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Experiences of Participation in Senior Games among Older Adults

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Abstract

This paper examines how Senior Games participants in one state experience their involvement and how this impact relates to perceived health. A random sample of 444 North Carolina Senior Games participants (55 years and older) completed a survey in 2006. A *Reasons for Participating* (RFP) scale was developed, and selected behaviors and demographic characteristics were analyzed. The RFP factors included physical health, interpersonal relationships, and intrinsic outcomes. Participants were found to be twice as physically active as other older adults in the state. Further, some demographic differences existed regarding reasons and health perceptions among the participants. This study points to the importance of a year-round community based recreation program in enabling older people to become and remain physically and socially active.

KEYWORDS: Health, motivations, physical activity, social participation

People are living longer and the older population is growing rapidly. In 2000, over 12% of the U.S. population was over the age of 65 years. This percentage is expected to almost double (21%) by 2050 (U.S. Census Bureau, 2007). Jeste (2005) referred to this phenomenon as the *graying of America*. At the same time, however, the incidence of chronic illness in older adults is on the rise. Sedentary living and physical inactivity in older adults can create health problems and diminish their quality of life (U.S. Department of Health and Human Services, 1996). Surveys such as the Behavioral Risk Factor Surveillance System (BRFSS; Centers for Disease Control and Prevention, 2005) found that only a third of persons aged 65 years and older participate in regular sustained physical activity (i.e., defined as 30+ minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20+ minutes three or more days per week). Interventions such as recreation and leisure programs that promote physical activity in older adults and facilitate healthy communities are needed (Hui & Rubenstein, 2006).

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Health, defined as a state of physical, mental, and social well-being and not just the absence of disease (World Health Organization, 2008), is mainly determined by how people live their daily lives. Iso-Ahola (1994) noted that over 80% of factors that determine health have to do with issues other than medical treatment (e.g., smoking, diet, alcohol use). Another important factor is physical activity. Although physical activity occurs in daily activities in addition to leisure, determining "leisure's *overall* and *mediating* [italics original] effect on health and illness" (Iso-Ahola, p. 43) is important.

One existing stereotype is that as people get older they lose vitality and energy (Rowe & Kahn, 1998). Evidence suggests, however, that older adults can maintain vigor and high functioning through to death (Paffenbarger, Hyde, & Dow, 1991). Aging well for older adults includes using behavioral factors (e.g., physical activity, leisure) to optimize health and adapt to change (Baltes & Baltes, 1990; Rowe & Kahn). Community based recreation programs that offer opportunities for older adults to be physically and socially active can facilitate actual and perceived health (Orsega-Smith, Payne, & Godbey, 2003).

An organization that has fostered health with a focus on physical and social well-being is Senior Games, which exists in almost every state in the U.S. The focus of this paper was to examine the influence of one state's Senior Games program (i.e., North Carolina Senior Games; NCSG) on the perceived health of older adults. The reasons for participation and the impact of NCSG involvement associated with perceived health and demographic characteristics were examined.

Background

The conceptual framework for this research included health, specifically related to physical and social well-being, as it influences older adults as they age. Health was also framed in relation to the importance of community based recreation programs (i.e., interventions) that promote physical and social activity. Rowe and Kahn (1998) asserted that people can modify their behaviors or lifestyles in ways that promote health and independence and prevent or delay the effects of illness or disability as they age. A high level of engagement targeted through recreation services has implications for health.

Many researchers have examined the role of leisure and health in older adults (e.g., Coleman and Iso-Ahola, 1993; Everard, Lach, Fisher, & Baum, 2000; Ostbye et al., 2006; Lyons & Dionigi, 2007; Mobily, Ramos, & Stone, 1994; Payne, Mowen, & Montoro-Rodriquez, 2006; Siegenthaler, 1997; Wankel, 1994). These researchers have confirmed that health instead of disease and impairment can define the latter part of life and that a decline in health during older adulthood does not have to occur. For example, Payne et al. studied leisure in relation to the perceived physical and mental health of older adults with self-reported arthritis. They found that greater involvement in leisure (i.e., having a leisure repertoire) led to better perceived health. Similarly, Mobily et al. concluded that greater participation in physical leisure activities was associated with better health and that active physical participation provided important feedback about health. Everard et al. ascertained that the maintenance of instrumental, social, and high-demand leisure activities were associated with better physical health among older adults. In addition, Siegenthaler suggested that leisure enhances health because it serves as a buffer to life's stressful events.

Social support and social participation also are significantly related to health for older adults (Rowe & Kahn, 1998). Ostbye et al. (2006) found that self-reported health appeared to be broadly related to social participation. In addition, Payne et al. (2006) as well as Coleman and Iso-Ahola (1993) uncovered a positive relationship between social leisure and perceived mental health. Gibson, Ashton-Shaeffer, Green, and Autry's (2003/2004) interviews with older

women as well as Lyons and Diongi's (2007) examination of Masters sports participants both showed that the social environment was a central theme in leisure and sports involvements.

Further, demographic issues often are associated with the health, physical activity, and social well being of older adults. Prohaska et al. (2006) described the considerable variation that exists within diverse older populations. Some older adults have access to health promoting experiences literally all over the world. Other older adults with fewer educational or financial resources may have to rely on community based and family-centered opportunities to remain engaged in life and healthy living (Menec, 2003). Menec found that regular social and productive activities (i.e., activities perceived as having society value) at home and in the community were associated with greater well-being, reduced functional decline, and better health in the 6-year longitudinal study she conducted. Other research has shown that White rather than Black or Hispanic aging persons are more likely to be active (Swenson, Marshall, Mikulich-Gilberston, Baxter, & Morgenstern, 2005). Older women tend to be less active than men, at least relative to recreation activity (i.e., unpaid work like housework keeps most women active their entire lives; Henderson, Bialeschki, Shaw, & Freysinger, 1996). Wilcox, Bopp, Oberrecht, Kammermann, and McElmurray (2003) also found that African American and rural older women were often less active than other groups and found multiple levels of influence on their physical activity. These variations are important to acknowledge in promoting opportunities for recreation engagement among older adults in communities.

Community Programs

Although health is addressed by many community organizations, leisure and recreation programs can be considered an integral part of the health care system (Payne, 2002). Health is often considered an individual status, but social and community environments influence the health behaviors of individuals (Sallis, Bauman, & Pratt, 1998). The healthfulness of a situation and well-being of participants are influenced by multiple facets of both the physical environment and the social environment (Stokols, 1992). These environments can enhance the range of behaviors by promoting and sometimes requiring certain actions and by discouraging or prohibiting other behaviors. Therefore, supportive environments for older adults to be physically and socially active such as settings, facilities, and programs are needed in communities to enhance the opportunities for healthy living.

The role played by community organizations such as public park and recreation programs as well as other not-for-profit agencies like NCSG should be considered. Orsega-Smith et al. (2003) reported that middle age and older adults most often participated in recreation focused physical activity programs offered through local community organizations. Giles-Corti and Donovan (2002) found for adults in general that social environmental determinants were more important than the physical environment in promoting active living. They interpreted their results to mean that having access to programs is important but may be insufficient to encourage physical activity unless linked to social support through family, friends, and organized community leadership.

A growing body of literature has examined health and physical activity for older adults, but only a few studies have examined specific community programs such as Senior Games and the outcomes associated with participation. Merrill, Shields, Wood, and Beck (2004) analyzed the role of selected outcome expectations in motivating regular physical activity among older adults participating in the 2002 World Senior Games. Four expected outcomes were found: recreation and social, physical health, mental health, and self-image. Merrill et al.'s research uncovered no differences by sex, age, marital status, or education among the expectations of these older adults. Although their research used Senior Games participants,

this sample came from elite World Game competitors and not local community participants. Newton and Fry (1998) further examined the motivational perspectives of athletes participating in Senior Games at the regional level. Their focus was on defining success in sports more than recreational participation, but they concluded that task orientation (i.e., a focus on motivation, intrinsic enjoyment) was more important than ego orientation (i.e., a focus on competition and winning). Newton and Fry's results pointed to leisure aspects as more influential than athletic dimensions for the older adults they studied. Lyons and Diongi (2007) examined Masters' sport participants in Australia and theorized that sports provided a way to develop a sense of social community. These studies all provided some insight about the role and influence of "elite" sports activities for older adults, but did not address a specific focus at the local community level.

Therefore, the purpose of this study was to examine reasons for participation in a community based recreation program (i.e., NCSG) and the resulting perceptions about social and physical health among older adults. The involvement of older adults in NCSG was explored from their perspectives as community participants. This focus on participants in local community opportunities provided a way to understand active older adults and their perceptions of how NCSG involvement related to their perceived health. Specifically, the research was guided by three broad questions: a) what are the reasons for participating in NCSG, b) what is the nature of the NCSG experience related to perceptions of health, and c) what associations exist among demographic characteristics, reasons for participating, NCSG experiences, and health.

Methods

Before describing the methods used, a description of North Carolina Senior Games (NCSG) may be helpful. Senior Games is a national community based program that aims to promote health among older adults. Each state organizes its programs somewhat differently. NCSG began in 1983 with a vision to create health promotion and education opportunities for adults 55 years of age and better. (Note: The words, "55 years and better" are an intentional statement by NCSG to imply that aging can be a positive experience. Although the definitions of older adult vary greatly, we used 55 years and older in this study since 55 years is the age minimum for NCSG participation). NCSG is based on local community participation aimed to encourage older adults to be active year-round in sports and fitness programs as well as creative arts. In 2006, over 60,000 older adults participated statewide in the NCSG community programs offered through 52 Local Games that served all 100 counties across the state. NCSG includes Local Games (i.e., competition in sports and events such as archery, badminton, bocce, softball tournament as well as a softball throw, tennis, track and field, swimming and a variety of other possibilities depending on the interests within the local community), Silver Arts (i.e., visual, heritage, literary, and performing arts), Silver Striders (i.e., walking program), Silver Classic (i.e., special events), Silver Liners (i.e., line dancers) in addition to State Finals and the opportunities to compete at a high level. NCSG has articulated its mission specifically as promoting health and activity year-around in communities with the greatest focus on Local Games. Each participating community in North Carolina has a local coordinator that facilitates opportunities for older adults to come together to "train" for competition or to prepare for arts presentations year-round.

Participants

After approval from the Institutional Review Board, a random sample of 1000 NCSG participants was drawn from local community participant lists from the 2006 local spring NCSG events. These lists were merged and every 10th name was drawn from the 10,000

names that were submitted. Participants were given an opportunity to enter a drawing for $100 cash if they completed the questionnaire and included their name and address on a separate printed page. A self-addressed stamped envelope was included with the mailing. A follow-up post card reminder was sent two weeks after the first mailing.

A total of 444 usable surveys (30 surveys were undeliverable) were returned for a response rate of 46%. Table 1 provides a summary of the demographics of the sample. Overall, the number of women and men who responded was almost the same. Both the mean and the median age were 70 years with a range of 55-96 years. Over two-thirds of the participants were married and almost that same percentage came from rural areas of North Carolina.

This group of respondents mirrored the composition of NCSG based on the annual demographic data collected from local game coordinators. This sample also was somewhat reflective of the state's census data with a few exceptions (U.S. Census Bureau, 2000). The NCSG participants did not represent the 21% of the state that is African American but overrepresented the 1% American Indian population. The income level for NCSG participants who made over $60,000 was the same for the state but the state percentage overall of households with incomes under $30,000 was higher in the general population (38% in North Carolina). The educational level of NCSG respondents was much higher since the state average of individuals without a high school education is 22% and only 23% of our state's residents have a Bachelors degree or higher. Overall, these NCSG survey participants were more highly educated with more disposable income than the state general population.

Instrument Development

NCSG evaluates its program every four years. Therefore, instrument development began with a template that had been used in 2002 to measure various market driven questions about satisfaction, reasons for participating, perceptions about organizational effectiveness, and demographics.

The draft survey was developed in collaboration with NCSG staff. Mostly quantitative data were collected, but several partially open-ended questions provided opportunities for respondents to elaborate on their answers. Specialists in aging associated with the North Carolina Aging Network reviewed the survey and provided feedback for face validity. One of the researchers took the draft instrument to a focus group of NCSG Ambassadors (i.e., participants from Local Games trained to promote participation in their geographic area) who provided verbal feedback about the questions proposed. After this feedback was considered and modifications made, a pilot survey was mailed to 60 additional Ambassadors who completed it and offered further comments about wording and question meanings. Minor changes were made to finalize the instrument.

The survey items addressed in this paper include participation in the programs offered (e.g., SilverArts, Local Games, State Games), a *Reasons for Participating* (RFP) scale, questions about moderate and vigorous physical activity as well as health compared to others as asked in the Behavioral Risk Factor Surveillance System (BRFSS; Centers for Disease Control and Prevention, 2005), physical and social behavior in communities attributed to NCSG, and demographic questions. One open-ended question was asked at the end: *What influence has Senior Games had on your life*? The qualitative data were not formally analyzed but the responses to this question helped interpret the quantitative findings. The questionnaire was four pages in length (in 12 point font) and took about 15-20 minutes to complete. Additional scales related to motivations for exercise and constraints to participation were included but not analyzed in this paper.

A *Reasons for Participating* (RFP) scale to address the first research question was developed. An existing scale used by NCSG staff in previous years was modified with additional

TABLE 1
Demographic Characteristics of the NCSG Participants

Demographic Variables	Percent	Frequency
Gender (N = 438)		
Female	52%	227
Male	48%	211
Race (N = 436)		
White, not of Hispanic Origin	81%	359
African-American	10%	42
American Indian	5%	24
Hispanic/Latino, Asian American, Non Response, Multi-Racial, Other	3%	17
Age (N = 440)		
55-64 years	26%	114
65-74 years	47%	208
75-84 years	22%	96
85 years or better	5%	22
Marital Status (N = 438)		
Married	69%	306
Widowed	20%	90
Divorced	5%	20
Single	5%	20
Education (N = 438)		
Less than High School	6%	25
High School Graduate	19%	84
Some College/Tech School	30%	134
College Graduate	44%	194
Household Income (N = 376)		
Under $10,000	6%	23
$10,001-19,999	14%	53
$20,000-29,999	13%	50
$30,000-39,000	14%	53
$40,000-49,999	12%	46
$50,000-59,000	11%	43
More than $60,000	29%	108
Living Arrangement (N = 433)		
Living with Spouse	68%	300
Living Alone	22%	96
Living with Other (Relative, Non-Spouse, Assisted Living)	9%	37
Health Rating (compared to others; N = 444)		
Excellent	38%	167
Very Good	38%	169
Good	18%	79
Fair or Poor	7%	29
Geographic Location (N = 431)		
Rural	64%	276
Urban	36%	155

questions that focused specifically on health factors. Twelve questions comprised the scale and are listed in Table 2. The RFP used a 5-point scale ranging from 1 = very unimportant to 5 = very important, and had a reliability of α = .87. Reasons related to health addressed interpersonal relationships (e.g., friendships, fellowship/social opportunities, creative expression), physical health (e.g., improving health, doctor's recommendation, living longer,

keeping active, being fit, feeling younger), and personal and intrinsic outcomes (i.e., fun, competition). A mean score was calculated for each of the factors as shown in Table 2.

To examine the nature of the NCSG experience, we used items from the BRFSS (Centers for Disease Control and Prevention; CDC, 2005) as well as other questions about physical and social behavior outcomes of NCSG. Data for the BRFSS are collected nationwide each year by the CDC and reported for each state. Since this study was cross-sectional and not experimental, a basis for comparing the NCSG participants to the general aging population in the state regarding their perceived health and perceived moderate physical activity behaviors was useful. The BRFSS items used in our study included perceived health (i.e., *How would you rate your present health compared with others your age? Excellent, very good, good, fair, poor*) and moderate and vigorous activity. The BFRSS asks three questions about moderate activities (i.e., *Do you do moderate activities for at least 10 minutes at a time such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes some increase in breathing or heart rate? How many days per week do you do these moderate activities for at least 10 minutes at a time? On days when you do moderate activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities?*) The same questions were asked for vigorous activity except that vigorous was defined as running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate.

Other questions that examined the nature of the experience included whether training or preparing for NCSG was a part of weekly activities (*yes/no*) and perceptions of whether NCSG provides motivation to be more physically or socially active (*yes/no*). These items with the RFP and demographic questions (i.e., age, race, rural verses urban, gender, level of education, living arrangements, annual household income, and health status) provided the basis for addressing the third research question about associations among these variables that would help to understand the possible outcomes of NCSG involvement related to successful aging.

Data Analysis

The survey's close-ended questions were coded and analyzed using SPSS 15. Frequencies and descriptive statistics were run for all questions. The RFP scale was further analyzed using a principle component factor analysis with varimax rotation. Three factors explained 66% of the variance. These three factors were named physical health, interpersonal relationships, and intrinsic issues (See Table 2).

The nature of the experience in NCSG was analyzed primarily with descriptive statistics. The amount of physical activity was calculated for those older adults who said they did moderate activities at least 10 minutes of activity at a time. The total number of days a week was examined relative to minutes per day to determine how many people met the physical activity recommendation. Regular sustained physical activity was defined as 30+ minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20+ minutes three or more days per week. After examining the results we obtained from the questions about vigorous activity, we suspected that some confusion existed between the definitions of moderate and vigorous activities. Therefore, only the moderate physical activity data were used in this study. The older adults were divided into two groups based on the recommended moderate physical activity (Centers for Disease Control and Prevention, 2005): individuals who met the recommendation and individuals who did not.

Associations among the reasons, nature of the NCSG experience, and demographic characteristics were analyzed with bivariate statistics including independent t-tests, analysis of variance, and Chi-square tests. Several demographic questions were recoded for these analyses. Age information was collected using birth date as a continuous variable. Since

TABLE 2
Factor Structure and Means for Reasons for Participation (RFP) Scale

Factor/Item	*N*	*Mean**	*SD*	*Factor Loading*
Physical Health	362	4.37	.68	—
Fitness	399	4.42	.76	.83
Improving Health	388	4.34	.80	.81
Live Longer	381	4.24	.92	.80
Feel Younger	391	4.29	.87	.78
Keep Active	416	4.56	.63	.72
Interpersonal Relationships	273	3.87	.76	—
Friendship	421	4.44	.68	.82
Doctor's Recommend	294	3.13	1.29	.78
Fellowship/Social	391	4.23	.82	.73
Self Esteem	382	4.09	.98	.56
Creative Expression	355	3.72	1.15	.54
Intrinsic Issues	398	4.47	.57	—
Fun	425	4.67	.52	.93
Competition	407	4.28	.87	.47

* Based on 5-point Likert scale with 1 = very unimportant to 5 = very important. Factor scores are calculated as a mean score for the items contributing to the factor

people are living longer, the differences between the functioning of a 55 year old may be quite different than someone who is 85 years old. Age was divided into two groups including 55-64 years and 65 years and older based on traditional retirement age and the likelihood of more time for participation in NCSG. Because the number of people in specific racial and ethnic backgrounds was small, we made race a dichotomous variable with white majority and racial/ethnic minority as the two distinctions. By examining zip code information relative to the North Carolina Rural Economic Development Center designations, the categories of rural and urban were delineated.

Results

Reasons for Participating

Reasons for participating in NCSG were examined to understand why NCSG was important and how the reasons contributed to ongoing participation. The most important item on the RFP scale for NCSG participants was *fun* ($M = 4.67$, $SD = .52$) followed by *keep active* ($M = 4.59$, $SD = .63$). Table 2 shows the item scores based on the 5-point Likert scale. Relative to the factor structure, the intrinsic issues factor including fun and competition was the highest rated. The lowest rated single item for participating was "doctor's recommendation," which also had the highest standard deviation indicating a great variation in the responses to this item.

Nature of NCSG Experiences and Health Perceptions

The second research question addressed how the nature of NCSG as perceived by the participants might be related to perceptions of health. NCSG is divided into program areas that offer different engagement opportunities. The individuals who responded to the questionnaire had participated in some programs for as long as NCSG had been in existence.

The greatest participation occurred at the local level with 89% of the participants indicating their involvement in Local Games for an average of 6 years (SD = 5.41). Over half had participated in State Finals for an average of 5 years (SD = 4.85) with 13% participating in the National Senior Games (M = 3.23, SD = 3.85) at some point during their NCSG tenure. Although the focus of NCSG has traditionally been on "competitive" physical activities, NCSG offers programs to keep older adults active in a variety of physical, social, and creative ways. Among the other activities, 22% of the respondents to the survey participated in SilverArts, 6% in SilverStriders, and about 1% in SilverLiners. About 11% said they had volunteered for Senior Games and another 9% had participated in Clinics and Workshops sponsored by NCSG.

Three-quarters (75%) of all the NCSG respondents rated their health as very good to excellent. In the 2005 BRFSS (Centers for Disease Control and Prevention, 2005) data for North Carolina, only 43% of those residents age 55-64 years and 32% 65 years and older rated their health as very good to excellent. The NCSG respondents rated their health as much better than the NC older adult population in general.

The data indicated that 60% of the 55-64 year old NCSG respondents were moderately active compared to 40% of that age group found in the 2005 BRFSS. For individuals 65 years and older, almost twice as many NCSG older adults (64%) said they were moderately active compared to the BRFSS statistics that indicated only 34% for individuals in that age group. In addition, 61% of the respondents answered "yes" to *Does your participation in SG motivate you to be more physically active* and 66% indicated "yes" to *Does your participation in SG motivate you to be more socially active (that is, be more involved with other people)?*

To get another sense of the nature of NCSG experiences, we asked the older adults if they would recommend participation to friends and family, and 96% said yes. Of particular importance to examining the influence of a community based program was the finding that almost three-quarters (73%) said that training and preparation for NCSG was a part of their regular weekly activities.

Associations Related to NCSG Participation

Despite a strong consensus about the reasons for participation and nature of NCSG, older adults are a diverse group of people. Therefore, our third research question related to better understanding the associations among demographic characteristics and the reasons for participation along with the nature of the NCSG experience. Determining if some demographic groups were better served by NCSG was important for the organization as well as in understanding the perceived health impacts. The NCSG RFP factors were examined for participating (i.e., physical health, interpersonal relationships, and intrinsic issues) relative to age, gender, race, living situation, geographic residence, perceived health and the nature of NCSG involvement (i.e., perceptions about behavior such as whether NCSG motivates older adults to be more active and whether older adults meet moderate activity recommendations).

Age usually represents a diverse demographic among older people. When the two age groups of 55-64 years and 65 years and older were compared, however, no statistically significant differences were found relative to reasons for participating or any of the other perceptions of behavior associated with NCSG.

No statistically significant differences were found between men and women relative to how much training and preparing for NCSG was a part of their regular weekly activities, whether they would recommend participation to others, perception of being more physically active because of NCSG, or amount of moderate or vigorous activity. One difference between men and women related to reasons for participation. Women were more likely

to indicate that participation in NCSG motivated them to be more socially active, $X^2(1, N=413) = 22.102, p = .000$. Similarly, the interpersonal factor was higher for women ($M = 4.14$, $SD = .67$) than for men ($M = 3.62$, $SD = .75$), $t(267) = 5.95, p = .000$ (one-tailed), $d = .73$). The effect size was high for this difference indicating a strong magnitude between the genders. Health reasons for participation also were higher for women ($M = 4.51$, $SD = .60$) than for men ($M = 4.25$, $SD = .72$), t (355) = 3.775, p =.000(one-tailed), d =.39).

No differences were found between the two geographic locations or rural and urban relative to the three factors that comprised RFP. Additionally, no differences were found regarding location for the amount of moderate physical activity that respondents reported.

About 19% of the respondents to the survey (see Table 1) were individuals who had a racial identity other than white. Interpersonal relationship reasons for participating in NCSG was higher and statistically significant for minority identified older adults ($M = 4.13$, $SD = .69$) compared to white participants ($M = 3.83$, $SD = .76$), $t(267) = 2.309, p = .02$ (one-tailed), d =.40). Other aspects of moderate activity level and perceptions of physical and social involvement as well as health and intrinsic reasons were not statistically significant for race.

Individuals who lived alone rated the interpersonal relationships factor on the RFP scale higher than individuals who lived with a spouse, $F(2,265) = 4.010, p = .02$(one-tailed). NCSG was also more likely to motivate people who were living alone to be more socially

TABLE 3
Factor Structure and Means for Reasons for Participation (RFP) Scale

Factor/Item	*Yes M*(SD)*	*No M*(SD)*	*t*	*p*	*d*
Physical Health					
NCSG Part of Regular Weekly Activities	4.48(.60)	3.95(.79)	6.22(354)	.000	.35
Motivates to be More Physically Active	4.54(.56)	4.00(.78)	7.33(352)	.000	.37
Motivates to be More Socially Active	4.50(.60)	4.07(.78)	5.511(348)	.000	.30
Recommended Moderate Activity Met	4.41(.63)	4.08(.78)	2.694(354)	.007	.23
Interpersonal Relationships					
NCSG Part of Regular Weekly Activities	3.94(.76)	3.56(.68)	3.356(266)	.001	.25
Motivates to be More Physically Active	4.01(.70)	3.61(.80)	4.13(263)	.000	.26
Motivates to be More Socially Active	4.11(.65)	3.30(.70)	9.196(267)	.000	.51
Recommended Moderate Activity Met	3.90(.74)	3.72(.91)	1.104(269)	.270	—
Intrinsic Issues					
NCSG Part of Regular Weekly Activities	4.52(.53)	4.29(.68)	3.538(388)	.000	.19
Motivates to be More Physically Active	4.51(.56)	4.38(.60)	2.043(381)	.042	.11
Motivates to be More Socially Active	4.52(.56)	4.42(.59)	1.548(377)	.122	—
Recommended Moderate Activity Met	4.48(.57)	4.42(.55)	.529(385)	.597	—

• Based on 5-point Likert scale with 1 = very unimportant to 5 = very important. Factor scores are calculated as a mean score for the items contributing to the factor

active, $X^2(2, N=267), p = .001$, than individuals living with a spouse. Persons who lived alone were just as active as those participants living with someone other than a spouse.

Perceived health status was another area examined relative to NCSG experiences and demographics. When comparing the three RFP factors with health status (i.e., excellent, very good, good, fair and poor), no differences were found regarding intrinsic issues or interpersonal relationships. Individuals who rated themselves as having "excellent" health scored higher on the physical health reasons for participating in NCSG, $F(3,394) = 2.267, p = .019$.

Income and education are usually associated demographic variables. NCSG respondents who had a high school degree or less had higher scores relative to physical health reasons ($M = 4.57$, $SD = .51$) and interpersonal relationships reasons ($M = 4.16$, $SD = .73$) compared to physical health ($M = 4.26$, $SD = .63$) and interpersonal relationships ($M = 3.70$, $SD = .81$) reasons for college graduates, $F(2,354) = 6.86, p = .001$ and $F(2,267) = 8.46, p = .000$, respectively. Older adults with household incomes over $60,000 had lower physical health reasons, $F(3,308) = 3.05, p = .09$ than NCSG participants who made $20-40,000 and lower interpersonal relationship reasons scores compared to individuals who made $40,000 or less, $F(3,233) = 11.114, p = .000$. The RFP scale was rated higher overall for older adults with less education and less income.

Some additional comparisons were made to examine reasons for participation and other dimensions of involvement in NCSG. Table 3 provides a summary of the RFP scales related to dichotomous responses about NCSG as a part of weekly activities, motivations to be more physically active, motivations to be more socially active, and whether or not the recommended level of moderate physical activity was met. In all cases the physical health RFP scores were higher regarding the affirmative answers to the questions. The effect sizes, however, were small to moderate indicating that the magnitude of difference was not great. The interpersonal relationships reasons were statistically significant related to older adults who said that NCSG was a part of their regular weekly activities, were more physically active because of NCSG, and were more socially active because of NCSG. High scores for interpersonal relationship reasons, however, had no relationship to whether an individual met the recommendations for moderate activity. This lack of association might be expected since some individuals participate in NCSG for mainly the social benefits. Intrinsic issues reasons for involvement in NCSG were statistically significant concerning being a part of regular weekly activities and perceptions of being motivated to be more physically active, but not related to motivation to be more socially active or to get the recommended level of activity.

Discussion

Research undertaken about older adults has often examined individuals with health problems and not necessarily older adults who perceive themselves as healthy. Findings from this study, however, contribute to the healthy older adult literature by examining why older adults participated in a community recreation program and the participant perspectives of contributions the program made to outcomes associated with physical and social health. Prohaska et al. (2006) suggested that to understand either activity or inactivity, researchers should focus on the types and levels of physical activity, the health benefits, factors that influence participation, and successful interventions and policies that can promote physical activity in older adults. Therefore, the purpose of this study was to examine reasons for participating in a community based recreation program, the nature of the experience related to health perceptions, and associations among reasons, the perceptions, and demographic variables that can help understand more about programs (i.e., interventions) such as senior games that can promote health. Although a direct link cannot be made between participa-

tion in a program such as NCSG and health, findings demonstrated reasons for participating and the nature of NCSG experiences that could facilitate better health.

The Value of NCSG Experiences

The reasons for participating in a program like NCSG can give insight into what is meaningful to older adults relative to their health and why they might seek opportunities that enable them to remain engaged at the community level. The top reason for NCSG involvement was "fun." Fun may not be directly linked to health but leisure researchers (e.g., Henderson & Ainsworth, 2002; Newton & Fry, 1998; Wankel, 1994) have shown that the value of enjoyment and fun is a precursor for instrumental reasons such as keeping active, being fit, or improving health. Health reasons, however, were clearly important as were most of the interpersonal relationships reasons. These reasons were also consistent with other studies (e.g., Hui & Rubenstein, 2006; Merrill et al., 2004; Payne et al., 2006) that have found that the reason older adults participate in recreation programs is because of social opportunities, physical health, and personal engagement. If the majority of health has to do with factors other than medical treatment (Iso-Ahola, 1994), then the activities afforded by an organization like NCSG is an example of a community focused health opportunity (Payne, 2002). As the "baby boomers" retire, older adults live longer, and people desire to stay in their homes as long as possible, the resources and opportunities available at the local level will be essential for maintaining health and other aspects of quality of life.

The nature of the NCSG experience showed that being physically and socially active had perceived health impacts on these older adults. The respondents attributed NCSG involvement to being more physically and socially active and engaged. In addition, the perception that training and preparing for NCSG was a part of two thirds of these respondents' weekly activities year-around is noteworthy and underscored the value of regular social activities at home and in the community (Brawley, Rejeski, & King, 2003; Lees, Clark, Nigg, & Newman, 2005). As adults age, consistent meaningful undertakings close to home play an increasingly essential role in their daily lives (Brawley et al.; Mobily et al., 1994; Orsega et al., 2003). The structure of the NCSG provided regular opportunities to prepare with others for larger events. Further, local parks and recreation programs available in most municipalities or counties had a facilitative role in promoting regular physical activity and social interactions for older adults. For most NCSG participants involvement was not a one-shot event. *Preparation for* the yearly competition seemed to be more (or at least equally) important as *participation in* the one day Local Games. The structure provided by the local organizations, as well as the social environment and the "fun" that participants experienced, appeared to facilitate a desire to make preparing and training for the games a routine that led to perceptions of enhanced health.

The associations between the reasons for participating and the demographic attributes of the respondents were particularly interesting regarding both the differences and similarities found. For example, women perceived themselves to be just as healthy and physically active as men in the ways that NCSG motivated them to be involved. Women, particularly of this generation, may not have grown up with sports opportunities the same way that men have (Henderson et al., 1996), so NCSG clearly offered them an important physical opportunity as well as a social outlet.

Rural and urban residents showed no differences on any of the variables measured indicating that the NCSG program seems to be working equally well in both geographic areas. This finding is important because it indicates that regardless of geographic location, participants indicated similar reasons regarding how NCSG contributed to their physical and social

health. Rural areas frequently have less funding available than in metropolitan areas. NCSG appeared to be an organization that provided important services for rural residents who may traditionally have fewer opportunities particularly for structured recreation opportunities compared to cities (Wilcox et al., 2003).

The interpersonal relationship reasons for participating in NCSG showed the most differences regarding demographic characteristics. Women, people living alone, older adults having a high school education or less, people with traditional racial minority status, and older adults with lower incomes rated the interpersonal relationships higher than others that did not have these characteristics. These groups have typically had less participation in physical activity opportunities (Prohaska et al., 2006). Therefore, the finding that NCSG contributed to these populations indicates the organization's success and importance in addressing the diversity of older adults in the state. The NCSG respondents were more highly educated and had higher incomes than the state averages, but those older adult participants who lived alone, had fewer financial means, and less education indicated greater importance for participation in NCSG perhaps because they had limited opportunities Additional research would be useful to understand more about these typically underserved populations.

No differences were found regarding race, which also indicated that similar perceived health benefits were occurring regardless of racial or ethnic identity. The pragmatic challenge, however, now lies in getting more individuals with a variety of demographic characteristics involved with the program in greater numbers.

As noted above, findings from this study do not allow a direct link between NCSG and actual health. The older adults in this sample, however, perceived that their health was maintained and/or enhanced through their engagement in year-round involvement in NCSG. Therefore, this model for senior games is perceived as a catalyst for better health.. However, we are not suggesting that these results can be generalized to all senior games programs in the US. Each program is different. Nevertheless, the *model* established by NCSG (i.e., community based, year-round, holistic, focused on physical as well as creative experiences, opportunities for participation at the local level and beyond) appears to be working in enabling participating older adults to become physically and socially engaged in life, which leads to better perceived health. The opportunities exist in communities and they have been structured such that they offer many reasons for involvement ranging from fun to social interactions to better health. In this case, the supply of possibilities seems to balance the demand expressed by the older adults.

Practical implications may also be considered for professionals who wish to facilitate programs with health outcomes. The combination of both physical and social activity is important regarding any type of program focused on older adults. For many older adults, but especially women and individuals living alone, social involvement on a regular basis was a key element to physical participation. In addition, although NCSG is a state-based organization, the way that local volunteers (e.g., staff in parks and recreation departments, senior center directors) implemented the mission of NCSG on a year-round basis offered opportunities for involvement especially for underserved rural and urban populations.

Limitations and Recommendations

Although this study provided insights into how a community based program like NCSG can impact older adults, several limitations also existed for this study. First, the study was cross-sectional and not experimental or longitudinal. Thus, cause and effect cannot be attributed between NCSG and physical or social activity. For example, the results showed that NCSG participants rated their health better than the NC population in general. How-

ever, perhaps individuals who are healthier and more socially gregarious are attracted to NCSG. In other cases, NCSG may play an integral role in contributing to the physical and social development of participants. That directional link, however, cannot be determined with this research design.

Another possible limitation of this study was that it involved only active older adults. As discussed earlier, knowing more about healthy active older adults may give clues regarding how to promote and maintain the involvement of others. This study did not examine nonparticipants and the issues that might influence their reasons for lack of involvement. Insights about nonparticipation in physical activity opportunities can be found in other studies (e.g., Dergance et al.; 2003, Henderson & Ainsworth, 2001; Lees et al., 2005), but the implications of nonparticipation in NCSG cannot be discerned from these data. We recommend that future researchers also may want to examine the reasons that older adults do not choose to participate in NCSG or other forms of physical or social activity even when the opportunities exist in their communities.

In addition, many of the older adults were thankful to have NCSG experiences and may have been reluctant to answer with other than positive responses. The amount of social desirability reflected in the answers is difficult to address as is the potential error in self reports about physical (Sims, Smith, Duffy, & Hilton, 1999) as well as social activity. People often tend to overestimate the amount of physical activity they get. Therefore, collecting objective data (e.g., pedometers, accelerometers) along with the subjective (i.e., self-report) may have been helpful. Future research might use these objective measures to ascertain how much more physically active older adults are who participate in regular NCSG training opportunities.

Some variability exists among the 52 local NCSG programs in the state even though NCSG provides detailed guidelines for each community to follow. No analyses were done to compare the 52 local sites to see what differences might exist and to determine if some programs were more effective than others. An analysis of program differences may offer more evidence about the best structures and means to motivate older adults to become active in a program like NCSG. Nevertheless, these results confirmed previous literature about the importance of community based organizations as catalysts for physical and social involvement.

We also recognized, as Dionigi (2006a) suggested, that aging carries many meanings. A quantitative study such as ours with its explicit research questions did not allow for alternative interpretations of what involvement meant and how NCSG might relate to other dimensions of aging (Dionigi, 2006b). Therefore, a great deal more needs to be explored with the use of qualitative data as well as case studies. Although an open-ended question was included on the survey, it did not provide enough data to warrant systematic analysis. Collecting qualitative information would likely provide additional insight and add further understanding about the value of NCSG as a community health promotion organization.

Future studies using longitudinal data also would be helpful in addressing the influence of a program liked NCSG over a period of time regarding the health of individuals. Further, a need exists to translate research results related to the proven efficacy and effectiveness of community-based programs into recommendations for other community interventions. The impact of NCSG or similar community based programs relative to the health care system and economic impacts would be an area for potential consideration as well. In addition, based on these findings more leisure research should be done to examine how social and physical environments in communities influence individual behavior (Sallis et al., 1998).

In sum, NCSG is an example of an organization that has focused on health promotion through physical and social recreation opportunities. Because of the structure, participation has been broad representing a spectrum of individuals. The findings from this study reiterat-

ed the value of a community based recreation program with its focus on weekly year-around physical and social involvement as well as the opportunities for competition. This focus on community opportunities to motivate individual involvement in physical and social leisure opportunities appears to be a model that can make an important contribution to the health of the growing population of older adults.

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