback, information), positive social interaction (someone to do fun things with), and affectionate support (love and affection) [Sherbourne and
Stewart, 1991]. These functions of social support can be obtained through various social
tools, which may change for older adults as they experience transformations in their
environments and social connections.

Older adults may experience changes in social environments and lifestyles as they
encounter health issues, enter retirement, interact with fewer people, and endure the loss
of loved ones. Older adults tend to experience decreases in the amount of social
connections as they age, including fewer social networks and less emotional closeness
(National Alliance on Mental Illness, 2009). The proportion of leisure time that older
adults spend socializing and communicating with others decreases with age. Thirteen
percent of leisure time is spent socializing and communicating for adults 55-64,
compared with 8% for those 75 and older (The Federal Interagency Forum on Aging-
Related Statistics, 2010). It is important for older adults to maintain meaningful
relationships and social support systems, as these can impact quality of life. Social
networks from jobs and other activities may be lost as older adults experience these
changes, and it is important that they replenish these social connections through
alternative activities and opportunities. These networks can provide companionship,
support, accountability, and a sense of belonging, and it is essential that older adults
establish social support systems through their later years. Loss of emotional support and
close relationships is directly associated with increased depressive symptoms in older
adults, and this can greatly impact quality of life (Barrett, Berkman, Freeman, Kasl, and
Oxman, 1992).
More than 6.5 million adults over the age of 65 are affected by depression (Geriatric Mental Health Foundation, 2004). It is more common in individuals who lack a supportive social network, who are widowed, and who have physical health problems. Older women are more likely to report clinically relevant depressive symptoms than older men, with 18% of women reporting these symptoms in 2006 compared to 10% of men (The Federal Interagency Forum on Age Related Statistics, 2010). Depressive symptoms also tend to increase with age. The proportion of older adults over 85 with depressive symptoms was larger (19%) than their younger counterparts (13-16%), for both sexes. Those with depressive symptoms are at higher risk of physical illness, greater functional disability, and higher health-care costs. Recommendations include obtaining support from friends, talking to others, spending time with people they enjoy, exercising, and participating in enjoyable activities to prevent or treat depression. Regular interactions with friends and family can help prevent loneliness, a common predictor of depression.

Bond, Bowling, Scambler, and Victor (2005) examined the risk factors for loneliness in later life. They grouped these risk factors into four domains: socio-demographic, material, health and social resources. Certain variables demonstrated a statistically significant relationship with loneliness, including the oldest respondents, the widowed, and those living alone. Additionally, chronic health problems, depression, disability, and sight or hearing problems were associated with higher rates of loneliness. In terms of social resources, only those who reported being alone often or always had significantly high rates of loneliness. Their findings support the concept that proximity
or quantity of social relationships were not as important as quality. Those with better quality relationships, even in lower quantities, reported lower levels of loneliness.

The potential for the loss of social support systems is of great concern as the older adult population expands over the next few decades. Older adults often enter new phases in life as children leave home, they retire, they endure the loss of loved ones, and they experience changes in their social networks. Social connections can serve a variety of functions for older adults, most essentially influencing their overall quality of life. The loss of meaningful relationships can lead to loneliness and symptoms of depression, but continued involvement in the community and in certain activities can prevent this from occurring.

**Benefits of Physical Activity**

Regular physical activity has been linked to an array of physical and mental health benefits for people of all ages. The Journal of the American Medical Association (1995) reviewed pertinent scientific evidence on physical activity to create a recommendation for the public. Their review found that physically active adults often had higher levels of physical fitness, and physical activity had protective effects against many chronic diseases. Exercise training was found to improve the risk for common diseases and other health-related factors. They recommend that every U.S. adult participate in 30 minutes or more of moderate-intensity physical activity on most, if not all, days of the week. These 30 minutes of physical activity can be accumulated throughout the day in short bouts, and do not need to occur at one time. The recommendation emphasizes that adults do not need to continuously participate in
vigorous exercise to reap benefits, but that regular, moderate-intensity activity can produce substantial health benefits.

Hillman, Erickson, and Kramer (2008) looked at the effects of exercise on the brain and cognition during childhood, younger adulthood, and older adulthood. They found that physical activity had a positive effect on cognition for all age groups, including both normal adults and those with early signs of Alzheimer’s disease. The authors found that physical activity positively impacted a wide range of cognitive functions, but that effects on certain cognitive functions were disproportionately greater. These findings are especially important for older adults, demonstrating that fitness programs can positively influence cognitive abilities in addition to physical functioning.

The National Institute on Aging’s (2009) publication details the importance of exercise and physical activity for older adults. The seven chapter publication provides guidelines on the benefits of exercise and physical activity, how to get started, how to reduce any risks, and how to check progress. It also provides healthy eating tips, sample exercises, and methods of rewarding yourself. It discusses the benefits of exercise, including physical strength and fitness, balance, doing activities that you want to do, managing and preventing diseases, and improving mood and overall well-being. Recommendations include making exercise a social activity by enlisting family or friends, and making it fun so that it is more enjoyable. Socializing was one of the main reasons people provided for exercising, so incorporating friends and family into an exercise program can provide motivation and make it more pleasurable. The publication’s framework provides older adults with valuable information to understand the importance
of exercise and physical activity, and to learn how to successfully prepare for and participate in activities.

Maintaining an exercise program is essential as adults grow older. The American Academy of Orthopedic Surgeons (2008) details why maintaining an exercise program is crucial, and describes what comprises a safe and effective regimen. Exercise for older adults is especially important in maintaining the ability to walk, improving and maintaining balance, improving strength and flexibility, improving endurance, maintaining muscle mass and tone, and maintaining joint health. These benefits are important in reducing the risk of injury, falls, disease, disability, independence, and overall functioning. Regular exercise can prevent or slow the progression of conditions that are associated with aging. A safe and effective exercise program for older adults should include aerobic conditioning, flexibility and agility exercises, strength training, and relaxation techniques. Specific exercise routines should be taken into consideration when programming for older adults to cater to their individualized needs.

Certain exercise programs can target the specialized needs of the older adult population. Since physical activity tends to decrease with age, older adults are at risk for many of the musculoskeletal problems that affect their functional abilities. Physical inactivity is associated with loss of muscle mass and strength, bone loss, and osteoporosis, all of which are risk factors for falls and fractures in older adults (Easton, Husten, Kamimoto, Macera, & Maurice, 1999). Since falls are the number one leading cause of injury death for adults 65 and older, and are the most common cause of nonfatal injuries and hospital admissions, they are of great concern. The Centers for Disease
Control (2009) recommend exercise as the number one step to reducing the risk of falls. Exercise can reduce the risk of falling by improving balance, coordination, strength, and flexibility. Increasing physical activity levels can reduce the risk of hip fractures by 40 – 60% (Stevens and Olson, 2000). Reducing the risk of falls can lead to a decline in subsequent health issues such as fractures, head trauma, and injuries that lead to limited independent living. Preventing these can cut the costs of health care while maintaining physical activity levels of older adults, an essential piece of healthy aging.

Older adults who have participated in long-term physical activities demonstrate a broad range of physiological and health advantages (Chodzko-Zajko, 2009). Compared to their sedentary counterparts these include, but are not limited to, better body compositions, greater body mass in the limbs, higher capacity to transport and use oxygen, less metabolic stress during exercise, and a notably reduced coronary risk profile. Older adults who regularly participate in resistance training demonstrate similar benefits. Previously sedentary older adults can also benefit from beginning exercise training. These benefits include, but are not limited to, improved aerobic exercise capacity, positive cardiovascular effects, a reduction in total body fat, increased muscular strength, and decreased risk of injurious and non-injurious falls. Exercise for both active and previously sedentary older adults were effective in limiting the development and progression of chronic diseases and disabilities, demonstrating that starting an exercise program at any age can have beneficial effects.

Beyond the physical benefits and improvements in health, physical activities can benefit psychological health and well-being. Higher levels of physical fitness and
aerobic training have been associated with a decreased risk of clinical depression and anxiety, and are thought to influence psychological well-being through their moderating effects on concepts such as self-esteem (Chodzko-Zajko, 2009). Exercise can also provide older adults with a sense of control and increase their self-efficacy, since perceived control tends to decrease with age. Physical activity programs can decrease the risk of depression and anxiety while improving self-concept, positively impacting quality of life and overall well-being. Older adults, even previously sedentary ones, can benefit from even minimal amounts of exercise on a regular basis.

Physical activity can also help improve depressive symptoms in older adults. Guthrie, Mather, McHarg, McMurdó, Reid, and Rodriguez (2002) found that a considerably higher proportion of older adults in an exercise group experienced a more than 30% decline in depressive symptoms after 10 weeks. Participants were asked to attend two classes per week, the 45 minute classes focused on endurance, muscle-strengthening, and stretching. The study focused on older adults with depressive symptoms, the average age of those in the exercise group being 63. These findings suggest that if older adults are willing to increase their physical fitness levels, even short group physical activities twice a week can improve depressive symptoms.

Increasing physical activity could reduce medical expenditures among older adults within one year of changing their behaviors. Regular physical activity reduces the risk of cardiovascular disease, stroke, diabetes, obesity, and falls, and can be effective therapy for many chronic diseases. The American College of Sports Medicine and the American Heart Association (2007) created a preventive and therapeutic recommendation
for older adults to maintain and improve health in older adults. Older adults should participate in 30 minutes of moderate-intensity aerobic activity five days a week, or a minimum of 20 minutes of vigorous-intensity activity three days a week. Muscle-strengthening activities should be performed a minimum of two days per week. Older adults should perform activities that promote flexibility for 10 minutes two days a week, along with exercises that maintain or improve balance. Participating in greater amounts of aerobic and muscle-strengthening activities beyond the recommendations provides additional health benefits. Exceeding these recommendations can improve personal fitness, improve the therapeutic benefits of existing diseases, reduce the risk for premature chronic conditions and mortality, and prevent unhealthy weight gain.

**Social Support and Physical Activity**

Physical activity programs often highlight the physical benefits that participants can gain from participation. The benefits are immense and are of particular importance for older adults. Friends and family members can play an important role in encouraging older adults to participate in physical activity programs to increase their likelihood of participation. Additionally, physical activity programs can provide older adults with the opportunity to interact with peers and build relationships with fellow participants. Encouragement from friends and family, and connections made through participation, can be crucial determinants of older adults continuing to participate in exercise programs.

Social support from family and friends can play an important role in the rate of participation in physical activities. Smith, Payne, Mowen, Ho, and Godbey (2007) found a relationship between support from others and participation in physical activities of older
adults. They found that social support from friends and family was a strong predictor of physical activity in the adult population, through encouragement and personal involvement in physical activities. The authors recommend that leisure service programmers promote programs for older adults and their friends or family, as this could increase the chance of older adults participating in leisure activities. They suggest providing activities and services that bring together older adults and their friends/family via common interests to further develop social support, which in turn could increase the rate of participation in leisure activities. Support from others could provide older adults with an incentive to begin or maintain an exercise program.

Cardenas, Henderson, and Wilson (2009) studied the reasons why older adults participated in one state’s Senior Games, and how it impacted their perceived health. Their review of other studies found that instrumental, social, and high-demand leisure activities have been associated with higher levels of physical health among older adults. These studies claim that social support and social environments are the most important determinants of physical activity, rather than access to programs. The authors found that the reason older adults participated in physical activities was primarily because of social opportunities, physical health, and personal engagement. Being physically and socially active were also determinants of perceived health and well-being. These findings support the concept that social support plays an important role in participation in physical activities, particularly in relation to perceived health of participants.

Creating social support systems within the exercise program could also have an impact on frequency and duration of participation. McAuley, Jerome, Elavsky, Marquez,
and Ramsey (2003) found that increased levels of social support within physical activities played an important role in determining the how pleasurable the exercise experience was for participants. The positive experience that the participants received, due to high levels of social support within the exercise program, could influence subsequent participation in the program. Older adults may participate in group exercise programs more frequently, and for longer periods of time, if social support within the group is high.

Once social networks are established, these connections can have an array of positive effects on participants. Payne, Mowen, and Montoro-Rodriguez (2006) studied the leisure styles and health of older adults with arthritis and found a strong correlation between social support and well-being. Their study found that participants who socialized with friends once per week had the highest perceived mental health scores. Socialization often occurred through leisure activities that not only provided companionship, but also emotional guidance and support. Recreational and leisure activities can serve as the conduit for social support systems that are vital for overall well-being.

Cacioppo, Kiecolt-Glaser and Uchino (1996) reviewed 81 studies revealing how social support was reliably related to positive effects on portions of the cardiovascular, endocrine, and immune systems. In general, higher levels of social support were associated with better cardiovascular regulation. Functions of social support were also found to reduce cardiovascular reactivity to specific stressors and situations. Their review of these studies found strong evidence linking social support to physiological systems, some of them related to the leading causes of death in the United States. Social
support could play an important role in long-term health outcomes of older adults, and combined with physical activities could have even more beneficial consequences.

Physical activity for older adults is vital for many reasons, but most notably to maintain or improve physical health and provide a social support system. Much of the research has documented the benefits of physical activities for older adults in preventing serious injuries, diseases, and disabilities. Research has also shown that social support greatly influences participation in physical activities. Additionally, evidence suggests that older adults tend to lose social support systems as they age, and this has the potential to greatly impact participation in recreational activities and quality of life. Further research needs to look at how physical activities can facilitate social support to increase participation and provide older adults with social networks that could improve quality of life. There needs to be further study on the relationship between group physical activities and social support, and how these impact overall well-being of older adults.

**The Program: Fit for Life**

Fit for Life, a program within the department of Campus Recreation at the University of California, Davis (UC Davis), is designed to enhance the health, fitness and activity levels of the retired UC Davis community by incorporating physical activity into individuals' daily routines. The program runs for 10 weeks each quarter, with four programs offered per year. The variety of classes offered are specifically designed for mature adults (55+) that seek to maintain, improve or begin physical activity with a focus on aerobic activities, muscular strength, flexibility, mind/body awareness and balance. A variety of classes are offered at various times throughout the week, and participants can
choose which classes to attend. Classes include cycling, Nordic walking, step, zumba, pilates, stretching, and strength building sessions. The Fit for Life instructors provide specialized classes to challenge the mind, body and core in a safe, fun and efficient manner.

Fit for Life is aimed at improving the physical and mental well-being of adults over the age of 55. While one of the main focuses of the program is to increase physical fitness levels, the social benefits are becoming an interest. Intimate classes provide the opportunity for participants to interact, build relationships, and create a sense of community with their peers. Research has demonstrated the physical benefits of physical activity programs, but research should also look at the social benefits from participation in these programs. Historically, this specific program has not intentionally targeted social support in their programming. The programming staff has only recently begun to consider the social aspects of the program, and how this can benefit participants. This study aims to examine the relationship between participation in Fit for Life and social support for those 55 and older.
Chapter 3

METHODOLOGY

The following outlines the design and methodology for this study. This study looked at a specific group physical activity program for older adults, Fit for Life, and the relationship between participation in the program and levels of social support.

Research Design

This study utilized quantitative analysis of pre-post survey data to measure changes in social support through participation in a group physical activity program, Fit for Life, for adults 55 and older. A control group was not used to compare results.

Purpose of the Study

The purpose of this study was to examine the relationship between participation in Fit for Life and social support for adults 55 and older.

Research Questions

- What is the relationship between participation in Fit for Life and emotional support (positive affect, empathetic understanding, encouragement of expression of feelings)?
- What is the relationship between participation in Fit for Life and informational support (advice, guidance, feedback)?
• What is the relationship between participation in Fit for Life and positive social interaction (someone to do fun things with)?

• What is the relationship between participation in Fit for Life and affectionate support (love and affection)?

**Methods**

This study utilized a convenience sample with an intact group. This study was purposive in selecting subjects that met the criteria of participating in a group physical activity program, Fit for Life, for adults 55 and older. Due to the small sample size, this study was exploratory in design.

**Site Selection**

The site for this study was the Activities and Recreation Center at the University of California, Davis. Fit for Life is a program within the Department of Campus Recreation that offers fitness classes to adults 55 and over; all classes took place within designated fitness rooms at the Activities and Recreation Center.

**Subjects**

For this study, subjects were adults over the age of 55 enrolled in Fit for Life, a UC Davis Campus Recreation program designed to enhance the health, fitness and activity levels of the older adult community. Subjects were enrolled in a 10 week program that sought to maintain, improve or begin physical activity with a focus on aerobic activities, muscular strength, flexibility, mind/body awareness and balance.
Seventeen participants volunteered for the study. Of the seventeen, seven were male and ten were female. The youngest participant was 55 and the oldest was 73. The mean age was 64, the median age was 64, and the mode was 64.

Participation was voluntary for all subjects. Subjects were required to sign a Consent to Participate in Research form prior to participating in the study. Subject confidentiality was maintained by assigning numbers to participants rather than names, and securing all responses in a locked and secure filing system.

**Sampling Technique**

This study utilized a convenience sample with an intact group. The study utilized quantitative analysis of pre-post survey data to interpret the findings. A control group was not used to compare results.

**Instruments**

The questionnaires given to participants gathered information on any differences in social support that they experienced through participation in Fit for Life. The questions looked at the following components of social support, based on the study conducted by Sherbourne and Stewart (1991): emotional support (positive affect, empathetic understanding, encourage expression of feelings), informational support (advice, guidance, feedback), positive social interaction (someone to do fun things with), and affectionate support (love and affection). Each question, besides age and gender, fell into one of these categories.
Methods of Data Collection

For this study, the researcher met with participants prior to the start of the quarterly program. The researcher obtained informed consent after explaining the purpose of the study to all subjects. Subjects were informed that they did not have to answer a question if they did not feel comfortable doing so, and that participation in the study would have no effect on participation in the class. The researcher explained that individual results would not be reported to the instructor, only group results. Subjects were informed that participation would be entirely voluntary, and that they could choose not to participate at any point during the program.

The program instructor assigned willing participants a number and indicated this number on each questionnaire; the instructor handed out questionnaires to subjects. Only the instructor, and not the researcher, knew the assigned numbers. Participants filled out the questionnaires, and the researcher collected them into an envelope upon completion. After all questionnaires were collected the researcher kept them, along with the consent forms, in a secure and locked filing cabinet.

Analysis

Quantitative analysis was used to analyze and interpret the data, comparing individual questionnaire answers before and after participation in the program. Questions were grouped together by categories of social support (emotional support, informational support, positive social interaction, and affectionate support) and the results of these
categorical groups were compared by pre and post program participation. The study also examined any correlations between gender and social support.

**Interpreting the Data**

The researcher utilized descriptive statistics to interpret the data, comparing answers before and after participation in the class. Quantitative data was utilized to examine any correlational relationships between participation in Fit for Life and specific aspects of social support.

**Generalizability**

This study is not a true experimental design and did not use random sampling. Therefore, it cannot be generalized to all older adults participating in a group physical activity program. Further research should be conducted in examining the relationship between participation in group physical activity programs and social support.
Chapter 4

RESULTS

The pre-test–post-test questionnaire was completed by 17 Fit for Life participants. Ten participants were female (mean age = 63.2 years old), and seven participants were male (mean age = 66.9 years old). No gender difference was found on age, \( t(15) = -1.48, \ p = .16 \). Fifteen of the older adults had participated in Fit for Life before, leaving two older (female) adults who had never participated in Fit for Life. Chi-square test for independence did not show any gender by Fit for Life differences, \( \chi^2(1) = 1.59, \ p = .49 \). See Table 1 for additional information.

<table>
<thead>
<tr>
<th>Question</th>
<th>Females ((n = 10))</th>
<th>Males ((n = 7))</th>
<th>(P)-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), mean ± SD</td>
<td>63.2 ± 5.0</td>
<td>66.9 ± 5.1</td>
<td>.159*</td>
</tr>
<tr>
<td>Fit for Life: Yes / No</td>
<td>8 / 2</td>
<td>7 / 0</td>
<td>.385**</td>
</tr>
</tbody>
</table>

*\(t\)-test; and **chi-square test.

Reliability

The reliability for the total scores and each component of social support was high. On the pre-test questionnaire, Cronbach’s alpha measured .98 on the total score with a mean of .94 on each component. Reliability on the post-test questionnaire was comparable. Cronbach’s alpha measured .95 on the total score with a mean of .93 on each component. In sum, this demonstrated high internal consistency across the questionnaire items and within each component.
Social Support Dimensions and Total Scores

The remaining results should be interpreted with caution because of the small sample size, which limited the statistical power of the tests or the ability to detect group differences. Paired $t$-tests were used to examine within-group differences on the questionnaire (pre-test vs. post-test), and independent $t$-tests were used to examine between-group differences on gender (female vs. male). To adjust for the small sample size, an alpha level of .15 was adopted to detect any trends in the following analyses.

Overall, participants experienced marginally significant changes in two of the four dimensions of social support on the pre-test vs. post-test comparisons (see Table 2). Participants had a tendency to experience more emotional support, $t(16) = 1.54, p = .14$, and positive social interaction, $t(16) = 1.59, p = .13$, after participating in the Fit for Life program. No pre-test–post-test differences were found on informational support, $t(16) = 0.88, p = .39$, affectionate support, $t(16) = 0.35, p = .73$, or the overall total score, $t(16) = 1.25, p = .23$.

Furthermore, female participants had a greater influence on overall emotional support and positive social interaction than male participants. That is, female participants tended to score higher on emotional support after participating in Fit for Life, $t(9) = 1.60, p = .15$, but no difference was found for male participants, $t(6) = 0.93, p = .39$. Approaching the .15 criteria level, female participants also tended to score higher on positive social interaction after the program, $t(9) = 1.55, p = .16$. Male participants did not show this tendency, $t(6) = 1.00, p = .36$. For each gender, no other differences were found, all $p$s > .15.
Table 2. Means and Standard Deviations for Participants’ Pre–Test and Post–Test Questionnaire by Gender (N = 17)

<table>
<thead>
<tr>
<th>Type of Social Support</th>
<th>Pre–Test</th>
<th>Post–Test</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>30.1 ± 3.2</td>
<td>31.7 ± 3.2</td>
<td>–1.60*</td>
</tr>
<tr>
<td>Male</td>
<td>28.9 ± 8.0</td>
<td>31.9 ± 3.6</td>
<td>–0.93</td>
</tr>
<tr>
<td>t value</td>
<td>0.45</td>
<td>–0.10</td>
<td></td>
</tr>
<tr>
<td>Subscale Total</td>
<td>29.6 ± 5.5</td>
<td>31.8 ± 3.3</td>
<td>–1.54*</td>
</tr>
<tr>
<td><strong>Informational</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>21.0 ± 2.7</td>
<td>21.3 ± 3.0</td>
<td>–0.34</td>
</tr>
<tr>
<td>Male</td>
<td>19.6 ± 6.3</td>
<td>21.6 ± 4.2</td>
<td>–0.79</td>
</tr>
<tr>
<td>t value</td>
<td>0.64</td>
<td>–0.16</td>
<td></td>
</tr>
<tr>
<td>Subscale Total</td>
<td>20.4 ± 4.4</td>
<td>21.4 ± 3.4</td>
<td>–0.88</td>
</tr>
<tr>
<td><strong>Positive Social Interaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>30.7 ± 3.2</td>
<td>32.2 ± 2.9</td>
<td>–1.55**</td>
</tr>
<tr>
<td>Male</td>
<td>28.0 ± 7.6</td>
<td>31.1 ± 4.1</td>
<td>–1.00</td>
</tr>
<tr>
<td>t value</td>
<td>1.02</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>Subscale Total</td>
<td>29.6 ± 5.4</td>
<td>31.8 ± 3.4</td>
<td>–1.59*</td>
</tr>
<tr>
<td><strong>Affectionate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>13.6 ± 1.4</td>
<td>13.2 ± 1.9</td>
<td>–0.61</td>
</tr>
<tr>
<td>Male</td>
<td>12.0 ± 4.2</td>
<td>13.3 ± 1.4</td>
<td>–0.70</td>
</tr>
<tr>
<td>t value</td>
<td>1.12</td>
<td>–0.10</td>
<td></td>
</tr>
<tr>
<td>Subscale Total</td>
<td>12.9 ± 2.9</td>
<td>13.2 ± 1.7</td>
<td>–0.35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>95.4 ± 9.7</td>
<td>98.4 ± 9.3</td>
<td>–1.11</td>
</tr>
<tr>
<td>Male</td>
<td>88.4 ± 25.3</td>
<td>97.9 ± 12.8</td>
<td>–0.89</td>
</tr>
<tr>
<td>Overall Total</td>
<td>92.5 ± 17.5</td>
<td>98.2 ± 10.5</td>
<td>–1.25</td>
</tr>
<tr>
<td>t value</td>
<td>0.80</td>
<td>0.10</td>
<td></td>
</tr>
</tbody>
</table>

* p<.15; ** p<.20.
The between-group comparisons between females vs. males on each component and overall total score did not find any differences on the pre-test or the post-test, all $p$s $>.15$.

Finally, several interesting observations were noted from visually examining the results (and disregarding the statistical tests):

1. In general, all participants tended to score high on each dimension and overall total score on the pre-test and post-test questionnaire.
2. Post-test scores were higher than pre-test scores on each dimension and overall total score (except for females on affectionate support).
3. On the pre-test questionnaire, females scored higher than males on each dimension and overall total score.

**Standardized Social Support Dimensions**

Standardized scores were computed for each social support dimension by dividing the dimension total score by the number of questions for that particular dimension. This conversion allowed for direct comparisons between each dimension by gender on the pre-test and post-test questionnaire (see Table 3). On the pre-test questionnaire, female participants scored significantly higher on affectionate support than emotional support, $t(9) = 2.54, p = .03$, and informational support, $t(9) = 2.39, p = .04$. On the post-test questionnaire, female participants scored significantly higher on emotional support than informational support, $t(9) = 3.03, p = .01$, and marginally higher on positive social interaction than informational support, $t(9) = 1.83, p = .10$. No other differences were
found for female participants; and no differences were found for male participants between each dimension on the pre-test and post-test questionnaire, all $p$s > .10.

Overall, on the post-test questionnaire, participants scored higher on emotional support and positive social interaction than informational support, $t(16) = 3.37$, $p = .00$ and $t(16) = 2.12$, $p = .05$, respectively. Similar to the non-standardized results, the female participants had a greater influence on the overall results than the male participants.

Table 3. *Standardized Means and Standard Deviations for Participants’ Pre–Test and Post–Test Questionnaire by Gender (N = 17)*

<table>
<thead>
<tr>
<th>Type of Social Support</th>
<th>Pre–Test</th>
<th>Post–Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td>4.3 ± 0.5(a)</td>
<td>4.5 ± 0.5(a)</td>
</tr>
<tr>
<td>Informational</td>
<td>4.2 ± 0.5(a)</td>
<td>4.3 ± 0.6(b)(1)</td>
</tr>
<tr>
<td>Positive Social Interaction</td>
<td>4.4 ± 0.5</td>
<td>4.6 ± 0.4 (2)</td>
</tr>
<tr>
<td>Affectionate</td>
<td>4.5 ± 0.5(b)</td>
<td>4.4 ± 0.6</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td>4.1 ± 1.1</td>
<td>4.6 ± 0.5</td>
</tr>
<tr>
<td>Informational</td>
<td>3.9 ± 1.3</td>
<td>4.3 ± 0.9</td>
</tr>
<tr>
<td>Positive Social Interaction</td>
<td>4.0 ± 1.1</td>
<td>4.4 ± 0.6</td>
</tr>
<tr>
<td>Affectionate</td>
<td>4.0 ± 1.4</td>
<td>4.4 ± 0.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td>4.2 ± 0.8</td>
<td>4.5 ± 0.5(a)</td>
</tr>
<tr>
<td>Informational</td>
<td>4.1 ± 0.9</td>
<td>4.3 ± 0.7(b)</td>
</tr>
<tr>
<td>Positive Social Interaction</td>
<td>4.2 ± 0.8</td>
<td>4.5 ± 0.5(a)</td>
</tr>
<tr>
<td>Affectionate</td>
<td>4.3 ± 1.0</td>
<td>4.4 ± 0.6</td>
</tr>
</tbody>
</table>

Means in the same column with different letters in parentheses (a vs. b) were significantly different, $p < .05$. Means in the same column with different numbers in parentheses (1 vs. 2) were marginally significant, $p < .10$. 
Correlation Matrix between the Measures

The final analyses examined the relationships between the pre-test and post-test questionnaires (see Table 4). Although older participants were positively associated with prior experience in Fit for Life, $r(15) = .67, p = .00$, the disproportionate number of older adults who had participated in Fit for Life minimized any other significant correlations with this question.

On the pre-test, higher scores on emotional support were positively associated with informational support, $r(15) = .90, p = .00$, positive social interaction, $r(15) = .95, p = .00$, affectionate support, $r(15) = .89, p = .00$, and overall total score, $r(15) = .98, p = .00$. Additional significant positive correlations were found between informational support and positive social interaction, $r(15) = .91, p = .00$, affection support, $r(15) = .76, p = .00$, and overall social support, $r(15) = .94, p = .00$. Positive social interaction was also correlated with affectionate support, $r(15) = .90, p = .00$, and overall total score, $r(15) = .99, p = .00$. The last significant correlation on the pre-test was between affectionate support and overall total score, $r(15) = .91, p = .00$.

Similarly, nearly all post-test dimensions were significantly correlated with each other and the overall total score, all $p$s < .01, except for positive social interaction and affection support, which was marginally significant, $r(15) = .45, p = .07$.

In sum, pre-test dimensions were positively correlated with each other and the overall total score, and post-test dimensions had the same pattern of results. No correlations were found between the pre-test and post-test dimensions or overall total score.
Table 4. Correlation Matrix Between the Pre–Test and Post–Test Questionnaire (N = 17)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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** p < .01; and * p < .10.

ES = Emotional Support; IS = Informational Support; PSI = Positive Social Interaction; and AS = Affectionate Support.
Summary

Overall, participants experienced marginally significant increases in two categories of social support, emotional and positive social interaction. Statistically significant changes were not found in the other two categories of social support, informational and affectionate. Within gender, only females experienced any significant changes. On the post-test, females scored significantly higher on emotional support and marginally higher on positive social interaction than informational support.

These findings demonstrate that participation in Fit for Life may have a marginally significant impact on specific levels of social support, in addition to the physical benefits of the program. With such a small sample size, it is difficult to draw any firm conclusions about the relationship between participation in a group physical activity program and social support. Additionally, a majority of the participants had participated in Fit for Life before, which could have impacted the results.
Chapter 5
DISCUSSION

The purpose of this study was to examine the relationship between participation in Fit for Life, a group physical activity program for older adults, and social support. Fit for Life participants were given a pre-post survey to measure any changes in social support after participating in the program. The four dimensions of social support measured were emotional support, informational support, positive social interaction, and affectionate support.

Due to the small sample size (17 participants), this study was exploratory in design and the results should be interpreted with caution. However, some findings were worth noting. Participants did experience marginally significant increases in emotional support and positive social interaction, two categories that were of particular interest. Increased levels of emotional support meant that they experienced higher levels of positive affect, empathetic understanding, and encouragement of expression of feelings. Positive social interaction referred to someone to socialize with and do fun things with. These two categories of social support refer more to interacting and communicating with others, and having others to socialize with. These findings suggest that participants had a tendency to experience more emotional support and positive social interaction after participating in the program.

Within gender, only females experienced any significant changes. On the post-test, females scored significantly higher on emotional support and marginally higher on
positive social interaction than informational support. These findings support the overall slight increases in these two categories of social support.

Participants did not see increases in levels of informational support, meaning that they did not receive higher levels of guidance, advice, or feedback. There were also no differences in affectionate support, meaning no increases in love and affection after participating in the program.

Overall, participants tended to score higher on each dimension and overall total score on the pre-test and post-test questionnaire. As mentioned previously, these results should be interpreted cautiously due to the small sample size, the limited number of participants who had not participated in the program before (two), the lack of a control group, and the fact that it was not a random sample. Regardless of these factors, some marginally significant findings were discovered and these should be researched further. This study is a starting point in exploring the relationship between participation in a group physical activity program and social support for older adults.

**Implications for Research**

The results of this study provide exploratory insight into the relationship between participation in a group physical activity program and social support for older adults, and additional research should continue to explore this relationship. This study was limited by a small sample size, and further research should be conducted with larger sample sizes for greater accuracy. It was difficult to draw any conclusions between genders in this study because of the small sample size, but some of the findings suggest that females and
males experienced different changes in levels of social support, and these differences should be studied further. Additionally, a majority of the participants had participated in Fit for Life before, which could have impacted the results. Research should be conducted on larger numbers of participants who have not participated in the group physical activity program when measuring changes in social support. This study looked at adults 55 and older, but did not make comparisons between age groups. Further research should examine differences between age groups (e.g. 55 – 69, 70 – 79, 80+).

This study used social support questionnaires to measure changes in social support, and additional methods of data collection (i.e. interviews) may be beneficial in gathering participant feedback. Lastly, a control group was not used in this study, and should be utilized in future research.

This study was not a true experimental design and did not use random sampling. Therefore, it cannot be generalized to all older adults participating in a group physical activity program. Further research should be conducted on the relationship between participation in a group physical activity program and social support for older adults, through a true random sample.

**Implications for Practice**

While there are limitations to this study, these findings suggest that participation in a group physical activity program could impact levels of social support for older adults. These findings are important because of the population growths that are expected over the next few decades within the older adult population. Increasing numbers of older
adults may lead to a greater demand for services, and group physical activity programs can benefit older adults in many ways. While the physical benefits are widely known, the social benefits of such programs should be taken into consideration. Social isolation and loneliness can affect the overall health and wellbeing of older adults, and physical activity programs can target social concerns while improving physical fitness levels. Practitioners should not only recognize the importance of incorporating social opportunities into their programs, but should be deliberate about implementing social opportunities into their programs. The social aspects of these programs should be used in recruiting and retaining participants, but should also be included as a foundation for the programs. Deliberately targeting and programming for social and physical benefits may positively influence the health and wellbeing of older adults, especially through the substantial population growths over the next few decades. Additional research should further explore the relationship between group physical activity programs and social support for older adults, and practitioners should consider how their programs can provide social benefits in addition to physical benefits when serving older adults.
APPENDIX

Participant Number: _________

Social Support Questionnaire

1. What is your age? _________________

2. What is your gender?  
   □ Male  □ Female

3. Have you participated in Fit for Life before?  
   □ Yes  □ No

People sometimes look to others for companionship, assistance, and various types of support. How often is each of the following kinds of support available to you if you need it? Please circle one number per question.

   1 = None of the Time  
   2 = A little of the Time  
   3 = Some of the Time  
   4 = Most of the Time  
   5 = All of the Time

4. Someone to confide in or talk to about yourself or your problems  1  2  3  4  5

5. Someone to share your worries and fears with  1  2  3  4  5

6. Someone who understands your problems  1  2  3  4  5

7. Someone to share your joys and accomplishments with  1  2  3  4  5

8. Someone you can count on to listen to you when you need to talk  1  2  3  4  5

9. Someone to give you good advice about a crisis  1  2  3  4  5

10. Someone whose advice you really want  1  2  3  4  5

11. Someone to turn to for suggestions about how to deal with a personal problem  1  2  3  4  5
12. Someone to have a good time with
13. Someone to get together with for relaxation
14. Someone to do things with to help you get your mind off things
15. Someone to do something enjoyable with
16. Someone to love and make you feel wanted
17. Someone who shows you love and affection
18. Someone who hugs you
19. A group where I feel supported and encouraged
20. A group that helps me relieve stress or tension
21. A group where I receive advice and guidance
22. A group where I feel like I belong
23. A group that I share common interests with
24. A group of people that I look forward to seeing
25. A group where I feel valued
REFERENCES


