

OUTDOOR RECREATION PARTICIPATION OF PENNSYLVANIANS WITH DISABILITIES

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Abstract

Approximately 16% of United States residents report having some sort of physical disability that limits their recreation participation. Many of these individuals may have an abundance of free time due to unemployment, part-time work status, or retirement, and therefore recreation and leisure have the potential to provide great meaning in their lives. Qualitative and quantitative data from a State Comprehensive Outdoor Recreation Plan was used to better understand the outdoor recreation habits and perceptions of Pennsylvania residents with disabilities. Using descriptive, chi square, and ANOVA statistics, results indicate that these individuals perceive fewer benefits from outdoor activities, experience different types of constraints to participation, and have different perceptions of accessibility compared to individuals without disabilities. Results of this data analysis provide a better understanding of the perceptions that Pennsylvanians with disabilities have regarding future outdoor recreation participation, benefits of participation, and accommodations to facilitate participation.

1.0 Introduction and Literature Review

Adults with physical disabilities make up approximately 36 million or 16% of the United States population (CDC 2010). Within the Commonwealth of Pennsylvania, roughly 1.6 million residents are limited in activity participation due to a disability (U.S. Census Bureau 2009). The needs of individuals with disabilities were brought to the forefront in 1991 when the Americans with Disabilities Act (ADA) was signed into law. The ADA ensures that individuals with disabilities have “equal opportunity to benefit from all programs, services, and activities” and specifically mentions recreation (U.S. Department of Justice 2006). While accessibility guidelines have existed for the built environment since 1991, guidelines for specific types of outdoor recreation areas (other than U.S. Forest Service land) have yet to be released. The draft guidelines for outdoor developed areas is currently underway and will include areas such as camp shelters, trails, beach access routes, and tent pads/platforms (US Access Board 2007).

It has been frequently reported that individuals with a disability participate in fewer leisure pursuits, including outdoor recreation activities (Burns & Graefe 2007, Rimmer et al. 2004, Williams et al. 2004). This is especially unfortunate given the importance of leisure and recreation in the lives of individuals with disabilities, who are disproportionately unemployed and/or retired (Mannell & Kleiber 1997). Approximately 60% of Pennsylvanians with disabilities are unemployed, potentially leaving them with a preponderance of free time (Butler & Dattilo 2010). Individuals with disabilities represent an underserved population and face a variety of barriers to leisure participation in general (e.g. attitudinal, skill, financial). Recreation participation in an outdoor context can add additional constraints including safety concerns and transportation issues.

Individuals with disabilities experience a variety of benefits from participating in both structured and informal outdoor recreation activities. While more formal types of structured outdoor recreation (i.e. overnight camps, adventure therapy) have the potential to focus on specific needs and limitations of individuals, unstructured participation can also provide opportunities to acquire social skills, physical abilities, and self-esteem (Beart et al. 2001).

Given the potential benefits of and common barriers to outdoor recreation, this study sought to better understand the outdoor recreation patterns of Pennsylvanians with disabilities. More specifically, the three research questions were:

1. What perceived benefits do Pennsylvanians with disabilities receive from their outdoor recreation participation?
2. Do outdoor recreation constraints differ between Pennsylvanians with and without disabilities?
3. How accessible are local outdoor recreation areas to Pennsylvanians with disabilities and what could be done to improve accessibility?

These questions were answered through the analysis of quantitative data related to the perceived benefits and constraints individuals with a disability face, and qualitative data regarding preferred accessibility accommodations to facilitate outdoor recreation participation.

2.0 Methods

Data on outdoor recreation – including current and expected future participation, preferred recreation activities, and benefits of and constraints to participation – were drawn from the 2009-2013 Pennsylvania State Comprehensive Outdoor Recreation Plan (SCORP) dataset. States must complete SCORP every five years in order to be eligible for funding from the Land and Water Conservation Fund. A statewide stratified survey of Pennsylvania residents was conducted as part of SCORP with the intention of better understanding current outdoor recreation participation and opinions about key issues (e.g. land conservation, development, management). A random sample of Pennsylvania residents was purchased from a firm specializing in survey sample development. Data were collected through a mail/internet survey of Pennsylvania residents from eight geographic regions (including two urban regions). A paper survey was mailed to the sample between November 2008 and February 2009. Respondents had the option of completing the paper version of the survey or taking an identical online version. Respondents completing the online version of the survey accounted for about 13% of all respondents. Differences between mail and online respondents were generally small, with internet respondents reporting higher rates of participation in non-wildlife related outdoor recreation activities. To achieve statistically valid data at a regional level, a target sample size of approximately 350 respondents per region was needed. Based on an expected response rate of 20-25%, questionnaires were sent to 1,600 residents per region for a total of 12,800. A total of 2,648 completed surveys were returned resulting in a 21% response rate. For the complete study, see PA SCORP (<http://www.paoutdoorrecreplan.com/>).

2.1 Measures

A new response option related to disability was added in this SCORP survey. The survey asked “*Do you, or does anyone in your household, have a physical disability that affects your ability to participate in outdoor recreation?*” with the response options of “Yes, I have a disability,” “Yes, someone else in my household has a disability,” and “No, no one in my household has a disability.” Previously, response options were limited to “Yes, I have a disability and/or someone else in my household has a disability,” and “No, no one in my household has a disability.” While respondents were not asked to specify the type of disability, the inclusion of the additional response option helps identify differences between four groups including (a) respondent disability, (b) disability in household, (c) respondent and household disability (specified further as respondent/household disability), and (d) no disability.

2.1.1 Benefits of Outdoor Recreation

The survey asked about outdoor recreation benefits with the question, “*In your opinion, to what extent does outdoor recreation participation result in any of the following health benefits for you?*” Available responses included reduced stress, improved level of physical fitness, improved physical health, improved mental health, reduced anxiety, and enhanced family interaction. Response options were listed on a 5-point Likert scale from not at all (1) to a great deal (5).

2.1.2 Outdoor Recreation Constraints

Outdoor recreation participation constraints were addressed with the open-ended question, “*What are the most important reasons keeping you from participating in outdoor recreation activities as often as you like?*” Responses were coded (based on highest percentage of responses in common) into 10 categories for further analysis.

2.1.3 Outdoor Recreation Accessibility

Respondents were asked if “*public recreation areas and programs near where I live are accessible to people with disabilities.*” Response options were on a 5-point Likert scale from strongly disagree (1) to strongly agree (5).

Data were analyzed using descriptive statistics, analysis of variance, and cross-tabular analysis depending on the nature of the responses. Since a nominal amount of the sample had missing data, standard pair-wise deletion was used. While multiple variables used in this study were non-normal and skewed, conducting transformations did not improve these issues so the variables were analyzed without transformations.

3.0 Results

The sample was mostly male (63%, n=1653), Caucasian (87%, n=2,247), and married (65%, n=1,683) with an average age of 56 years (SD=14.7) (Table 1). Approximately 23% (n=556) of the sample reported some form of disability within the household (either respondent, other household member, or both). Respondents with a disability totaled 12% (n=317), respondents with a disability in the household totaled 8% (n=180), respondent/household disability totaled 3% (n=59), and the remainder with no disability totaled 77% (n=1,850). Further descriptive statistics for each of these groups is included in Table 2.

<Insert Tables 1 and 2 about here>

3.1 Benefits of Outdoor Recreation

An ANOVA was used to determine the mean differences between disability groups. Results indicated that the respondent/household disability group consistently perceived outdoor recreation to have fewer benefits when compared to other disability groups and individuals without disabilities. The only benefit that did not follow this pattern was *enhanced family interactions* where respondent disability had the lowest mean when compared to the other disability response options. While

significant group differences were identified, means did not fall below 3.6 (response scale from 1 to 5) indicating all respondents perceived some benefit from outdoor recreation participation. Results, including group differences, are specified in Table 3. While significant mean differences were identified in each group, effect sizes remained minimal. Cohen's *d* was used to determine the effect size and provided an indication of the strength of the relationship between two variables. The minimal Cohen's *d* values suggest that other factors may influence the perceived benefits of outdoor recreation participation such as age, degree of impairment, and availability of recreation opportunities.

<Insert Table 3 about here>

3.2 Outdoor Recreation Constraints

Pennsylvanians with disabilities also experienced different types of constraints when compared with Pennsylvanians without disabilities. Table 4 lists the constraint percentage within each disability group. Consistent with previous research (e.g. Burns & Graefe 2007, McCormick 2000) individuals without disabilities identified work/school (32.4%) and time (20.8%) as their biggest constraints, while health was the biggest constraint among the disability groups (respondent /household disability=71.2%, respondent disability=56.1%, and household disability=30.2%). To evaluate the relationship between constraints and disability, Cramer's *V* was used and identified a moderate relationship (Cramer's *V*=.30).

<Insert Table 4 about here>

3.3 Outdoor Recreation Accessibility

Table 5 includes results from an ANOVA where significant differences were found. Both respondent/ household disability (2.88) and respondent disability (3.08) were significantly different from household disability (3.37) and no disability (3.53). In other words, respondents with a disability were less likely to perceive public recreation areas and programs to be accessible compared to respondents without a disability. These results were further illuminated by responses to the open-ended question, "*What modifications could be made to improve your ability to engage in outdoor recreation activities?*" A total of 338 responses were provided with over half of the responses (56%) coming from people in the respondent disability category while 30% came from the household disability category, and 10% came from the respondent/household disability category. Qualitative data were analyzed by identifying themes and grouping responses based on these themes. The five largest themes that emerged were enhancing or improving pathways (e.g. "railings," "level, surfaced trails," "softer walking trails for bad knees," "no steps"), accessibility in general (e.g. "easier access to areas," "handicap accessibility"), wheelchair accessibility (e.g. "better wheelchair accessibility," "better wheelchair paths"), accessible parking/travel (e.g. "more handicapped parking, larger spaces," "I would like access to state game lands by vehicle"), and miscellaneous (e.g. accessible restrooms, alternative forms of communication, rest areas with benches, ATV trails).

<Insert Table 5 about here>

4.0 Conclusions

Results demonstrate that each disability group (especially individuals with both household and respondent disabilities) consistently perceived fewer benefits from outdoor activities, experienced different types of constraints, and had lower opinions of how accessible public recreation areas and programs were compared to Pennsylvanians without disabilities. There are a few practical implications from the results of these analyses.

First, outdoor recreation managers and their respective organizations must evaluate the accessibility of their facilities, particularly their outdoor areas. The Access Board's Americans with Disabilities Act Accessibility Guidelines (ADAAG, <http://www.access-board.gov/ada/>) provide specifications for buildings and some recreational facilities (e.g. golf courses, boating facilities); however, final guidelines have not been published for other outdoor recreation areas and facilities. Until the Access Board guidelines are published, the U.S. Forest Service provides an *Accessibility Guidebook for Outdoor Recreation and Trails* (<http://www.fs.fed.us/recreation/programs/accessibility/>), which can be adjusted to suit the needs of outdoor areas until the Access Board publishes the final guidelines for outdoor developed areas (<http://www.access-board.gov/outdoor/>). Once the final Access Board guidelines become available, the U.S. Forest Service will update their documents to ensure compliance.

Qualitative responses from this study could be used either to provide additional accessibility features to local outdoor spaces, or to educate individuals about the accessibility features currently in place. Some frequently-requested, low-cost suggestions include adding benches along accessible paths, and installing signage to direct individuals to accessible parking, pathways, and restrooms. In addition to facility accessibility, managers should ensure that staff and volunteers, especially direct service staff, interact with individuals with disabilities in a sensitive and respectful manner. One way to assess facility accessibility is to seek the input of individuals with disabilities in the planning, decision-making, and evaluation of accessible features. Some organizations have an Accessibility Advisory Board comprised of organization employees as well as community volunteers and interested stakeholders, both with and without disabilities. Finally, to ensure that individuals with disabilities are valued and feel welcome, managers should take a close look at their marketing and communication materials (e.g. website, program booklet, etc) to see how individuals with disabilities are represented, if at all.

Results of this secondary data analysis provide a better understanding of the perceptions Pennsylvanians with disabilities have regarding future outdoor recreation participation, benefits of participation, and accommodations to facilitate participation. This information and subsequent practical implications can be used to better serve individuals with disabilities in outdoor recreation areas.

4.0 Citations

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Table 1. Sample Descriptive Statistics for all Survey Respondents

Age	Gender	Marital Status	Race
M=57 years old	Male=63% (n=1653) Female=31% (n=807)	Married=65% (n=1683) Divorced/Separated=11% (n=275) Never Married=9% (n=221) Widowed=7% (n=171)	Caucasian=88% (n=2303) African American=3% (n=80) American Indian/Alaskan Native=2% (n=39) Asian=1% (n=20) Pacific Islander =0.2% (n=5) Other=1% (n=37)

Note. Sample n=2,606. M=Mean.

Table 2. Sample Descriptive Statistics for Subcategories of Disabilities

	Respondent Disability (n=317)	Disability in Household (n=180)	Respondent and Household Disability (n=59)	No Disability (n=1,850)
Age	M=64 (SD=14)	M=59 (SD=14)	M=70 (SD=13)	M=53 (SD=14)
Gender	Males=58% (n=184)	Males=69% (n=123)	Males=73% (n=43)	Males=69% (n=1260)
Marital Status	Married=46% (n=145)	Married=83% (n=150)	Married=75% (n=44)	Married=70% (n=1294)
	Divorced =19% (n=61)	Divorced=6% (n=11)	Divorced=10% (n=6)	Divorced=10% (n=192)
	Widowed=19% (n=59)	Widowed=2% (n=4)	Widowed=7% (n=4)	Widowed=5% (n=93)
Race	Caucasian=91% (n=289)	Caucasian=92% (n=165)	Caucasian=92% (n=54)	Caucasian=94% (n=1,732)
	African American=7% (n=23)	African American=3% (n=6)	African American=7% (n=4)	African American=3% (n=46)
	American Indian/Alaskan Native=1% (n=4)	American Indian/Alaskan Native=3% (n=6)	American Indian/Alaskan Native=2% (n=1)	American Indian/Alaskan Native=2% (n=28)
	Asian=0.3% (n=1)	Asian=2% (n=3)	Pacific Islander=2% (n=1)	Asian=1% (n=16)
	Pacific Islander=0.3% (n=1)			Pacific Islander=0.2% (n=3)

Note. Sample n=2,406. M=Mean, SD=Standard deviation.

Table 3. Perceived Benefits of Outdoor Recreation

Benefit	Respondent Disability	Disability in Household	Respondent and Household Disability	No Disability	F	Cohen's d
Reduced Stress	4.22 _a (.07)	4.25 _a (.08)	3.71 _b (.17)	4.34 _a (.02)	(3,2016)=5.434*	.01
Improved Level of Physical Fitness	3.86 _a (.07)	4.12 _b (.08)	3.64 _a (.17)	4.21 _b (.02)	(3,2013)=10.76*	.02
Improved Physical Health	3.89 _a (.07)	4.12 _{bc} (.08)	3.79 _{ac} (.16)	4.24 _b (.02)	(3,2011)=10.63*	.02
Improved Mental Health	4.08 _a (.07)	4.15 _{ac} (.08)	3.89 _a (.16)	4.27 _{bc} (.02)	(3,1976)=4.29*	.01
Enhanced Family Interactions	3.62 _a (.10)	3.86 _a (.11)	3.71 _a (.22)	3.90 _b (.03)	(3,1817)=2.75*	.01

Note. Response scale 1 (not at all) to 5 (a great deal).

Estimated marginal means are given, standard errors are given in parentheses.

*sig at .05.

Means with no subscript in common differ at $p < .05$ using Bonferroni post hoc comparisons.

Table 4. Constraints to Outdoor Recreation Participation

Constraint	Respondent Disability	Disability in Household	Respondent and Household Disability	No Disability
Work & School	12%	30%	10%	32%
Time	7%	15%	6%	21%
Health	56%	30%	71%	17%
Weather	6%	6%	0%	10%
Financial	8%	6%	6%	6%
Social	1%	3%	2%	4%
Facilities	3%	4%	0%	3%
Location/Distance	4%	3%	0%	3%
Intrapersonal	1%	3%	0%	2%
Safety	1%	0%	0%	0%

Note. Bolded percentages are the highest within each constraint.

n= 2142, $X^2(30)=574.95$ $p < .01$, Cramer's $V=.30$

Table 5. Outdoor Recreation Accessibility

	Respondent Disability	Disability in Household	Respondent and Household Disability	No Disability	<i>F</i>
Accessibility of nearby recreation areas.	3.08 _a (.09)	3.37 _b (.11)	2.88 _a (.21)	3.53 _b (.04)	(3,1516) = 10.41***

Note. Response scale 1 (strongly disagree) to 5 (strongly agree).

Estimated marginal means are given, standard errors are given in parentheses.

Partial η^2 = .02.

Means with no subscript in common differ at $p < .05$ using Bonferroni post hoc comparisons.