

## **Local Park Use and Personal Health Among Older Adults: An Exploratory Study**

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**EXECUTIVE SUMMARY:** Regular park use is common among older adults. However, this use has only recently (i.e., last 15 years) been recognized as related to health and health policy. Although visits to parks are thought of as recreation, increasing evidence indicates such behavior has significant health consequences. Given the huge and growing expenditures for health in the United States, the aging of the population, and the consequences of the Baby Boom cohort reaching old age, new ways of conceptualizing and delivering health care will occur rapidly. Recreation and park professionals need to better understand the ways in which low-cost, readily available resources such as local parks may contribute to personal health and the potential for such a contribution to be increased. This study was undertaken to examine the relationship between use of local parks and self-reported individual health among adults 50 years of age and older. Specific aims were to examine: (1) sociodemographic differences between park users and non-park users, (2) differences in perceived health between park users and non-park users, (3) the logistics (e.g., frequency, travel mode) of park use, (4) benefits attributed to park use, and 5) the relationship between park access and perceived health. A questionnaire was developed and distributed in cooperation with Cleveland Metroparks and a grant from the National Recreation Foundation. The questionnaire was distributed in parks, supermarkets, shopping malls, and senior centers to achieve a diverse sample of both park and non-park users. The survey included questions about personal health (i.e., physical, mental), social support, health behaviors, park and leisure behavior, and demographics.

The results of this exploratory study indicated support for the contention that local parks should be thought of as a part of a viable strategy for health promotion and disease prevention. Park use was fairly extensive among older Cleveland residents, with 33% who visited a local park frequently and 53% who visited occasionally. Regarding use of Cleveland Metroparks, the mean number of annual visits was 30 and 12% of respondents visited a Cleveland Metropark at least once per week. The majority of older park users were physically active during their visit, with over 69% obtaining moderate or high levels of physical activity. An average visit lasted about 2 hours and users spent about half of their time walking.

The benefits that older local park users ascribed to their visits were mostly health related. In addition, people who lived within walking distance of a park used parks significantly more than individuals without a park within walking distance. Moreover, individuals with a park within walking distance were in better health than those without a park nearby. Results suggested that parks are a viable context for health promotion activities such as physical activity.

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## **Introduction**

A nationwide study showed that the majority of people over the age of 50 use local parks (Godbey, Graefe, & James, 1992). Godbey et al. reported that people between the ages of 66 and 75 were slightly more likely to use local parks frequently than other age groups. Among Americans aged 56 to 75 years, over 6 out of 10 people reported using local parks. Even among individuals who were 75 years and older, more than 4 of every 10 visited local parks. Thus, not only did the majority of people age 55 years and over use local parks, but sizable portions used them frequently, and such use continued into later life. Additionally, Godbey et al. found that when older park visitors were asked to describe benefits they received from park use, their answers most frequently included the chance for exercise and stress reduction.

Although park behavior is fairly extensive among older adults, such use is only recently being recognized as related to health and health policy. The use of parks to improve or maintain health may be increasingly important because of the following factors: (1) large and rapidly increasing health care costs for the elderly in the United States, which are growing 3 to 4 % faster than the gross domestic product per year over the last 20 years (Fuchs, 1999), (2) the aging of the population and consequences of the Baby Boom cohort reaching old age, (3) the rise of sedentary lifestyles (U.S. Department of Health and Human Services, 1996), and (4) the obesity epidemic (Centers for Disease Control and Prevention, 2003). Moreover, lifestyle behaviors have been estimated to account for 50% of people's health (Rowe & Kahn, 1998), emphasizing the growing importance of prevention and personal responsibility for health.

Evidence exists regarding the health benefits of leisure experiences (cf., Iwasaki, 2002; Kleiber, Hutchinson, & Williams, 2002; Tinsley, Tinsley, & Croskeys, 2002). Less is known, however, about the relationship between local public park use and various measures of health. Since local public parks are a readily available low-cost resource for physical activity, stress reduction, and socialization, more research on the health benefits of park use should be conducted. The current study attempts to address the information gap regarding park use and health.

Some research suggests a connection between park use and health (cf., Godbey & Blazey, 1983; Hull & Michael, 1995; Orsega-Smith, Mowen, Payne, & Godbey, 2004). Kaplan and Kaplan (1989) purported that natural environments such as parks are important to promote health

because they provide the opportunity for restorative (i.e., physical and cognitive) experiences. These experiences can restore energy and generally refresh an individual. They also suggested that natural experiences offer opportunities for reflection about life and a chance to clear one's head. Pieper (1952) emphasized the value of interacting with nature by stating "if we let our minds rest contemplatively on a rose in bud or a child at play, we are rested and quickened as though by a dreamless sleep" (p. 42). Some empirical evidence supports these philosophical ideas (cf., Godbey & Blazey, 1983; Hull & Michael, 1995; Orsega-Smith et al., 2004; Tinsley et al., 2002).

Godbey and Blazey (1983) explored the leisure behavior of older adults (55 years and above) who participated primarily in light to moderate physical activity in urban parks. Approximately half of the sample indicated that they were in a better mood after visiting the park. More and Payne (1978) found that participants' negative moods decreased after leaving a park and that park users reported lower levels of anxiety and sadness. Hull and Michael (1995) sought to determine if setting (i.e., indoor versus outdoor) played a significant role in shaping people's moods. Results indicated that the longer people stayed at a park, the less stressed they reported feeling. This finding was consistent with another study of stress and park use that showed that highly stressed older adults stayed significantly longer during their park visit than individuals who were not stressed (Orsega-Smith et al., 2004). Overall, these findings suggested that leisure behaviors within natural park settings could positively influence mood states, reduce stress, and improve short-term health perceptions.

Growing evidence suggests that park environments play a unique role in promoting health and alleviating stress (Godbey & Blazey, 1983; Hull & Michael, 1995; Payne, Orsega-Smith, Godbey, & Roy, 1998). Furthermore, Tinsley et al. (2002) examined psychosocial benefits of urban park use and found that most park users experienced "an immediate sense of pleasure or gratification and opportunity to engage in non-challenging activities without the need for complicated planning or long-term commitment" (p. 210). Respondents also reported that social interaction and opportunities for physical activity were salient benefits of their experiences.

Recent research indicates that the perception of health benefits can vary based on ethnicity. Ho and colleagues (in review) examined the role of ethnicity in recreation preferences and park visitation. They found that reported benefits (e.g., improved overall health) differed based on ethnicity. For instance, in general all ethnic groups agreed that local recreation and park areas contributed to overall health. Japanese Americans showed the highest agreement regarding improved overall health, followed closely by Chinese Americans, while Korean Americans and African Americans rated health as the lowest benefit among all groups.

The findings from these studies offer evidence that people do experience a variety of benefits while using parks. Some important questions remain, however. For example, do people who report health related

benefits use parks more or less than those who do not report health benefits? The current study builds on the evidence that using local parks is associated with health benefits.

#### *Purpose*

The purpose of this study was to examine the relationship between use of local parks and individual health among adults 50 years of age and older. The following research questions were examined:

1. Do park users and non-park users differ significantly regarding socio-demographics such as education, gender, marital status, employment status, and disability status?
2. Do park users and non-park users differ significantly regarding perceived physical health, perceived mental health, and daily physical activity level?
3. What are the “logistics of use” among older park users? How do they get to the park? What do they do when they visit a park? How often do they visit? How long do they stay at the park? With whom do they go to the park?
4. What benefits do older local park users ascribe to their visits? Which benefits are significantly associated with more frequent park use?
5. Do individuals with a park within walking distance use parks more frequently than individuals who do not have a park within walking distance? Is having a park within walking distance associated with better perceived health?

#### **Methodology**

The researchers used both a questionnaire and a 5-day diary to conduct the study. The diary portion of the study is reported elsewhere (see Orsega-Smith, et al., 2004). The questionnaire was designed to elicit information about the use of parks, benefits associated with park use, and individual health. A total of 3,374 questionnaires were distributed to adults 50 years of age and over with 1,515 returned, resulting in a 45% response rate. In addition to fixed-category questions, researchers used open-ended questions to keep respondents from reacting to a set of predetermined factors that could facilitate socially desirable responses (Barro, Manfredo, & Wells, 1994).

#### *Park System Characteristics*

Cleveland Metroparks is a park district serving the City of Cleveland and surrounding Cuyahoga County communities. Its mission is to provide conservation, recreation, and education opportunities for all citizens. Currently, the Park District encompasses over 20,000 acres of park land that is devoted primarily to outdoor recreation (e.g., multipurpose trails, picnic facilities, golf courses, nature centers) and nature conservation. While park amenities emphasize self-directed leisure such as walking, bicycling, and picnicking, a number of organized events and programs are

also offered, such as the Art & the Park Festival and the Institute of the Great Outdoors program. The 14 different reservations within the Park District are day-use only. The parks have no entrance fee and most are located within a 15-minute driving distance of residents in the tax district. Most municipalities also own and operate a small number of local community parks and playgrounds. However, Cleveland Metroparks is considered the major provider of parks and outdoor recreation opportunities in the Cleveland Metropolitan area.

#### *Instrumentation*

Several instruments were developed to measure park use and behaviors. Most of the self-reported health measures used were validated scales used in large population studies. Physical health was measured through self-reports.

*Perceived physical health.* The perceived physical and mental health measures were subscales from the Rand Medical Outcomes Study Health Survey (MOS SF-20) (McDowell & Newell, 1996). The SF-20 is a validated scale that has been used in several population studies and is considered appropriate for older adults. Regarding perceived physical health, respondents were asked to describe the extent to which the following four statements were true: (a) "I am somewhat ill," (b) "I am as healthy as anybody I know," (c) "My health is excellent," and (d) "I have been feeling bad lately." Responses were initially coded on a 5-point scale in which 1 = definitely true, 2 = mostly true, 3 = don't know, 4 = mostly false, and 5 = definitely false. Items stated positively (e.g., My health is excellent) were later reverse coded so that a higher score indicated better health. In accordance with the published protocol (McDowell & Newell, 1996; Stewart, Hays, & Ware, 1988), responses were recoded into intervals of 25 (from 0 to 100) where 1 = 0, 2 = 25, 3 = 50, 4 = 75, and 5 = 100. A composite score from zero to 100 was then computed by averaging the four individual items. Alpha reliability testing conducted by the researchers yielded an acceptable score of .87 for the scale.

*Perceived mental health.* Perceived mental health was measured with a 6-item mental health scale from the Rand MOS SF-20. Participants responded to six situations. Examples of the six situations are as follows. How much of the time during the past month: (a) "Has your health limited your social activities (like visiting with friends or close relatives)?" (b) "Have you been a very nervous person?" Responses were coded on a 6-point scale in which 0 = all of the time, 1 = most of the time, 2 = a good bit of the time, 3 = some of the time, 4 = a little of the time, and 5 = none of the time. Positively phrased items were reverse coded so that a higher score indicated better health. Following the published protocol (McDowell & Newell, 1996; Stewart et al., 1988), responses were then recoded into intervals of 20 (from 0 to 100) where 1 = 0, 2 = 20, 3 = 40, 4 = 60, 5 = 80, and 6 = 100. A composite score was then computed by averaging the six individual items. Reliability analysis conducted by the researchers yielded an acceptable scale reliability, with an alpha score of .85.

*General physical activity level.* Respondents were asked the following categorical question from Roy (1994): “Which of the following statements best describes your level of physical activity on an average day?” Answer categories included: (1) “I spend most of my time sitting or standing; I drive or take public transportation rather than walk, and I am more likely to use an elevator than take the stairs”; (2) “While my daily routine involves mainly sitting or standing, I take opportunities to get exercise by taking the stairs rather than the elevator, and walking or cycling rather than using a car or public transportation”; and (3) “My daily routine involves a great deal of physical activity including a lot of walking, lifting, etc.” Respondents selected one answer category that best represented their daily physical activity level.

*Park use.* In the park use section, respondents were asked two questions about their general park use: How often they used local public park areas and if they had a public park within walking distance of their home. The rest of the park questions were asked within the context of the respondent’s most recent park visit. The administration of the park use section of the questionnaire varied by data collection site. In parks, this section of the questionnaire was administered on-site. In supermarkets and malls, however, respondents took the entire questionnaire home to complete. *Park access* was measured by asking a dichotomous question, “Is there a public park within walking distance of your home?” *General park use* was measured with a question that asked how often they used local, public parks with a three-category scale: never, occasionally, and frequently. The next set of questions was asked specific to respondents’ most recent park visit. *Cleveland Metropark use* was measured by asking how many times in the last 12 months respondents visited a Cleveland Metropark. A list of all Cleveland Metroparks was provided to improve the validity of their answer. Two criteria were used to compute the park user versus non-park user variable. If respondents reported visiting a local park occasionally or frequently and if they visited a Cleveland Metropark more than once per year, they were coded as park users. Respondents who answered they never used a local park and never used Cleveland Metroparks were coded as non-park users.

*Logistics of park use.* Respondents were asked how long they stayed at the park in hours and minutes. They were also asked with whom they visited the park and were instructed to check all that applied from the following answer categories: (1) alone, (2) with friends, (3) with family, or (4) other. Park activity was measured with an open-ended question in which respondents listed up to six activities they engaged in during their most recent park visit. Responses to this question were reduced to a set of four categories that reflected estimated energy expenditure. This categorization was based on the recommendations from the compendium of physical activities (Ainsworth et al., 1993). Categories were sedentary (e.g., fishing, reading, viewing nature, photography, people watching, eating), light physical activity (e.g., visiting a nature center, playing with grandchildren, walking 20 minutes or

less), moderate physical activity (e.g., walking 21-45 minutes, biking, hiking, or swimming less than 30 minutes), and vigorous physical activity (e.g., walking more than 45 minutes, running, biking, or swimming for more than 30 minutes). Park activity was scaled as an ordinal variable with 1 = sedentary activity, 2 = light aerobic activity, 3 = moderate activity, and 4 = vigorous activity.

*Park benefits.* Respondents were asked to list up to three benefits they experienced as a result of their park visit. Since respondents might report multiple benefits for one particular park activity, they were instructed to write down the most important benefit first (Driver, Brown, & Peterson, 1991). This strategy enabled researchers to understand the breadth of benefits reported, yet focus on the most salient benefit for the current study. The categories were then qualitatively reduced from a list of 40 benefits to a set of 21 mutually exclusive categories (Figure 1). Next, using sets of index cards onto which each of the 21 benefits was written, five graduate students sorted the benefits into categories according to benefits they felt grouped together conceptually. The five raters then presented their categories and through a consensus-building process agreed on eight categories (Figure 2). Three leisure studies faculty then reviewed the content and classification of the categories and judged them to be mutually exclusive, logically organized, and consistent with existing literature.

*Demographics.* In addition to the leisure behavior instrument and health status assessment instruments, a variety of demographic information

**Figure 1**  
**21 Categories for Park Benefits**

1. Exercise	8. Enjoy	15. Expression
2. Nature	9. Reflect	16. Stimulation/Concentration
3. Social	10. Activity Itself	17. Novelty
4. Renew	11. Learn	18. Escape
5. Health	12. Accomplish	19. Competition
6. Utility	13. Entertain	20. Appreciation
7. Help Others	14. Challenge	21. Other

**Figure 2**  
**8 Categories for Park Benefits**

Exercise	Health	Renew	Nature	Enjoy
Strength	Better Health	Refresh	Scenery	Fun
Endurance	Mental Health	Clear Mind	Wildlife	Satisfaction
Circulation	Lower BP	Relieve Stress	Fresh Air	Wonderful
Muscles	Lose Weight	Revitalize	Enjoy	
	Relieve Aches	Feel Good	Outdoors	
	Loosen Muscles	Feel Better	Aesthetics	
		Lift Spirits	View Water	
		Good Mood	Beauty	
		More Energy	Sights	
			Cool Off	
Learn	Activity	Social		
Education	Activity Itself	Socialize with		
Learn	Interest in	Family and/or		
History	Activity	Friends		
		Talk		
		Fellowship		
		Companionship		

was collected. In this study, demographic information was particularly important since prior research indicated that age, income, education, and ethnicity were associated with state of health (cf., Feinstein, 1993; Johnson & Wolinsky, 1994; Williams, 1990).

#### *Procedures*

Trained field staff distributed the questionnaires 6-7 days per week for 3 months in parks, grocery stores, shopping malls, and senior centers in northeastern Ohio from May to September 1997. In parks, field staff set up a table with a sign that announced the study and offered free blood pressure checks. The table was set up near high use areas such as trails and parking lots. In shopping malls, the table was set up in dense traffic areas near information kiosks. In supermarkets, field staff were stationed just inside or outside the entrance/exit to the store to catch shoppers on their way in or out of the store. A quota sampling procedure was followed to obtain a demographically diverse sample that was fairly evenly distributed geographically around the Cleveland area. Researchers strategically selected data collection sites to represent areas of the county that reflected different levels of socioeconomic status.

Interviewers approached all individuals who appeared to be 50 or over, asked a filter question to verify their age, and offered them a free blood pressure check and other incentives such as complimentary refreshments and door prizes (i.e., dinner certificates, zoo and golf passes) to encourage participation. In parks, respondents completed the park use section of the questionnaire on-site because park users appeared to be less rushed. However, in supermarkets and malls, respondents were given the entire questionnaire packet to complete at home. In the senior centers, the questionnaire was administered to groups of up to 30 people in conjunction with congregate meal programs. Center directors provided time for seniors to complete the entire survey packet on-site, although some took the survey home and returned it within 2 weeks to the center director.

#### *Analysis Plan*

Chi-square contingency analysis was used to examine differences in socio-demographics between park users and non-park users. *T*-tests were used to determine if park and non-park users were different on measures of perceived health. Chi-square analysis and analysis of variance (ANOVA) was used to examine questions related to park benefits reported by park users. Finally, ANOVA was used to determine if having a park within walking distance was associated with more frequent park use and better health ratings.

### **Major Findings from the Questionnaire Study**

#### *Differences in Sociodemographics Between Park and Non-Park Users*

The demographics of the sample were compared to that of Cuyahoga County where the data were collected (U.S. Census Bureau, 2004). The education level of the sample closely reflected Cuyahoga County, in which

32% ( $n = 470$ ) of respondents reported earning a high school diploma, followed by 28% who completed some college, 25% who earned an associate's degree or higher, and 15% who did not finish high school. However, the racial composition of the sample was predominantly white (88.7%;  $n=1295$ ) whereas 67% of the county population is white. Thus, readers should be cautious not to generalize the results of this study to all Cuyahoga County residents.

The sample of older Cleveland Metroparks visitors was diverse in terms of socioeconomic status and age, but more homogeneous concerning race. Among park users, 91% were white followed by 7% African Americans. However, the distribution was different for non-park users, with only 83% whites. Moreover, African Americans constituted approximately 16% of the non-park user sample, which was more than twice as many as the park user sample. Less than 2% of either group consisted of Asians, Hispanics, or Native American Indians.

Overall, park users were significantly more educated than non-park users ( $\chi^2 = 51.90$ ;  $df = 3$ ;  $p < .0001$ ). Only 41% of park users had completed a high school diploma or less, compared to 61% of non-park users. Moreover, twice as many park users (30%) as non-park users (16%) had earned an associate's degree or higher. The park user group consisted of 64% females, whereas 70% of non-park users were women. However, this difference was not statistically significant ( $\chi^2 = 3.18$ ;  $df = 1$ ,  $p = .076$ ). Park users were slightly younger ( $M = 66$  years) on average than non-park users ( $M = 70$  years), but the difference was not statistically significant ( $F = .43$ ;  $df = 1$   $p = .51$ ). Both park and non-park users had lived an average of 23 years in their present location, and all households were occupied by an average of two people (including the respondent). In terms of marital status, significantly more park users (61%) than non-park users (49%) reported being married ( $\chi^2 = 22.15$ ;  $df = 3$ ;  $p < .0001$ ). Likewise, more non-park users were widowed (34%) than park users (21%). This pattern was similar for employment status, with significantly more park users (17%) than non-park users (6%) being employed full-time and fewer park users (57%) than non-park users (67%) being retired ( $\chi^2 = 29.68$ ;  $df = 6$ ;  $p < .0001$ ). Park users were also significantly less likely to report having a disability (19%) than non-park users (32%) ( $\chi^2 = 22.20$ ;  $df = 1$ ;  $p < .0001$ ). Examples of reported disabilities included sensory (e.g., vision, hearing) and mobility (e.g., knee, hip) impairments.

#### *Differences in Health Status and Physical Activity Between Park and Non-Park Users*

Park users had significantly higher perceived mental health scores than non-park users (Table 1). On a scale from 0 to 100, the mean mental health score for park users was 77.06, compared to 73.55 for non-park users. Likewise, park users had significantly higher perceived physical health scores than non-park users. Park users' mean perceived physical health score (on a 0 to 100 scale) was 73.38, compared to 63.87 for non-park users. We also compared park and non-park users on a measure of overall physical

activity (Table 2). Non-park users were significantly more likely to report that their daily routine involves mostly sitting or standing. Specifically, 39.6% of non-park users reported a more sedentary daily routine, as compared to only 22.1% of park users. Also, more park users (43.3%) than non-users (22.8%) reported a great deal of daily physical activity in their daily routine, and more park users (45.6%) than non-park users (37.5%) took opportunities to get exercise on a daily basis.

**Table 1**  
**Perceived Health Differences Between Park Users and Non-Park Users**

Measure	Category	Mean	Standard Deviation	N	df	f-value	Significance (2-tailed)
Perceived Mental Health	Park User	77.06	21.36	983	1312	13.47	.0001
	Non User	73.55	25.32	331			
Perceived Physical Health	Park User	73.38	25.05	945	1251	17.32	.0001
	Non User	63.87	28.82	308			

**Table 2**  
**Physical Activity Differences Between Park Users and Non-Park Users**

Physical Activity Level	Non User % (N)	Park User % (N)	Total % (N)
My daily routine involves a great deal of physical activity	22.8% (65)	43.3% (294)	30.0% (359)
I take opportunities to get exercise	37.5% (107)	45.6% (415)	43.7% (522)
My daily routine involves mostly sitting or standing	39.6% (113)	22.1% (201)	26.3% (314)

$\chi^2=35.22$ ,  $df=2$ ,  $p<.001$

### *Logistics of Park Use*

Overall, about one-third of respondents reported using local parks frequently, and more than half (53.3%) of these visitors used parks occasionally (Table 3). Specific to Cleveland Metropark use, 74.8% of respondents reported using a park at least once during the last 12 months. Among Cleveland Metropark users, 11.9% ( $n = 156$ ) of all respondents visited a Metropark from 52 to over 100 times per year, 7.2% ( $n = 95$ ) visited from 26 to 51 times, and 13.3% ( $n = 175$ ) visited from 12-26 times, with the rest of the sample visiting less often (Table 3). Over 90% of visitors drove to the park. Of the other 9%, most walked, followed by taking the bus and riding a bicycle. Almost half (48%) of park users visited with family, followed by going alone (21%) or with friends (18.4%), and 8.5% visited with a combination of friends and family.

The majority of older visitors were physically active while they used Cleveland Metroparks. In terms of on-site behaviors, over two-thirds used the parks for moderate or high levels of physical activity. More specifically,

16.1% ( $n = 174$ ) had a high level of physical activity (e.g., walking for more than 45 minutes, running, biking, or swimming for more than 30 minutes), 53% ( $n = 573$ ) had a moderate level (e.g., walking 21-45 minutes, biking, hiking or swimming less than 30 minutes), 17.3% ( $n = 187$ ) had a low level (e.g., walking 20 minutes or less, visiting a nature center, playing, with grandchildren), and 13.6% ( $n = 147$ ) were sedentary. An average visit lasted 1.91 hours ( $sd = 1.49$ ) and ranged from 20 minutes to 12 hours. Also, visitors spent an average of 47 minutes ( $sd = 20.2$ ) walking. The standard deviation for walking was large, indicating that much of the sample either walked quite a bit or not much.

#### *Perceived Benefits of Park Use*

Many of the benefits older users ascribed to their park visits were health related (Table 4). Approximately 30% ( $n = 448$ ) of the respondents reported that getting exercise was the most important benefit of their park visit. About 13% ( $n = 194$ ) of respondents stated the chance for renewal

**Table 3**  
**Park Use Characteristics**

Variable	Percentage	N
<u>Frequency of Local Park Use</u>		
Frequently	33.1	197
Occasionally	53.3	774
Never	13.6	481
Total Local Park Use	100	1506
<u>Overall Use of Cleveland Metroparks</u>		
Yes	74.8	983
No	25.2	331
Total Park Use	100	1314
<u>Frequency of Visits in Last 12 Months</u>		
More than 100 Visits	8.3	109
52-100 Visits	3.6	47
26-51 Visits	7.2	95
12-26 Visits	13.3	175
Less than 12 Visits	42.1	557
Never	25.2	331
Total Park Visits	1314	100

**Table 4**  
**Relationship Between Park Use and Benefits Ascribed to Park Visit**

Benefit Category	Mean Visits	Standard Deviation	N	f-value	Significance (2-tailed)
Health	87.88	123.81	49	3.65	.0001
Exercise	46.05	81.65	416		
Renew	45.98	97.12	182		
Activity	29.57	35.81	7		
Enjoy	28.05	62.20	20		
Nature	26.11	63.28	141		
Learn	16.00	20.00	8		
Social	6.28	5.64	25		
Total			848		
df=8					

(i.e., stress relief, improving mood, and rejuvenation) was the most important benefit of their park visit. Being in nature was also cited as a salient benefit of park use by 10% ( $n = 151$ ) of respondents. While only 3.5% ( $n = 53$ ) of respondents named “health” specifically, clearly the benefits “exercise” and “renew” were health related. Fewer respondents mentioned “social” (2%;  $n = 29$ ), “enjoy” (2%;  $n = 22$ ), “activity itself” (0.7%;  $n = 10$ ), or “learn” (0.5%;  $n = 8$ ) as the most important benefit.

Individuals who perceived health, exercise, and renewal benefits from using parks visited parks significantly more often in the last 12 months than those who reported other types of benefits. As shown in Table 4, people who reported health-related benefits visited Cleveland Metroparks an average of 87.88 times within a 12-month period. Individuals who reported exercise and renewal (i.e., stress relief, clear head) as primary benefits used the parks an average of 46 times, followed by being interested in the activity itself, enjoyment, and nature. Benefits related to social interaction and learning were associated with the fewest mean number of park visits within the last 12 months. These results indicated that park visitation was more frequent among of those who reported health and exercise benefits during their park visit.

#### *Park Use, Access, and Subjective Health*

Respondents with a park within walking distance visited a local park significantly more frequently than those without a park within walking distance (Table 5). Specifically, respondents with a park within walking distance visited an average of 38.97 times per year, compared to 22.27 times per year for individuals without a park within walking distance. Next we examined the relationship between perceived health status and having a park within walking distance of one’s home (Table 6). Mean perceived health scores were significantly higher for those with a park within walking distance. The mean perceived physical health score was 72.24 for respon-

**Table 5**  
**Differences in Park Visitation Between Respondents Who Do and Do Not Have a Park Within Walking Distance (WWD)**

Group	N	Mean Number of Park Visits	Standard Deviation	F-Value	Significance
No Park WWD	653	22.27	61.97	32.80	.0001
Park WWD	667	38.97	81.72		
df=1					

**Table 6**  
**Perceived Health Differences Between Those Who Do and Do Not Have a Park Within Walking Distance (WWD)**

Measure	Category	Mean	Standard Deviation	N	f-value	Significance (2-tailed)
Perceived Physical Health	Park WWD	72.24	25.73	708	4.97	.0001
	No Park WWD	69.07	27.14	676		
Perceived Mental Health	Park WWD	77.21	22.21	747	4.05	.0001
	No Park WWD	74.82	23.11	713		
df=1						

dents with a park within walking distance, as compared to 69.07 for respondents without a park within walking distance. Mean mental health scores for people with better park access were 77.21, compared to 74.82 for people without a park within walking distance.

### **Discussion and Implications**

The purpose of this study was to examine the relationship between park use and selected measures of self-reported physical and mental health. Results indicated some support for the assertion that park use is associated with better ratings of perceived health, and that older adults experience health-related benefits from using parks. In the following discussion, key findings are highlighted and connected to existing literature.

#### *Socio-demographic Differences Between Park and Non-Park Users*

Park users were significantly more educated than non-park users. Two possible explanations may exist for this result. First, it is plausible that more educated people are more likely to use parks because they are aware of the benefits of parks for exercise, wildlife viewing, and other activities. Furthermore, most Cleveland Metroparks are located in closer proximity to middle- and higher-income residential areas, thus increasing the likelihood that these areas contain more educated people who use nearby parks.

Park users were significantly more likely to be married and employed than non-park users. This finding might be explained by the fact that park users were on average 4 years younger than non-park users and therefore less likely to have retired from work. Furthermore, social support is an important determinant of physical activity (Courneya, Plotnikoff, Hotz, &

Bickert, 2000; Oka, King, & Young, 1995; Spanier & Allison, 2001). Thus, those who were married may be more likely to use parks because they have an available companion to visit with as compared to individuals who are not married. In fact, over two-thirds of married park users visited with a family member. It was not surprising to find that park users were significantly less likely to report a disability than non-park users. Poor health and having an injury or disability is often cited as a constraint to leisure participation, park use, and physical activity (Booth, Bauman, & Owen, 2002; Booth, Bauman, Owen, & Gore, 1997; Mowen, Payne, & Scott, in press). Therefore, it is plausible that people with disabilities use parks less frequently than able-bodied individuals.

#### *Park and Non-Park User Differences in Health Status and Physical Activity*

Overall, park users reported a higher mean perceived mental health score than non-park users. Also, park users scored much higher on perceived physical health than non-park users. One possible explanation is that non-park users were older and reported significantly more disabilities than their park-using counterparts. Moreover, when we examined general physical activity level, we found that non-park users were twice as likely to have sedentary daily routines. The explanation for their sedentary lifestyle might be a function of poor health. What is unclear in this study is if park use fosters improved health or if people in better health are more likely to use parks. Indeed, the relationship between leisure participation (specifically park use) and health appears to be bi-directional. That is, people in better health are more likely to use parks. As well, people who use parks are likely better able to maintain and improve their health (Coleman & Iso-Ahola, 1993; Payne, Mowen & Montoro-Rodriguez, in press).

#### *Logistics of Park Use*

In general, the majority of respondents reported using local parks occasionally and about one-third visited frequently. Cleveland Metroparks were used once per week or more by 20% of respondents. About 42% visited less than once per month and a quarter of the sample never visited Cleveland Metroparks. There are two possible explanations for this finding. First, Cleveland Metroparks are not evenly distributed throughout the county. Rather, they form a semicircle surrounding the periphery of the county, and few parks are located in the central part of Cuyahoga County. A Cleveland Metropark is located within a 15-minute drive of most residents. Most parks are mainly accessible by car, and since Cleveland does not have an expansive public transportation system, many older people may not perceive the parks as conveniently located for regular use. In fact, a study by Mowen, et al. (in press) revealed that older adults reported that lack of transportation was a major constraint that limited their park use. In addition, Cleveland Metroparks are more focused on self-directed outdoor recreation activities, rather than more developed (e.g., playgrounds, ball fields) and organized recreation activities. It is plausible that some people might be more likely to use Cleveland Metroparks if they offered more opportunities for organized recreation (e.g., athletic fields, swimming pools, playgrounds).

Most park users were engaged in moderate to vigorous physical activity. We were encouraged that respondents stayed nearly 2 hours at the park during their most recent visit and during that time they spent about 47 minutes walking. Walking was the most common park activity reported. In their study of park use among older adults, Raymore and Scott (1998) also discovered that walking was frequently cited as a common park activity. This finding is encouraging because it suggests that respondents view parks as a viable context for physical activity. This is particularly important since more than 50% of Americans do not obtain enough physical activity to achieve any health benefits (Centers for Disease Control and Prevention, 2004). Furthermore, this finding provides policy makers with evidence that parks are a well-used resource for physical activity. While some policy makers may view parks as locations for social activities (e.g., picnics) and sedentary activities (e.g., fishing, sitting on a bench), the findings from this study indicate that a majority of Cleveland Metropark users are engaged in physical activity.

#### *Perceived Benefits of Park Use*

Many of the benefits of park use reported were health related. A large proportion of respondents stated that the most important benefit of their park visit was the opportunity to get exercise and experience renewal (e.g., stress relief, rejuvenate, improve mood). This finding is consistent with previous studies of park use in which exercise and stress relief were cited as notable park benefits (Godbey & Blazey, 1983; Godbey et al., 1992). Moreover, Tinsley et al. (2002) also found that opportunities for physical activity, social interaction, and an immediate sense of enjoyment were salient benefits of park use. The nature of the benefits reported is particularly important in light of the national crisis associated with obesity and sedentary lifestyles. Sedentary lifestyles are associated with higher incidences of diseases such as obesity, diabetes, hypertension, and some forms of cancer (Blair et al., 1995; Lee & Paffenbarger, 1994). In addition, physical inactivity was cited as an important predictor of all causes of mortality (Blair et al., 1995). Moreover, in a study of youth physical activity and obesity, Sallis and colleagues (1993) found that the number one predictor of childhood obesity was being indoors. Thus, it seems that parks are an important resource for encouraging physical activity. In addition, the current findings indicate a majority of those who use parks are using them in ways that promote physical activity. Besides opportunities for exercise, respondents stated that their park experience facilitated stress-relief rejuvenation and improved mood. This finding is consistent with the findings from several previous studies (Godbey & Blazey, 1983; Hull & Michael, 1995; More & Payne, 1978; Orsega-Smith et al., 2004).

We also examined the relationship between frequency of park visits and types of benefits reported. People who reported health-related benefits used parks significantly more often than those who perceived other benefits such as nature and social activity. This finding suggested that people who were aware of the health benefits of parks visited frequently. Thus, it is

plausible that people who cite health as a primary benefit may be consciously using the parks as a venue for health promotion/disease prevention.

#### *Park Access, Park Use, and Perceived Health*

In response to the obesity epidemic, numerous professionals in areas such as public health and urban and regional planning have argued that people need access to parks and recreation facilities and other areas for physical activity (James, Killingsworth, & Morris, 2003; Sallis, Bauman, & Pratt, 1998). In the current study, individuals who reported having a park within walking distance from their homes used a Cleveland Metropark almost twice as frequently as those without a park within walking distance. Respondents with a park within walking distance were also more likely to use local parks in general more frequently. Studies concerned with park access support the assertion that having access to a public park is associated with higher physical activity levels (Addy et al., 2004; Humpel, Owen, Iverson, Leslie, & Bauman, 2004). For example, Addy and colleagues examined social and environmental factors that influenced physical activity. Through telephone interviews they found that neighborhood variables such as parks, playgrounds, sports facilities, and schools were significant predictors of physical activity. They concluded that parks and other open spaces and facilities should be the target of future physical activity intervention programs because of their close proximity to residences. In a study of self-reported environmental attributes of physical activity, respondents whose perceptions of access were higher also reported a higher frequency of walking for pleasure (Humpel et al., 2004). Public parks should have a major influence on physical activity behavior because they are fairly accessible, low cost, developed to appeal to a variety of activity preferences, and intrinsically enjoyable. According to James et al. (2003), "one viable approach to increase physical activity levels is to develop policies and programs that support park, trail and greenway development and use" (p. 50). It was also found that individuals with a park within walking distance reported better health than those without a park within walking distance. This finding may be related to the fact that people with a park within walking distance use parks more frequently than those without a park within walking distance. Thus, it is plausible that living near a park facilitates physical activity, which in turn contributes to health. However, we cannot definitively establish this line of cause and effect in the current study due to limitations in the study design.

#### *Limitations*

This research contained several study limitations that should be considered in the interpretation of the results. One important limitation is the cross-sectional nature of the research design, which prevented us from establishing causal inferences in the relationships between health and park variables. In addition, the nature of these attitudinal and psychological variables made it difficult to establish causal models with regard to the

directionality of the relationships between the dependent and the independent variables, i.e., perceived health and park use. For example, an alternative model might state a reverse relationship, since it could be presumed that people in better health would be more likely to use parks. Also, this study was based on self-reports (e.g., park visits, health) and was retrospective. Therefore, it is plausible that respondents overestimated park use and time spent walking. In addition, perceived health scores may also have been inflated. However, the literature on self-reported health (Johnson & Wolinsky, 1994; Williams, 1990) indicates perceived health measures are reliable and valid because one's perceived health impacts their behaviors (e.g., park visits, physical activity level). Moreover, the sample in this study was not selected randomly, nor was it representative of the population studied. Therefore, future studies should use representative samples and quasi-experimental designs so that cause and effect can be established.

### **Conclusion**

Overall, the findings from this study suggest that people perceive health-related benefits from using parks. This relevant evidence can be incorporated into marketing plans, referendum campaigns, and grant applications developed by public park and recreation agencies. In the range of public services offered in local communities, often public parks and recreation services are viewed as offering only fringe benefits rather than being an essential component of health and quality of life. Findings presented in this study represent one step toward documenting the association between park use and health. The results from this study may also be useful for marketing parks as venues for physical activity. Clearly, respondents in this study used parks predominantly for physical activity and reported numerous perceived health-related benefits. Thus, shifting a marketing orientation from an agency that provides fun and games to an agency that facilitates health promotion and disease prevention is a logical strategy to employ.

The findings from this study also suggest that people who have parks within walking distance use them more frequently and are in better health than those without parks within walking distance. Professionals in parks and recreation and urban and regional planning may be able to use these findings as leverage for the acquisition and development of additional open space. In future studies, quasi-experimental designs might be productive research designs for better understanding the cause and effect between park use and health. Furthermore, a week-long diary study or "beeper" study using the experience sampling method is unquestionably more reliable and valid than retrospective snapshots of past park behavior. It is also important to consider the use of objective measurements of physical activity (e.g., pedometers, accelerometers) and health (e.g., maximum oxygen uptake, blood pressure, cortisol levels) in understanding park behavior and physical activity. These strategies can improve the reliability and validity of park use studies and help tease out the effects of park use versus other forms of

physical activity on health (cf. Orsega-Smith et al., 2004). Moreover, it is important to understand how people define the concept of a park and examine behaviors and their outcomes in various green spaces (e.g., school- and churchyards, cemeteries) that perhaps are not publicly sanctioned as parks. At a very basic level, agencies can begin understanding outcomes of their programs on participants simply by adding questions to program evaluations to assess perceived benefits or outcomes. While ideal, it may not be realistic for public park and recreation agencies to engage in randomized experimental design studies that include objective measures of physical activity and health; however, agencies should look for ways to partner with scholars and/or incorporate evidence-based research into their operations (e.g., marketing, fund-raising).

A health mandate is directly implied for public parks and recreation. Recognition as a part of the community health promotion arena may help strengthen the identity of public park and recreation agencies and provide a better-understood public image. The public sector of recreation and parks is growing in importance and becoming recognized by the government and influential health foundations (e.g., the Robert Wood Johnson Foundation) as a player in health promotion, obesity, chronic disease prevention, and public health. With the findings of this research and other related studies, public park and recreation agencies can demonstrate how they play a more significant role in the health promotion arena.

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