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Abstract

AN ABSTRACT OF THE THESIS FOR THE MASTER OF EDUCATION DEGREE IN HEALTH PROMOTION AND EDUCATION, PRESENTED ON NOVEMBER 14, 2005, AT THE UNIVERSITY OF CINCINNATI, OHIO.

TITLE: Perceived Social Health Benefits among Participants in a Senior Chair Volleyball Program

MASTER COMMITTEE MEMBERS: Dr. Keith A. King, Chair
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The purpose of this study was to examine older adults’ perceived social health benefits associated with participation in Hamilton County General Health District’s (HCGHD) Senior Chair Volleyball program. Participants were mailed a survey instrument design to measure program-specific perceived social health benefits. Descriptive statistics were collected to describe the respondents and each of the survey items and subscales. A series of one-way analyses of variance (ANOVA) were used to determine if program-specific perceived social health benefits differed based on participant demographics.

The study found that the majority of older adults taking part in the program associated participation with social health benefits. Program-specific perceived social health benefits varied based on gender and competitive status. Women and those players who labeled themselves as competitive rated their perceived social health benefits to be significantly higher. Findings of this study showed the potential effect a physical activity program can have on social health in older adults. Identifying perceived social health benefits associated with group physical activity may assist health professionals in developing effective health promotion programs.
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Chapter One

The Problem

In accordance with the trend of global aging, the US population is continuously growing older (US Census Bureau, 2001). From 1990 to 2020, people 65 and older are projected to increase to 54 million, with one in six Americans considered elderly (US Census Bureau, 1993). In addition to the increase in number of people considered elderly, older adults also live longer (National Center for Health Statistics, 2005). Compared to a life expectancy of 47 years in 1900, the life expectancy in 2002 increased dramatically to 77 years.

In addition to the often described physical health concerns facing older adults, decreased quality and quantity of social support and feelings of loneliness also accompany old age (Pinquart & Sörensen, 2001). Young (1982) defines loneliness as “the perceived absence of satisfying social relationships, accompanied by symptoms of psychological distress that are related to the perceived absence.” In an examination of loneliness and related risk factors among people 65-and-older living in Great Britain, Victor and colleagues (2005) found that about 7 percent of older adults report feeling lonely often or always. The authors concluded that this finding is comparable to loneliness rates previously discovered in many parts of the world. These researchers also found that about one third of people 65-and-older admit to sometimes feeling lonely.

Several factors are associated with increased risk for feelings of loneliness in old age. Primarily, older adults have a greater chance of experiencing loss (Pacific Northwestern Extension, 1993). The number of roles fulfilled by older adults declines
over time, and the quality of social networks changes. Retirement serves as a prime example of how the loss of one single primary role may lead to a significant decrease in self-esteem, status, number of friends, and income. Victor and colleagues (2005) found that there are six factors related to vulnerability to loneliness: being widowed, spending increased time spent alone over the last decade, feeling increasingly lonely over the last decade, having a mental disorder, being in poor health, and having a negative perception of one’s personal health. Wenger and Burholt (2003) found many of the same interactions in their longitudinal study of the factors associated with loneliness among older adults. Death of a spouse, widowhood, relocation, and poor health increased the risk of feeling lonely.

Social isolation and loneliness among older adults has been linked to a variety of health concerns. When analyzing risk factors for depression among a sample of older males, Alpass and Neville (2003) found a stronger relationship between depression and loneliness than any other variable. In addition, Waern, Rubenowitz, and Wilhemson (2002) discovered that prevalence of both loneliness and depression were accurate predictors of suicide among older adults. Barrick and Connors’ 2002 study on substance abuse did not discuss whether social isolation and loneliness were reasons for initial alcohol abuse. However, social support is viewed as vital in increasing the likelihood of maintaining alcohol abstinence and decreasing the possibility of relapse into alcohol abuse among older adults. Finally, loneliness is also reported to be associated with cardiovascular disease among older adults. Sorkin and colleagues (2002) found that loneliness increased the likelihood of having a heart condition. The researchers asserted
that an unfavorable perception of one’s health status is associated with both feeling lonelier and having a heart condition. However, perceived health status alone does not fully account for the association between loneliness and heart condition status.

In addition to maintaining an active lifestyle to improve one’s physical health, experts also recommend physical activity as a way for older adults to stay psychologically and socially healthy. The World Health Organization (1996) has reported on both immediate and long-term social benefits of remaining physically active. Physical activity empowers older adults and encourages a more socially active part in society. Participation in group physical activity can lead to the formation of new friendships and widened existing social networks. It also offers one of the few opportunities for older adults to acquire positive new roles. When Stathi and colleagues (2002) studied perceived well-being of older adults who participated in physical activity, their findings supported the WHO’s recommendations. Respondents frequently indicated that physical activity allowed them to stay fit, which helped to reduce isolation that often results from decreased physical functioning. In addition, all participants stated that physical activity provided an opportunity for them to meet people with similar interests and to broaden their social lives.

In a study examining reasons older Australians participated in exercise and sports, Kolt, Driver, and Giles (2004) found that several of the main reasons for exercise participation involved social factors. Fitness items such as “keeping healthy” and “I want to be physically fit” ranked the highest overall among both men and women. However, selected social reasons were also cited. Participants frequently indicated that they “liked
the company,” “wanted to be with their friends,” and “liked the social aspects.” Women rated social motives for participating in physical activity significantly more importantly than their male counterparts, and the old group (75-84 years) and oldest old group (85+ years) valued social reasons related to exercise involvement higher than younger participants.

Similar subjective social reasons for exercising were discovered by Roper, Molnar, and Weisberg (2003) in their case study of a male 88 year-old master runner. The man reported enjoying associating and socializing with other competitors and noted a community-like feeling of running in local races. The man emphasized that he would continue to run as long as he remained competitive. Motivation for organized physical activity among older adults who labeled themselves as competitors has been found to be different than that of those who considered themselves to be non-competitive exercisers (Smith & Storandt, 1997). The non-competitive exercisers tend to focus primarily on the health benefits of exercise, whereas competitive exercisers tend to cite additional reasons for being physically active, such as competency and socialization.

In their study of psychological well-being and social interactions among older adults Nezlek and colleagues (2002) found that study participants who reported higher quality social interactions also indicated greater life satisfaction. In addition, well-being was positively related to quantity of interaction. Study participants who were more socially active reported greater life satisfaction than those who were less socially active. McAuley and colleagues (2000) also found that frequency of exercise participation and social support was related to improvements in subjective well-being. Higher frequency
of participation and accomplishment of improvements in social support during an intervention led to a significantly higher degree of life satisfaction among older adults. An especially interesting aspect of this study was the approach taken that the physical activity group constituted its own social environment, providing unique (and otherwise nonexistent) opportunities for interactions.

Statement of the Problem

Social isolation and loneliness are health concerns reported among older adults (Pinquart & Sörensen, 2001). Older adults who indicate that they feel lonely are at high risk for depression (Alpass & Neville, 2003), suicide (Waern, Rubenowitz, & Wilhemson, 2003), relapse into alcohol abuse (Barrick & Connors, 2002) and having a heart condition (Sorkin, Rook, & Lu, 2002). In an effort to prevent social isolation and loneliness, the World Health Organization (WHO) (1996) recommends that older adults maintain an active lifestyle. Group exercise helps to preserve existing social networks and offers a rare opportunity to build new relationships (Stathi, Fox, & McKenna, 2002). Older adults who report having high quality and quantity of social interactions also indicate greater life satisfaction (Nezlek, Richardson, Green, & Schatten-Jones, 2002).

The purpose of this study was to examine older adults’ perceived social health benefits associated with participation in Hamilton County General Health District’s (HCGHD) Senior Chair Volleyball program. Findings will help evaluate the effect this group physical activity program has on social health in older adults. Identifying
perceived social health benefits associated with group physical activity may also assist health professionals in developing effective health promotion programs.

Research Questions

1. To what extent do older adults who take part in HCGHD’s Senior Chair Volleyball program perceive that participation leads to social health benefits?
2. Do older adults’ perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program differ based on sex, age, spouse participation, level of competitiveness, years of involvement, or game venue.

Hypotheses

Hypothesis 1: Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for women will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for men.

Alternative Hypothesis 1: Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for men will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for women.

Null Hypothesis 1: There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for women
and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for men.

**Hypothesis 2:** Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who participate with a spouse will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who do not participate with a spouse.

**Alternative Hypothesis 2:** Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who do not participate with a spouse will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who do participate with a spouse.

**Null Hypothesis 2:** There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who participate with a spouse and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who do not participate with a spouse.

**Hypothesis 3:** Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as competitive will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as non-competitive.
Alternative Hypothesis 3: Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as non-competitive will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as competitive.

Null Hypothesis 3: There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as very or extremely competitive and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as not at all or somewhat competitive.

Hypothesis 4: Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are playing in at least their second season will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are playing in their first season.

Alternative Hypothesis 4: Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are playing their first season will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are playing in at least their second season.

Null Hypothesis 4: There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those
who are playing in at least their second season and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are playing their first season.

**Hypothesis 5:** Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 75 years of age or older will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 74 years of age or younger.

**Alternative Hypothesis 5:** Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 74 years of age or younger will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 75 years of age or older.

**Null Hypothesis 5:** There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 75 years of age or older and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 74 years of age or younger.

**Hypothesis 6:** Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who play their games at a retirement community or assisted living center will be higher than perceived social health
benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who play their games at a community/recreation center or a senior center.

*Alternative Hypothesis 6:* Perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who play their games at a community/recreation center or a senior center will be higher than perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who play their games at a retirement community or assisted living center.

*Null Hypothesis 6:* There will be no differences in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who play their games at a retirement community or assisted living center and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who play their games at a community/recreation center or a senior center.

*Delimitations*

1. Older adults surveyed were all participants of HCGHD’s Senior Chair Volleyball program.
2. The survey used assessed perceived social and physical health benefits derived from participation in HCGHD’s Senior Chair Volleyball program. Other potential health benefits were not measured.
Limitations

1. Study results were limited by the participants’ ability to read and understand the survey questions used.
2. Study results were limited by participants’ willingness to answer all survey questions in an open and honest manner.

Assumptions

1. Participants were able to read and understand the questions on the survey instrument.
2. Participants answered questions honestly and truthfully.

Operational Definitions

1. Program-specific perceived social health benefits — any internal (emotions) or external (availability of social support) social benefits, such as meaningful interpersonal interactions, maintenance/expansion of roles, and help in maintenance/expansion of social network quantity/quality, that either decrease the risk of social isolation and loneliness or improve quality of life. Such benefits needed to be subjectively indicated by older adults and must be a result of participation in HCGHD’s Senior Chair Volleyball program. For the purpose of this study, program-specific perceived social health benefits were measured via a ten item scale requiring individuals to respond using a five-point Likert-type scale
(1=strongly disagree, 5=strongly agree), resulting in a potential subscale scoring range of 10 to 50.

2. Older adults – Adults who are 55 years of age and older.

3. HCGHD’s Senior Chair Volleyball program – A seated volleyball program for Hamilton County older adults played with a beach ball and utilizing equipment and rules especially designed for the program. The program is implemented every year from the end of March to the middle of October by the Hamilton County General Health District
Chapter 2

Review of Literature

Social isolation and loneliness are health concerns reported among older adults (Pinquart & Sörensen, 2001). Older adults who indicate that they feel lonely are at high risk for depression (Alpass & Neville, 2003), suicide (Waern, Rubenowitz, & Wilhemson, 2003), relapse into alcohol abuse (Barrick & Connors, 2002) and having a heart condition (Sorkin, Rook, & Lu, 2002). In an effort to prevent social isolation and loneliness, the World Health Organization (WHO) (1996) recommends that older adults maintain an active lifestyle. Group exercise helps to preserve existing social networks and offers a rare opportunity to build new relationships (Stathi, Fox, & McKenna, 2002). Older adults who report having high quality and quantity of social interactions also indicate greater life satisfaction (Nezlek, Richardson, Green, & Schatten-Jones, 2002).

The purpose of this study was to examine older adults’ perceived social health benefits associated with participation in Hamilton County General Health District’s (HCGHD) Senior Chair Volleyball program. Findings will help evaluate the effect this group physical activity program has on social health in older adults. Identifying perceived social health benefits associated with group physical activity may also assist health professionals in developing effective health promotion programs.

Chapter one of this thesis introduced the issue of social isolation and loneliness among older adults. Specific health problems often associated with social isolation were identified and prevalence of loneliness was briefly discussed. The first chapter identified
group physical activity as one of the most effective ways to address low social health among older adults. The chapter concluded with the study purpose statement and the hypotheses to be tested.

This chapter presents a review of the literary regarding social isolation and loneliness among older adults. Background information on the aging of America and health status of older adults introduces the reader to the issue of loneliness. Social isolation and loneliness among older adults is discussed in the form of prevalence, causes, connection to morbidity and mortality, and possible solutions.

**Growing US Senior Population**

In accordance with the trend of global aging, the US population is continuously growing older (US Census Bureau, 2001). From 1990 to 2020, people 65 and older are projected to increase to 54 million, with one in six Americans considered elderly (US Census Bureau, 1993). The growth rate during this time period for people 65 and older will be more than double that of the total population. In 2050, the gerontological explosion is projected to finally subside, at which time about 79 million people will be regarded as elderly. In addition to the increase in number of people considered elderly, older adults also live longer (National Center for Health Statistics, 2005). Compared to a life expectancy of 47 years in 1900, the life expectancy in 2002 increased dramatically to 77 years.

Data compiled from the 2000 Census indicates that 35 million people are 65-and-older (US Census Bureau, 2004). Even though this group increased in numbers from
1990 to 2000, as a proportion of the total US population, people 65-and-older dropped marginally. Characteristics of this group include a higher ratio of females compared to males, with the 85-and-older population having a female-to-male ration of 2:1. More than half of the persons 65-and-older are married. However, as age increase, so does the number of people widowed, with women once again disproportionately represented. Overall, in 2000, 28 percent of people 65-and-older lived alone in households. This rate steadily increased along with age, indicating that out of those 85-and-older, 39 percent lived by themselves. Combined, 6 percent of the 65-and-older population lived in group quarters (such as group homes or nursing homes), with those 85-and-older once again reporting the highest occurrence at 22 percent. The rate of disability for 3 out of 5 measures used in the 2000 Census (sensory, physical, mental, self-care, and difficulty going outside the home) was at least 3 times higher among those 65-and-older compared to the total population. The percentage of older adults who reported each type of disability increased with age. Almost half of people 85-and-older reported a disability that resulted in difficulties going outside the home. Vocationally, only 18 percent of men and 10 percent of women 65-and-older are still part of the overall US labor force.

Social Isolation and Loneliness among Older Adults

In addition to the often described physical health concerns facing older adults, decreased quality and quantity of social support and feelings of loneliness can also accompany old age. In their meta-analysis of influences on loneliness in older adults, Pinquart and Sörensen (2001) reported that research studies frequently separate social
support into external factors and loneliness into internal factors. Social support is measured by the availability and worth of social support in the form of the number of people in social network and quality of contacts. Loneliness is most commonly measured by direct questions regarding feelings of loneliness or by using one of the multiple scales designed to indicate the same. However, the difference between the two terms could be considered subtle (Alpass & Neville, 2003). Young (1982) defines loneliness as “the perceived absence of satisfying social relationships, accompanied by symptoms of psychological distress that are related to the perceived absence.” As presented, Young’s (1982) definition of loneliness does not only take into account the emotional response of feeling lonely. It also argues that such feelings may very well be based on a perceived absence of social relationships. Therefore, during this review of relevant literature, lack of social support and loneliness are grouped together as one health issue facing older adults.

The prevalence of loneliness among older adults seems to be a difficult concept to assess. Research examined by Pinquart and Sörensen (2001) sought to measure loneliness either by asking subjects directly whether they had experienced loneliness, or by utilizing one of the many scales designed to assess loneliness as a multifaceted concern. However, the authors asserted that the reported rates of loneliness may be underestimated. Study participants may be hesitant to admit feeling lonely, both because of negative undertones of the term and to prevent future social rejection. Also, it is possible that older adults who feel lonely are less likely to take part in relevant research.
In an examination of loneliness and related risk factors among people 65-and-older living in Great Britain, Victor and colleagues (2005) found that about 7 percent of older adults report feeling lonely often or always. The authors concluded that this finding is comparable to loneliness rates previously discovered in many parts of the world. These researchers also found that about one third of people 65-and-older admit to sometimes feeling lonely. Even though Victor and colleagues (2005) mentioned this rate to be higher than that reported in previous studies, most studies reviewed by Pinquart and Sörensen (2001) seem to show similar rates. The same general rates for both high and moderate loneliness were found by Skarupski and Pelkowski (2003) in their interviews with older adults regarding multipurpose senior centers, and by Wenger and Burholt (2004) in their longitudinal study of factors associated with loneliness among older adults.

Several factors are associated with increased risk for feelings of loneliness in old age. Primarily, older adults have a greater chance of experiencing loss (Pacific Northwestern Extension, 1993). The number of roles fulfilled by older adults declines over time, and the quality of social networks changes. Retirement serves as a prime example of how the loss of one single primary role may lead to a significant decrease in self-esteem, status, number of friends, and income. A change in living arrangement, whether by choice or necessity, is likely to remove a person from familiar surroundings and people. Decreased functional health (such as loss of vision or mobility) may force a previously self-sufficient person to depend on outside assistance for everyday living. In
addition, the risk of personal disability and/or illness increases with old age. Loss may also be experienced by spouses, family members, and friends becoming ill and/or dying.

Victor and colleagues (2005) found that both demographic and situational changes related to old age contribute to the social epidemiology of loneliness. The authors indicated that many of the factors initially identified as having a statistically significant relationship with loneliness (such as gender and age) may not necessarily contribute independently to the rate of loneliness. This does not mean that they lack importance, but instead that they should be examined in combination with other variables. Through a multivariate statistical analysis, the authors concluded that there are six factors related to vulnerability to loneliness: being widowed, spending increased time spent alone over the last decade, feeling increasingly lonely over the last decade, having a mental disorder, being in poor health, and having a negative perception of one’s personal health. Wenger and Burholt (2004) found many of the same interactions in their longitudinal study of the factors associated with loneliness among older adults. Death of a spouse, widowhood, relocation, and poor health increased the risk of feeling lonely.

Social isolation and loneliness among older adults is linked to a variety of health concerns. When analyzing risk factors for depression among a sample of older males, Alpass and Neville (2003) found a strong relationship between depression and loneliness. The study was conducted using a questionnaire that assessed biographical measures, physical health, social support, loneliness, and depression. Even though it was recognized by the authors that depression often is argued to be mainly a response to declining health and functional impairment in older adults, their 2003 study revealed a
stronger relationship between loneliness and depression than any other independent variable. Walton, Romans-Clarkson, Mullen, and Herbison (1990) also confirmed a relationship between perceived insufficient social interaction and depression among their sample of older women. Even though the study suggests that there was ample opportunity for making friends in the population studied, all of the depressed women reported low availability of social interaction.

Social isolation and loneliness are also risk factors for suicide among older adults. When examining predictors of suicide among a sample of old elderly, Waern, Rubenowitz, and Wilhemson (2002) discovered that prevalence of both loneliness and depression are accurate predictors of suicide. Their study included 85 suicide cases and 153 control subjects with similar demographic characteristics. Information regarding recent life events and health was collected through interviews, either directly with the controls used in the study or with suicide descendents, and by reviewing relevant medical records. In the final data analysis, depression (both minor and major) and loneliness showed a statistically significant relationship with suicide for people 65-and-older. Accordingly, in a multi-national examination of elderly suicide, Pearson and colleagues (1997) found similar results. Their summary of relevant literature implicates both isolation and depression among older adults as common risk factors for suicide.

Another issue related to social isolation and loneliness among older adults is substance abuse. Barrick and Connors (2002) reported that the scope and prevalence of alcohol related problems in older adults appears to be underreported, and with the current shifts in demographics, the authors believed that the problem is likely to grow. The 2002
study did not discuss whether social isolation and loneliness were the reasons for initial alcohol abuse. However, social support is viewed as vital in increasing the likelihood of maintaining alcohol abstinence and decreasing the possibility of relapse into alcohol abuse among older adults.

Loneliness is also reported to be a cause of cardiovascular disease among older adults. When building on previous studies that indicated social isolation as major risk factor to morbidity and mortality from cardiovascular disease, Sorkin and colleagues (2002) found that loneliness increased the likelihood of having a heart condition. The researchers asserted that an unfavorable perception of one’s health status is associated with both feeling lonelier and having a heart condition. However, perceived health status alone does not fully account for the association between loneliness and heart condition status. Lack of emotional support and lack of companionship were also found to be significantly related to an increased risk of having a coronary condition.

*Social Health Benefits Associated with Physical Activity*

In addition to maintaining an active lifestyle to improve one’s physical health, experts also recommend physical activity as a way for older adults to stay psychologically and socially healthy. In an effort to prevent the decline in social life satisfaction that can accompany old age, the World Health Organization (1996) has reported on both immediate and long-term social benefits of remaining physically active. Physical activity empowers older adults and encourages a more socially active part in society. Participation in group physical activity can lead to the formation of new
friendships and widened existing social networks. It also offers one of the few opportunities for older adults to acquire positive new roles (Stathi, Fox, & McKenna, 2002).

When Stathi and colleagues (2002) studied perceived well-being of older adults who participated in physical activity, their findings supported the WHO’s recommendations. In the 2002 study, developmental, material, physical, mental, and social dimensions of well-being were examined. After completing two instruments used to stimulate discussion, participants chose to be interviewed either individually or in a group setting. Respondents frequently indicated that physical activity allowed them to stay fit, which helped to reduce isolation that often results from decreased physical functioning. In addition, all participants stated that physical activity provided an opportunity for them to meet people with similar interests and to broaden their social lives.

In a study examining reasons older Australians participated in exercise and sports, Kolt, Driver, and Giles (2004) found that several of the main reasons for exercise participation involved social factors. A sample of 815 community-dwelling older adults (399 men and 416 women) who were regular exercisers (participated in exercise or sports at least once a week) complete a 30-item motivation questionnaire. Participants rated each item using a 3-point scale (not at all important, somewhat important, and very important), to indicate how important each statement was in relation to their reasons for exercise participation. In agreement with earlier findings, fitness items such as “keeping healthy” and “I want to be physically fit” ranked the highest overall among both men and
women. However, selected social reasons were cited. Participants frequently indicated that they “liked the company,” with 46.6 percent of the total sample rating the statement as very important. “Wanting to be with their friends” and “liking the social aspects” were two other items given high ratings with just over 40 percent of participating older adults.

In the Kolt, Driver and Giles (2004) study, women rated social motives for participating in physical activity significantly more importantly than their male counterparts. Other studies found the same difference between sexes. Compared to men, women more frequently indicate social triggers as the reason for involvement in physical activity (Damush, Perkins, Mikesky, Roberts, & O’Dean, 2005; Gillis, Grossman, McLellan, King, & Stewart, 2002). Participants who were in the middle-age group (55-64 years old) placed more emphasis on social benefits compared to those young-old group (65-74 years). In addition, the old group (75-84 years) and oldest old group (85+ years) valued social reasons related to exercise involvement higher than younger participants.

Similar subjective social reasons for exercising were discovered by Roper, Molnar, and Weisberg (2003) in their case study of a male 88 year-old master runner. The researchers set out to extend their understanding of older sports participants, and whether continuity in sports represented a primary adaptive strategy for coping with the aging process. One of the themes that emerged as crucial to the experience of older adults exercising was the significance of social support. Family, friends, other competitors, and the running community in general were all specific social categories mentioned as contributing to the maintenance of an active lifestyle. The most significant
subjective source of social encouragement, both related to the commitment and adherence to running and to a healthy lifestyle in general, was the runner’s wife. Among older adults who participate in physical activity, the importance of having a spouse or close family member in a supportive or co-participatory role has often been reported (Damush et al., 2005; Deforche & de Bourdeaudhuij, 2000). Whether acting like a trigger for joining a physical activity program or acting as a motivational factor for staying with an exercise routine, spousal support has been found to be instrumental.

Roper and colleagues (2003) also emphasized the social atmosphere of local races. The master runner interviewed in this case study reported enjoying associating and socializing with other competitors and noted a community-like feeling of running in local races. Also, even though the primary purpose of running was enjoyment and living a healthy life, attitudes reflected in the research by Kolt and colleagues (2004), the runner still considered himself to be a competitor. He noted that he would continue to run as long as he remained competitive. Motivation for organized physical activity among older adults who labeled themselves as competitors has been found to be different than that of those who considered themselves to be non-competitive exercisers (Smith & Storandt, 1997). The non-competitive exercisers tend to focus primarily on the health benefits of exercise, whereas competitive exercisers tend to cited additional reasons for being physically active, such as competency and socialization.
Social Interactions and Life Satisfaction in Older Adults

Life satisfaction in old age depends on a multitude of factors. In their study of psychological well-being (including life satisfaction and loneliness) and social interactions among older adults, Nezlek and colleagues (2002) found that study participants who reported higher quality social interactions also indicated greater life satisfaction. However, this relationship was observed exclusively in married subjects. The authors theorized that the lack of similar findings for unmarried participants may be because (for them) there is no one person as socially prominent as a spouse. Also, because of a progressive loss of role sets that do not include their spouse (from such events as retirement), the spousal relationship is likely to be particularly important for retired married persons.

Nezlek and colleagues (2002) also found that well-being was positively related to quantity of interaction. Study participants who were more socially active reported greater life satisfaction than those who were less socially active. In contrast to the relationship between quality of interactions and marital status, this connection was found for both married and unmarried persons. The authors acknowledged that this particular statistical relationship is contradictory to some earlier research findings. Reasons for this discrepancy may well be based on a difference in the age of the population studied. Compared to young adults who mainly value quality of contacts because of role-related substantial social networks, greater quantity of contact may be enough to raise well-being among the elderly. Also, even though quantity of social interactions may be unrelated to
more clinically based measures of elderly well-being, it is still likely to positively affect a concept such as general satisfaction with life.

In their study of group physical activity modes, social support encountered during such interventions, and resulting changes in subjective well-being, McAuley and colleagues (2000) also found that frequency of participation and social support was related to improvements in subjective well-being. Disregarding the type of group physical activity, higher frequency of participation and accomplishment of improvements in social support during an intervention led to a significantly higher degree of life satisfaction among older adults. An especially interesting aspect of this study was the approach taken that the physical activity group constituted its own social environment, providing unique (and otherwise nonexistent) opportunities for interactions. This may very well be the reason for the decline in life satisfaction observed after the completion of the intervention during the study follow-up. Based on the fact that social support is argued to both improve and prevent decline in life satisfaction among older adults, the authors suggested that efforts should be made to continuously advance group social support, both during and outside times of participation. Finally, McAuley and colleagues (2000) also found that the level of loneliness declined among participating older adults during the physical activity program. In this case, activity frequency did not seem to play a direct role in the level of reduction. It is obvious, however, that the exercise environment created by group physical activity programs can provide the necessary social cushion to combat feelings of loneliness.
Summary

In addition to the often highlighted physical health concerns facing those 65 and older, the problem of social isolation and loneliness deserves significant attention. Older adults who indicate a high rate of loneliness are more likely to be depressed, at higher risk for suicide, relapse into alcohol abuse, and have an increased chance of developing coronary conditions. One of the most effective ways of preventing decline in physical and social health among older adults is to maintain an active lifestyle. Group physical activity offers older adults an opportunity to preserve existing social networks and may create meaningful new roles. Older adults who are physically active frequently indicate that besides the expected physical benefits, social reasons are considered very important for both initiating and maintaining this behavior.

It is important to evaluate the effect group physical activity programs has on social quality of life in older adults. Many times, the effectiveness of physical activity programs are only assessed in terms of physical health measurements. However, social health is also affected and should therefore be measured. Health professionals should acknowledge the negative effects that social isolation and loneliness can have on older adults and identify the positive effects that physical activity can have on social health. Health professionals should consider including social health measures when evaluating their physical activity programs among older adults. By doing so, they may find various social health benefits that can help show the overall efficacy and utility of the program.
Chapter Three

Methods

Social isolation and loneliness are health concerns reported among older adults (Pinquart & Sörensen, 2001). Older adults who indicate that they feel lonely are at high risk for depression (Alpass & Neville, 2003), suicide (Waern, Rubenowitz, & Wilhemson, 2003), relapse into alcohol abuse (Barrick & Connors, 2002) and having a heart condition (Sorkin, Rook, & Lu, 2002). In an effort to prevent social isolation and loneliness, the World Health Organization (WHO) (1996) recommends that older adults maintain an active lifestyle. Group exercise helps to preserve existing social networks and offers a rare opportunity to build new relationships (Stathi, Fox, & McKenna, 2002). Older adults who report having high quality and quantity of social interactions also indicate greater life satisfaction (Nezlek, Richardson, Green, & Schatten-Jones, 2002).

The purpose of this study was to examine older adults’ perceived social health benefits associated with participation in Hamilton County General Health District’s (HCGHD) Senior Chair Volleyball program. Findings will help evaluate the effect this group physical activity program has on social health in older adults. Identifying perceived social health benefits associated with group physical activity may also assist health professionals in developing effective health promotion programs.

Chapter one of this thesis introduced the issue of social isolation and loneliness among older adults. Specific health problems often associated with social isolation were identified and prevalence of loneliness was briefly discussed. The first chapter identified
group physical activity as one of the most effective ways to address low social health among older adults. The chapter concluded with the study purpose statement and the hypotheses to be tested.

Chapter 2 presented a review of the literary regarding social isolation and loneliness among older adults. Background information on the aging of America and health status of older adults introduced the reader to the issue of loneliness. Social isolation and loneliness among older adults was discussed in the form of prevalence, causes, connection to morbidity and mortality, and possible solutions.

This chapter will discuss the research methods used in this study. More specifically, it will present a thorough overview of the study participants, instrumentation, procedures for data collection, and data analysis.

Participants

The participants in this study were all older adults 55 years of age or older residing in or around Hamilton County, Ohio. Through county senior, community, and recreation centers, assisted living centers, and retirement communities, they were all registered HCGHD Chair Volleyball league players for the 2005 season. The 2005 season had 28 co-ed teams registered from 18 different sites, with each team consisting of a minimum of 6 registered players. Participants were identified by a registration list kept and updated each year by HCGHD. This study used a census method to survey all 300 players listed.
Methods

Instrumentation

A two-page, 22 item survey instrument was developed by the researcher to measure program-specific perceived social health benefits among participating older adults (Appendix A). The first page of the instrument contained 10 statements intended to measure participants’ level of agreement in regards to perceived social health benefits associated with program participation. These statements were designed to combine internal (emotions) and external (social support/networks) factors. Options for responses were formatted using a five-point Likert-type scale (1= strongly disagree, 5=strongly agree). Each item received a score for a total subscale score ranging from 10 to 50. The first part of the survey also contained 5 statements constructed to measure additional health benefits associated with program participation and one question designed to measure participants’ level of competitiveness. The second page of the instrument asked participants to provide the following demographic information: sex, age, whether they participated in the program with a spouse, years of program involvement, and type of game venue (type of facility where home games are played).

Face validity was established by a comprehensive review of relevant literature and by developing the survey based on an existing instrument previously used to measure loneliness in older adults (Russell, Peplau, & Cutrona, 1980). The survey instrument used in the present study was modified and then tested for validity and reliability. Content validity was established by distributing the survey to a panel of experts for their review. The purpose was to ensure that the instrument measured all of the domains of program-specific perceived social health benefits. The panel consisted of two professors...
in health education and one community health educator with experience in physical activity among older adults. Each member was originally sent an electronic copy of the cover letter and the survey. In addition, a review sheet was included for panel members to record comments and suggestions. For the study proposal hearing, panel members brought a printed copy of the cover letter and the survey, and a completed review sheet with ideas for revisions. The suggestions of the panel were incorporated into the final version of the instrument.

Stability reliability was assessed via a test/re-test procedure. A convenient sample of 9 older adults on one Senior Chair Volleyball team completed the survey on two different occasions. The sampling occurred at the same location one week apart, and the instrument was distributed to the team during a practice session both times. Statistical analysis of the test/retest procedure revealed a Pearson correlation of .536. In addition, internal consistency reliability on the program-specific perceived social health benefits subscale yielded a Cronbach alpha of .9340, ensuring that the survey was reliable.

Procedures

Following study approval from the University of Cincinnati Institutional Review Board, the final two-page instrument was mailed to the home addresses of all 300 registered HCGHD Senior Chair Volleyball program participants. These addresses were obtained from the list kept and periodically updated by HCGHD. A self-addressed stamped envelope and a cover letter describing the study, emphasizing the voluntary nature of the survey but importance of responding, and assuring participant
Methods

Confidentiality were sent with the instrument (Appendix B). The participants were also informed in the cover letter of estimated time of completing the instrument, and were instructed to use the included self-addressed stamped envelope when returning the completed survey. These envelopes were coded so the researcher could determine the participants who had returned the survey. In addition to the cover letter, the directions on how to complete the survey also informed potential respondents that returning of the instrument demonstrated consent of participating in the study.

After two weeks, the researcher compiled the returned instruments. For those individuals who had not yet responded, a second survey, cover letter (Appendix C), and self-addressed stamped envelope were mailed.

Data Analysis

Descriptive statistics (percentages, means, and standard deviations) were used to describe the demographic characteristics of the participants and each of the survey items and subscales. A series of one-way analyses of variance (ANOVA) was used in hypothesis testing to determine if program-specific perceived social health benefits differed based on sex, age, spouse involvement, level of competitiveness, years of playing, and type of game facility. The data collected was analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows. An alpha level of .05 was used to determine significance.
Chapter 4

Results and Discussion

Social isolation and loneliness are health concerns reported among older adults (Pinquart & Sörensen, 2001). Older adults who indicate that they feel lonely are at high risk for depression (Alpass & Neville, 2003), suicide (Waern, Rubenowitz, & Wilhemson, 2003), relapse into alcohol abuse (Barrick & Connors, 2002) and having a heart condition (Sorkin, Rook, & Lu, 2002). In an effort to prevent social isolation and loneliness, the World Health Organization (WHO) (1996) recommends that older adults maintain an active lifestyle. Group exercise helps to preserve existing social networks and offers a rare opportunity to build new relationships (Stathi, Fox, & McKenna, 2002). Older adults who report having high quality and quantity of social interactions also indicate greater life satisfaction (Nezlek, Richardson, Green, & Schatten-Jones, 2002).

The purpose of this study was to examine older adults’ perceived social health benefits associated with participation in Hamilton County General Health District’s (HCGHD) Senior Chair Volleyball program. Findings will help evaluate the effect this group physical activity program has on social health in older adults. Identifying perceived social health benefits associated with group physical activity may also assist health professionals in developing effective health promotion programs.

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Chapter 3 discussed the research methods used in this study. More specifically, it presented a thorough overview of the study participants, instrumentation, procedures for data collection, and data analysis.

This chapter presents results of this study. The overall response rate, demographic characteristics of participants, program-specific perceived social health benefits associated with the chair volleyball program and the hypothesis tests are included.

**Response Rate**

The survey instrument was mailed to all registered HCGHD Senior Chair Volleyball League participants (N=300). A total of 222 surveys were completed and returned, resulting in an overall response rate of 74% (222/300). All of the returned surveys were included in the final data analysis.
Demographics and Background Characteristics

The greater part of league participants were female (79.7%) and not currently married (67%) (Table 4.1). Only 23 players (10.5%) reported participating in league play with their spouse. Approximately three in four (79.4%) played chair volleyball at a senior center or recreation facility. Nearly two out of three respondents (64.3%) considered themselves to be very or extremely competitive. Just over half of all program participants were 75 years of age or older (55.7%), and a considerable majority of players were taking part in at least their second season of league play (85.3%). Gender of respondents was representative of the overall study population.
### Table 4.1. Demographic and Background Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>177</td>
<td>79.7</td>
</tr>
<tr>
<td>Male</td>
<td>45</td>
<td>23.3</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>120</td>
<td>54.3</td>
</tr>
<tr>
<td>Married</td>
<td>73</td>
<td>33.0</td>
</tr>
<tr>
<td>Divorced</td>
<td>15</td>
<td>6.8</td>
</tr>
<tr>
<td>Single</td>
<td>9</td>
<td>4.1</td>
</tr>
<tr>
<td>Living with Unmarried Partner</td>
<td>4</td>
<td>1.8</td>
</tr>
<tr>
<td>Separated</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Spouse Participation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not Participate with a Spouse</td>
<td>196</td>
<td>89.5</td>
</tr>
<tr>
<td>Participate with a Spouse</td>
<td>23</td>
<td>10.5</td>
</tr>
<tr>
<td><strong>Type of Game Facility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior Center</td>
<td>100</td>
<td>45.9</td>
</tr>
<tr>
<td>Recreation Facility</td>
<td>73</td>
<td>33.5</td>
</tr>
<tr>
<td>Retirement Community</td>
<td>27</td>
<td>12.4</td>
</tr>
<tr>
<td>Senior Apartments</td>
<td>14</td>
<td>6.4</td>
</tr>
<tr>
<td>Assisted Living Center</td>
<td>4</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Level of Competitiveness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all Competitive</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>Somewhat Competitive</td>
<td>72</td>
<td>33.8</td>
</tr>
<tr>
<td>Very Competitive</td>
<td>104</td>
<td>48.8</td>
</tr>
<tr>
<td>Extremely Competitive</td>
<td>33</td>
<td>15.5</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 74 years</td>
<td>97</td>
<td>44.3</td>
</tr>
<tr>
<td>75 years or older</td>
<td>122</td>
<td>55.7</td>
</tr>
<tr>
<td><strong>Years of League Participation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 year</td>
<td>32</td>
<td>14.7</td>
</tr>
<tr>
<td>2 years or more</td>
<td>185</td>
<td>85.3</td>
</tr>
</tbody>
</table>

Note: Percents refers to valid percents. Missing values excluded.

N=222
Program-Specific Perceived Social Health Benefits

All older adults participating in HCGHD’s Senior Chair Volleyball League were presented with ten statements designed to measure program-specific perceived social health benefits. Respondents indicated their level of agreement with each statement by checking the appropriate response option on a five point Likert type scale (1 = SD, 5 = SA). Scores for each item were summed to determine a total subscale score. The total subscale score ranged from 10 to 50 ($M = 40.14, SD = 6.3$). Mean scores for each of the ten statements ranged from 4.30 ($SD = 0.695$) to 3.59 ($SD = 0.936$) (Table 4.2), with a total of six questions showing a mean score of 4 or above. Respondents most strongly agreed with the statement “being part of the chair volleyball program provides me with a challenging activity” ($M = 4.30, SD = 0.695$). Participants also agreed that being part of the chair volleyball program “makes me feel like I am a part of a group of friends” ($M = 4.24, SD = 0.715$) and “has helped me make new friends” ($M = 4.24, SD = 0.721$). The two statements that respondents rated the lowest were “being part of the chair volleyball program makes me feel important” ($M = 3.59, SD = 0.936$) and “makes me feel like there are people who really understand me” ($M = 3.68, SD = 0.868$).
Table 4.2. Program-Specific Perceived Social Health Benefits

<table>
<thead>
<tr>
<th>Being a part of the Chair Volleyball program…</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides me with a challenging activity</td>
<td>4.30</td>
<td>0.695</td>
</tr>
<tr>
<td>Makes me feel like I am part of a group of friends</td>
<td>4.24</td>
<td>0.715</td>
</tr>
<tr>
<td>Has helped me make new friends</td>
<td>4.24</td>
<td>0.721</td>
</tr>
<tr>
<td>Motivates me to get out of my house/apartment</td>
<td>4.19</td>
<td>0.761</td>
</tr>
<tr>
<td>Makes me feel like I am not alone</td>
<td>4.00</td>
<td>0.799</td>
</tr>
<tr>
<td>Has helped me get closer to people I already knew</td>
<td>4.00</td>
<td>0.813</td>
</tr>
<tr>
<td>Makes me feel like my interests and ideas are shared by those around me</td>
<td>3.98</td>
<td>0.790</td>
</tr>
<tr>
<td>Makes me feel like I can find companionship when I want it</td>
<td>3.91</td>
<td>0.849</td>
</tr>
<tr>
<td>Makes me feel like there are people who really understand me</td>
<td>3.68</td>
<td>0.868</td>
</tr>
<tr>
<td>Makes me feel important</td>
<td>3.59</td>
<td>0.936</td>
</tr>
</tbody>
</table>

N=222
Means based on a 5-point Likert-type scale (1 = SD, 5 = SA)

Addition Program Benefits

The survey instrument also contained five questions designed to measure additional health benefits. Participants responded to these items by using a five-point Likert-type scale (1 = SD, 5 = SA). Most respondents felt fairly neutral towards these items. The highest reported benefit as was that being part of the chair volleyball program “has given me more energy for everyday living” ($M = 3.95$, $SD = 0.780$) (Table 4.3). The
lowest reported benefit was that being part of the chair volleyball league “has helped me to reduce the number of days I felt life difficulties piling up” ($M = 3.52$, $SD = 1.001$).

**Table 4.3. Additional Health Benefits**

<table>
<thead>
<tr>
<th>Being a part of the Chair Volleyball program…</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has given me more energy for everyday living</td>
<td>3.95</td>
<td>0.780</td>
</tr>
<tr>
<td>Has increased my stamina</td>
<td>3.93</td>
<td>0.775</td>
</tr>
<tr>
<td>Has improved the range of motion in my shoulder joints</td>
<td>3.87</td>
<td>0.895</td>
</tr>
<tr>
<td>Has helped me to reduce my overall stress</td>
<td>3.83</td>
<td>0.860</td>
</tr>
<tr>
<td>Has helped me to reduce the number of days I felt life difficulties piling up</td>
<td>3.52</td>
<td>1.001</td>
</tr>
</tbody>
</table>

*N=222*

Means based on a 5-point Likert-type scale (1 = SD, 5 = SA)

**Hypothesis Testing**

*Null Hypothesis 1:* There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for women and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for men.

A oneway analysis of variance (ANOVA) was conducted to determine if women who took part in HCGHD’s Senior Chair Volleyball program perceived there to be higher social health benefits associated with participation than males who participated in the same program. Results showed that females ($M = 41.16$, $SD = 5.55$) perceived there to
Results and Discussion

be significantly higher social health benefits associated with HCGHD’s Senior Chair Volleyball program than males ($M = 36.13$, $SD = 7.54$), $F(1,220) = 25.155$, $p<.000$. Therefore, the null hypothesis was rejected

*Null Hypothesis 2:* There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who participate with a spouse and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who do not participate with a spouse.

A oneway ANOVA was conducted to determine if those who took part in HCGHD’s Senior Chair Volleyball program with a spouse perceived there to be higher social health benefits associated with participation than those who did not participate with a spouse. Results showed that there was no significant difference in perceived social health benefits between those who played in the chair volleyball league with a spouse ($M = 39.91$, $SD = 5.134$) and those who participated on their own in the chair volleyball league ($M = 40.19$, $SD = 6.497$), $F(1,217) = 0.039$, $p = .845$. Therefore, the null hypothesis failed to be rejected.

*Null Hypothesis 3:* There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as very or extremely competitive and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who label themselves as not or somewhat competitive.
A one-way ANOVA was conducted to determine if older adults who labeled themselves as very or extremely competitive perceived there to be higher social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program compared to those who label themselves as not or somewhat competitive. Results showed that participants who labeled themselves as very or extremely competitive ($M = 41.42, SD = 5.312$) perceived there to be significantly higher social health benefits associated with HCGHD’s Senior Chair Volleyball program than participants who labeled themselves as not or somewhat competitive ($M = 38.09, SD = 7.338$), $F(1,211) = 14.470, p < .000$. Therefore, the null hypothesis was rejected.

**Null Hypothesis 4:** There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are playing in at least their second season and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are playing in their first season.

A one-way ANOVA was conducted to determine if older adults who were playing in at least their second season perceived there to be higher social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program compared to those who were playing in their first season. Results showed that there was no significant difference in perceived social health benefits between older adults who were playing in at least their second season ($M = 40.37, SD = 6.583$) and those who were playing in their first ($M = 39.56, SD = 4.572$), $F(1.215) = 0.441, p = .507$. Therefore, the null hypothesis failed to be rejected.
Null Hypothesis 5: There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 75 years of age or older and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who are 74 years of age or younger.

A one-way ANOVA was conducted to determine if those who were 75 years of age or older perceived there to be higher social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program compared to those who were 74 years of age or younger. Results showed that there was no significant difference in perceived social health benefits between those who were 75 years of age or older ($M = 39.94, SD = 6.594$) and those who were 74 years of age or younger ($M = 40.25, SD = 6.023$), $F(1,217) = 0.125, p = .724$. Therefore, the null hypothesis failed to be rejected.

Null Hypothesis 6: There will be no difference in perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who played their games at a retirement community or assisted living center and perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program for those who played their games at a community/recreation center or a senior center.

A one-way ANOVA was conducted to determine if those who played their games at a retirement community or assisted living center perceived there to be higher social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program.
program than those who played their games at a community/recreation center or a senior center. Results showed that there was no significant difference between those who played their games at a retirement community or assisted living center ($M = 39.31$, $SD = 7.311$) and those who played their games at a community/recreation center or a senior center ($M = 40.46$, $SD = 6.050$), $F(1,216) = 1.171, p = 0.280$. Therefore, the null hypothesis failed to be rejected.

Discussion

All 300 older adults who were registered participants in the 2005 HCGHD Senior Chair volleyball program were mailed a two-page, 22 item survey. In addition to collect certain demographic information, the instrument was specifically designed and to measure program-specific perceived social health benefits. The overall response rate was 74% (222/300).

Most of the respondents were female and currently not married. The majority considered themselves to be very or extremely competitive in their chair volleyball play. Several program-specific perceived social health benefits among participating older adults were found. Out of the ten statements constructed to measure the concept, six items had a mean score of 4 (on a scale from 1 to 5) or above. The mean score on the subscale as a whole was 40.14 (out of 50). Respondents most strongly agreed that being part of the chair volleyball program provided them with a challenging activity. Participants also thought that being part of the chair volleyball program made them feel like they were a part of a group of friends and had helped them make new friends. The
statement that people agreed the least with was that being part of the chair volleyball program made them feel important.

A series of one-way analyses of variance was conducted on six different hypotheses to examine if the level of perceived social health benefits varied based on selected demographic factors. Results indicated that perceived social health benefits did not differ significantly based on participation with a spouse, years played, age of participant, and type of game facility. Results did however indicate that perceived social health benefits differed significantly based on sex and competitive status of participants. Compared to males, females indicated a higher level of program-specific perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program. In addition, older adults who labeled themselves as very or extremely competitive indicated a higher level of program-specific perceived social health benefits associated with participation in HCGHD’s Senior Chair Volleyball program.
Social isolation and loneliness are health concerns reported among older adults (Pinquart & Sörensen, 2001). Older adults who indicate that they feel lonely are at high risk for depression (Alpass & Neville, 2003), suicide (Waern, Rubenowitz, & Wilhemson, 2003), relapse into alcohol abuse (Barrick & Connors, 2002) and having a heart condition (Sorkin, Rook, & Lu, 2002). In an effort to prevent social isolation and loneliness, the World Health Organization (WHO) (1996) recommends that older adults maintain an active lifestyle. Group exercise helps to preserve existing social networks and offers a rare opportunity to build new relationships (Stathi, Fox, & McKenna, 2002). Older adults who report having high quality and quantity of social interactions also indicate greater life satisfaction (Nezlek, Richardson, Green, & Schatten-Jones, 2002).

The purpose of this study was to examine older adults’ perceived social health benefits associated with participation in Hamilton County General Health District’s (HCGHD) Senior Chair Volleyball program. Findings will help evaluate the effect this group physical activity program has on social health in older adults. Identifying perceived social health benefits associated with group physical activity may also assist health professionals in developing effective health promotion programs.

Study participants were identified by a list kept by HCGHD. All 300 registered league players were mailed a two page, 22-item survey primarily designed to measure program-specific perceived social health benefits. A total of 222 surveys were returned, resulting in a 74% response rate. Results showed that HCGHD’s Senior Chair Volleyball
Conclusions and Recommendations

program was associated with significant perceived social health benefits. The overwhelming majority of players felt that taking part in the program provided them with a challenging activity, made them feel like they were part of a group, and helped them make new friends. Among participating older adults, females and people labeling themselves as “very” or “extremely” competitive reported significantly higher social health gains.

Conclusions

This study found that the overwhelming majority of older adults participating in the HCGHD Senior Chair Volleyball league felt there were several social health benefits associated with the program. More specifically, six out of the ten subscale items measuring program-specific perceived social health benefits received a mean score of 4.00 or greater (on a five-point scale with 1 = strongly disagree and 5 = strongly agree), indicating agreement that the program provided social benefits to participants.

Participants most strongly agreed that program participating provided them with a challenging activity, made them feel like they were part of a group, and helped them make new friends. On average, all ten statements scored above neutral. The overall mean score for the entire social health benefits subscale was 40.14 out of 50. Participants also felt that the program improved energy levels, strength, and overall physical health.

Results from this study indicated that program-specific perceived social health benefits varied based on gender and competitive status. Compared to male chair volleyball players, female chair volleyball players rated their perceived social health
benefits to be significantly higher. In addition, players who labeled themselves as “very” or “extremely competitive” reported more perceived social health benefits associated with program participation compared those who were “not at all” or “somewhat competitive.” The study found that program-specific perceived social health benefits did not significantly differ based on age, marital status, whether a person participated with a spouse, and type of game facility.

Discussion

This study found that HCGHD Senior Chair Volleyball program participants felt there were several social health benefits associated with the program. This finding is consistent with physical activity guidelines set forth by the WHO (1996). As social health is described by the WHO, both immediate and long-term benefits of engaging in group physical activity are present in HCGHD’s chair volleyball program. The strong social health benefits associated with participation in the chair volleyball program also support findings by Stathi and colleagues (2002) who showed that older adults involved in group physical activity consistently cited the importance of having friends, meeting new people, and socializing as reasons for physical activity participation and components of overall well-being. Respondents emphasized that participation in various forms of group physical activity helped them avoid social isolation and gave them a reason to get out and expand their social network. These 2002 findings tend to parallel those found in the current study.
Results of the current study showed that two demographic variables were related to higher levels of perceived social health benefits among participating older adults. Females participating in HCGHD’s Senior Chair Volleyball program rated perceived social health benefits significantly higher than males. This finding is consistent with much of the research reviewed. In their study of why older adults participate in exercise and sports, Kolt and colleagues (2004) found that women rated social and involvement reasons much higher than their male counterparts. Women were also more likely to indicate social support as a motivational factor for initially joining an exercise program compared to males (Damush et al., 2005). When offered the chance to propose program improvements, women also suggested more group activities in an effort to create social connections (Gillis et al., 2002). However, investigations into the relationship between sex and degree of loneliness among older adults have revealed inconclusive findings. While some univariate analysis have found a strong relationship between being female and experiencing higher levels of loneliness, multivariate statistical analyses have indicated that sex is not independently related to loneliness (Victor et al., 2005). Instead, it may be more beneficial to view sex in combination with other factors, such as living arrangement or relationship history. Pinquart and Sörensen (2001) also found that less than one percent of the variance of loneliness between men and women can be explained by gender alone. Possible reasons for the higher rates of loneliness observed among females compared to males may be due to an increased risk of being widowed or having to fulfill a caregiver role. The difference could also be based on social standards that make it more acceptable for women to admit feelings of a social nature. Perhaps women
are more in tuned with or have a greater interest in social health issues. This would certainly be relevant to professionals when investigating reasons for participation and when promoting a program in the community.

The present study also showed a significant relationship between competitiveness and levels of perceived social health benefits. Players who labeled themselves as “very” or “extremely” competitive perceived program participation to be associated with significantly higher levels of social health benefits than those players who labeled themselves “not at all” or “somewhat” competitive. This finding is supported by Smith and Storandt (1997) who noticed that competitive older adults indicated a wider variety of reasons for participating in exercise. One particular area in which non-competitors and competitors differed was social motivation. Older adults who were competitive frequently cited socialization as a reason for exercising. In their study of an older adult runner, Roper and colleagues (2003) also discovered that one major reason for why the person continued to exercise, even at a very old age, was his competitive drive. The man indicated that he would continue to run as long as he could stay competitive. Another reason why competitors report more social health gains associated with group physical activity may be that they feel the competitive interactions with peers helps to improve their overall self-image and self-esteem. Taking part in physical activity programs may fulfill a greater identity role for competitors than for non-competitors. Compared to non-competitors, who may primarily look for physical health benefits associated with physical
activity, competitors may also be more likely to utilize a socially vibrant environment to the fullest extent.

Study results revealed no significant relationships among the remaining demographic characteristics and program-specific perceived social health benefits. The fact that there was no clear association between age and levels of loneliness is supported by some literature (Pinquart & Sörensen, 2001; Wenger & Burholt, 2003; Victor et al., 2005). Major reasons for this lack of association may be the complex nature of how loneliness arises, whether age is in fact an independent variable, and whether a person defines the term “lonely” differently depending on age and previous social life experiences. Examination of spouse participation also failed to reveal a significant relationship. This is interesting, since much of the reviewed literature emphasized the role played by the spouse in triggering and maintaining exercise participation (Damush et al., 2005; Roper et al., 2003). However, the lack of a relationship between spouse participation and perceived social health benefits is also encouraging. It could be argued to support the findings by McAuley and colleagues (2000), who discovered that the physical activity group constitutes its own social environment, providing unique (and otherwise nonexistent) opportunities for interactions. In that case, whether a person participates with or without a spouse should not affect exposure to new social interactions.

There were no significant relationships found between perceived social health benefits and place of participation and years of taking part in the chair volleyball league.
No literature investigating levels of perceived social health benefits associated with a group physical activity program and location or years of participation was found. Further studying these two demographic variables in association with perceived social health benefits would represent interesting and original research.

Recommendations

Recommendations for practice. The main finding of this study is that HCGHD’s Senior Chair Volleyball program is associated with several social health benefits among participating older adults. Applied to the practice of health promotion, this means that programs primarily implemented as group exercise activities many times also may have the added benefit of improving older adults’ social health. Considering all the preventive health aspects of satisfying social interactions discussed throughout the literature, professionals must not overlook this opportunity to address overall health among older adults. Practitioners should ensure to include the aspect of social health when designing group physical activity programs. Without ignoring primary physical health objectives, efforts can be made to maximize social gains. Above all, group physical activity programs should be challenging, include opportunities for older adults to interact with others, and provide a chance for members to create new friendships.

Participants must also ensure to evaluate possible social health gains associated with physical activity programs. Even if a program has been in place for several years and was not originally designed with social health in mind, evaluating perceived social benefits may show additional health promoting program properties. Many group exercise
programs are evaluated based purely on physical health gains. If that is the case, a major opportunity to justify program existence and possible future expansion is missed. Health promotion efforts should be based on the principle of best practices. By documenting social health properties created by group physical activity programs, practitioners will ensure future programs to be created, implemented, and evaluated with possible health promoting social aspects well accounted for.

In regards to different levels of perceived social health benefits based on demographic variables, this study found two out of the six factors examined to be significantly related. Females and participants who rated themselves as “very” or “extremely” competitive reported significantly higher social health gains associated with program participation than their counterparts. Age, type of game facility, whether a person participated with a spouse, or had played in the league more than one year did not significantly affect levels of perceived social benefits. However, in regards to recommendations for professional, few clear suggestions for improved practice based on participants’ demographic profile and related levels of perceived social health benefits can be made. For instance, even if a professional was tempted to focus on females to maximize social health benefits, could it be that women only report significant social health gains when men participate in the same physical activity program? Do competitors report high social health benefits associated with group physical activity programs only if such programs include people who act and behave in a non-competitive manner? Considerations like these limit practical recommendations based on
Conclusions and Recommendations

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demographic variables and associated levels of perceived social health benefits. Thus, further research is clearly warranted.

Recommendations for improving this research. It could be recommended that any future study which aims to compare perceived social health benefits based on demographic variables further explores such relationships. In addition, data presented in this study would benefit from being compared to measurement of social health in participating older adults prior to them playing their first season in the league. Actual health gains may be found based on comparing pre and post social health data. Another recommendation would be to conduct a case-control study in which one group of adults receives the program while another group of older adults does not receive the program. Pretest and posttest measurements of their perceived social health could in turn be obtained and compared.

Recommendations for future research. A professional interested in building on the findings of this study may be advised to compare perceived social health benefits associated specifically with chair volleyball to other group physical activity programs. It would then be intriguing to determine what particular, if any, social aspects of chair volleyball set the program apart from other similar activities. It would also be interesting to research and compare social health gains associated with sports group activities to programs that were mainly designed and implemented with physical health gains in mind. Further, a qualitative study investigating specifically why there is a difference in the level of perceived social health benefits based on gender could shed some light on this intriguing finding. A qualitative study on the difference between loneliness and lack of
social support appears warranted. Much, if not all of the professional literature separates these two terms. However, it has become apparent during the process of completing this study that studying one without the other would be futile. Investigating further how older adults relate and contrast the two concepts could add some interesting depth to the study of social health in old age.
References


Appendices

Appendix A: Survey Instrument

Appendix B: Cover Letter used in First Mailing

Appendix C: Cover Letter used in Second Mailing
**SENIOR CHAIR VOLLEYBALL SURVEY**

**Directions:** This survey is voluntary. Please answer each question honestly. All answers will be kept confidential. By filling out this survey you give your consent to be a part of this study. Please make sure to fill out both sides of the survey.

Please check how strongly you agree or disagree with each statement as it relates to your participation in Hamilton County General Health District’s Senior Chair Volleyball program. Only check one answer for each statement.

<table>
<thead>
<tr>
<th>Being a part of the Chair Volleyball program…</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Makes me feel like I can find companionship when I want it</td>
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<td>2. Makes me feel like I am not alone</td>
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<td>3. Makes me feel like I am part of a group of friends</td>
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<td>4. Makes me feel like my interests and ideas are shared by those around me</td>
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<td>5. Makes me feel like there are people who really understand me</td>
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<td>6. Has helped me make new friends</td>
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<td>7. Has helped me get closer to people I already knew</td>
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<td>8. Motivates me to get out of my house/apartment</td>
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<td>9. Provides me with a challenging activity</td>
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<td>10. Makes me feel important</td>
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<td>11. Has given me more energy for everyday living</td>
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<td>12. Has increased my stamina</td>
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</table>

**PLEASE TURN**
<table>
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<tr>
<th>Being a part of the Chair Volleyball program…</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Has helped me to reduce my overall stress</td>
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<td>14. Has helped me to reduce the number of days I felt life difficulties piling up</td>
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<td>15. Has improved the range of motion in my shoulder joints</td>
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</table>

Please circle how competitive you are when you play chair volleyball.

<table>
<thead>
<tr>
<th>As an individual, how competitive are you when you play chair volleyball</th>
<th>Not competitive at all</th>
<th>Somewhat competitive</th>
<th>Very competitive</th>
<th>Extremely competitive</th>
</tr>
</thead>
</table>

ABOUT YOU: Please answer each question. All answers will be kept private.

<table>
<thead>
<tr>
<th>What is your gender?</th>
<th>___Male</th>
<th>___Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>What year were you born?</td>
<td>19___</td>
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<tr>
<td>Including the current season, how many years have you taken part in the Chair Volleyball league?</td>
<td>___Years</td>
<td></td>
</tr>
<tr>
<td>What is your current marital status?</td>
<td>___Single</td>
<td>___Divorced</td>
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<tr>
<td></td>
<td>___Married</td>
<td>___Widowed</td>
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<tr>
<td></td>
<td>___Separated</td>
<td>___Living with unmarried partner</td>
</tr>
<tr>
<td>Do you currently participate in the Chair Volleyball league with a spouse or unmarried partner you are living with?</td>
<td>___I currently participate with a spouse or unmarried partner</td>
<td></td>
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<tr>
<td></td>
<td>___I currently do not participate with a spouse or unmarried partner</td>
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<tr>
<td></td>
<td>___I have no spouse or unmarried partner</td>
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<tr>
<td>In what type of facility do you play your home chair volleyball games (please select one)?</td>
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<tr>
<td>Recreation Center</td>
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<td>Senior Center</td>
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<td>Retirement Community</td>
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<td>Assisted Living Center</td>
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<td>Senior Apartments</td>
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</table>

THANK YOU 😊
Dear >>Name<<,

I hope this letter finds you in good health and spirit. My name is Anders Cedergren, and some of you may remember me from the 2004 Chair Volleyball season. The reason for this letter is that I am currently pursuing a Graduate Degree in Community Health at the University of Cincinnati and have teamed up with Hamilton County General Health District for a study of your Chair Volleyball league.

Your response to this letter is extremely important! Participation in this study is completely voluntary and will not affect your future role in the chair volleyball league. We would greatly appreciate it if you could assist us by filling out the attached survey. There are no right or wrong answers and it will only take a couple of minutes to complete.

The code written on the return envelope is there to help us keep track of how many people have returned the survey. This information will be kept confidential, and will be destroyed as soon as the data from a survey has been collected. Please place the completed survey in the self-addressed stamped envelope provided and return it before >>date<<. Final results of this study will be available at the start of the 2006 season. Thank you in advance for completing the survey! We greatly appreciate it.

Best wishes,

Anders Cedergren
Graduate Assistant
University of Cincinnati
(513)-556-1379

Advisor: Keith King, PhD, CHES
Assistant Professor
University of Cincinnati
(513)-556-3859
Dear >>Name<<,

I hope this letter finds you in good health and spirit. I recently sent you a letter asking if you would be willing to fill out a survey regarding the Senior Chair Volleyball program. The reason for this is that I am currently pursuing a Graduate Degree in Community Health at the University of Cincinnati and have teamed up with Hamilton County General Health District for a study of your Chair Volleyball league.

Your response to this letter is extremely important! Participation in this study is completely voluntary and will not affect your future role in the chair volleyball league. We would greatly appreciate it if you could assist us by filling out the attached survey. There are no right or wrong answers and it will only take a couple of minutes to complete.

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