HHS Public Access

Author manuscript

Res Q Exerc Sport. Author manuscript; available in PMC 2017 June 01.

Published in final edited form as:

Res Q Exerc Sport. 2016 June ; 87(2): 165–173. doi:10.1080/02701367.2016.1143909.

Use of Dog Parks and the Contribution to Physical Activity for Their Owners

Kelly R. Evenson, Ph.D., MS,
University of NC – Chapel Hill, Chapel Hill, North Carolina, USA

Elizabeth Shay, Ph.D.,
Department of Geography and Planning, Appalachian State University, Boone, North Carolina, USA

Stephanie Williamson, BA, and
RAND Corporation, Santa Monica, CA, USA

Deborah A. Cohen, MD, MPH
RAND Corporation, Santa Monica, CA, USA

Abstract

Purpose—This study described the use of dog parks in several diverse locations and explored the contribution dog parks made to physical activity of the dog owners.

Method—The Systematic Observation of Play and Recreation in Communities (SOPARC) tool was used to count the number and characteristics of people using parks. Observations were conducted four times/day, four days/week during one week in six urban/suburban parks during different seasons. Collection sites included three dog parks in Chapel Hill/Durham, NC; two dog parks in Los Angeles, CA; and one dog park in Philadelphia, PA. Interviews at the NC and PA parks were conducted among 604 adults.

Results—We counted 2,124 people (11.9%) in the dog park area compared to 15,672 people in the remaining park areas. Based on observations, dog park visitors were more likely to be female and White or Other race/ethnicity compared to Hispanics, and less likely to be children or engage in walking or vigorous activity. Park interviews revealed that compared to those who reported other park activities, reporting walking/watching a dog at the park was more common among those who visited the park more frequently (>=1 time/week), stayed at the park for shorter time (<=1 hour), or visited the park alone.

Conclusion—While dog parks may be an important destination for dog owners and contribute to physical activity, the contribution of the dog parks to participant's moderate-to-vigorous physical activity was limited.

Keywords

environment; observation; SOPARC; walking

Address for Correspondence and Proofs: Kelly R. Evenson, 137 East Franklin Street, Suite 306, University of NC, Gillings School of Global Public Health, Department of Epidemiology, Chapel Hill, NC 27514, kelly_evenson@unc.edu; fax: 919-966-9800.

In 2011, approximately 37% of United States (US) households reported owning at least one dog, accounting for almost 70 million dogs (American Veterinary Medical Foundation, 2012). An abundant literature reinforces the positive effects of pet ownership, including lower mortality, blood pressure, cholesterol, mental stress, depression, and loneliness, higher self-esteem, and higher survival rates after a myocardial infarction (Anderson, Reid, & Jennings, 1992; Cutt, Giles-Corti, Knuiman, & Burke, 2007; Friedmann, Katcher, Lynch, & Thomas, 1980; Friedmann & Thomas, 1995; Simons, McCallum, & Simons, 1997). In older adults, owning a dog can promote a social support network among dog owners and lead to improved health and lower use of social services for some individuals (Knight & Edwards, 2008). Among children, dog walking can promote both physical activity and independent mobility (Christian et al., 2014; Richards, Troped, & Lim, 2014).

Walking is a popular activity in which most adults can participate, and owning a dog offers a regular opportunity and reason to be active. A number of cross-sectional studies conducted in Australia, Canada, and the US concur that dog or pet owners report significantly more physical activity, walking, or exercise than non-dog or non-pet owners (Christian et al., 2013). An Australian study found that dog acquisition can lead to an increase in walking (Cutt, Knuiman, & Giles-Corti, 2008). Walking with a dog can confer other benefits between neighbors and within neighborhoods. Walking a dog encourages conversation with others (H. Cutt et al., 2007) and social networking (Yosiaki, Takeuchi, Ohta, Tajima, & Suzuki, 1999), and may promote higher social capital (Wood, Giles-Corti, & Bulsara, 2005). At the same time, however, it is important to recognize the costs and time commitment incurred with dog ownership.

With the high proportion of households owning dogs, dog walking is a physical activity strategy with wide reach and large potential to increase physical activity (Toohey & Rock, 2011). A review indicated that those who owned dogs were more likley to engage in walking compared to those not owning a dog (Christian et al., 2013). However, data from the American Time Use Survey indicate that on any given day, only 2.5% of Americans walked at least one dog for an average of 30 minutes/day (Tudor-Locke & Ham, 2008). Thus, a significant proportion of owners and their dogs are missing an opportunity to benefit from daily walking. Transitioning those who are most sedentary to some physical activity would result in improvements to several chronic disease outcomes at a population level (Bauman, Christian, Thorpe Jr., & Macniven, 2011). Higher self-efficacy for dog walking, higher levels of dog attachment and obligation, perception that dog walking promotes social engagement, and perceiving dog walking as a deterrent to crime have all shown positive associations with dog walking, while neighborhood environment may be an important moderator (Richards, McDonough, Edwards, Lyle, & Troped, 2013). Moreover, even when people choose not to invest in their own health, they may invest in the health of their dogs by walking them (Westgarth, Christley, and Christian, 2014).

Living near a dog park is associated with a higher frequency of dog walking (Cutt, Giles-Corti, & Knuiman, 2010; McCormack, Rock, Sandalack, & Uribe, 2011). Dog parks are defined as designated off-leash areas that offer a safe and controlled environment for dogs and their owners (Lee, Shepley, & Huang, 2009). In suburban and urban areas, dog parks are being created to bring dogs to play, socialize, and be active, with the physical activity

conveying health benefits to the animals. These benefits may also carry over to the owners. Little is known about the characteristics of visitors of dog parks compared to other park visitors, nor is it known how much physical activity visitors to dog parks obtain. Therefore, the aims of this study were to describe the use of dog parks in several diverse US locations and explore the contribution that dog parks made to physical activity of the dog's owner or caretaker (hereafter referred to as the owner).

Method

Data collection was conducted between 2008 and 2010 in three US locations: Los Angeles, California (CA); Chapel Hill / Durham, North Carolina (NC); and Philadelphia, Pennsylvania (PA). The study protocols were reviewed and approved by the Institutional Review Boards at each affiliated institution (CA, NC, PA). Parks were selected based on their classification as a neighborhood park and represented a diversity of users. Parks were geographically diverse and selected to represent a range of income areas (above and below the median poverty level). They were excluded if they were to undergo construction during the study period, or if they were considered too dangerous for project staff. More details are available elsewhere (Cohen et al., 2013; Ward et al., 2014). In two parks in CA, three parks in NC, and one park in PA, the dog parks were part of the larger neighborhood parks, and thus, the focus of this paper.

Park Observations

The Systematic Observation of Play and Recreation in Communities (SOPARC) tool provides observational user data and contextual information about parks (Evenson et al., under review), with evidence for validity and reliability (McKenzie, Cohen, Sehgal, Williamson, & Golinelli, 2006; Cohen et al., 2011). Each park was mapped and divided into observation areas, in order to make scans in specified locations to document how different park areas were used. Separate scans (i.e., an observation sweep moving from left to right) were made for females and males. During a scan for males, we recorded the age group and apparent race/ethnicity of the individuals in the target area, followed by a second scan to determine physical activity of each individual, categorized as sedentary (i.e., lying down, sitting) or standing without moving, walking (casual pace, transferring weight from one foot to another), or vigorous (if walking then faster pace than casual, requires more energy than walking). These two scans were then repeated for females, for a total of four scans of the target area. People were counted only if they were in a specified target area at the time of each scan. The predominant activity type in the target area was also recorded, drawing from a pre-developed list of activities (e.g., basketball, football, dog walking, dog watching).

For each target area, we also recorded whether it was accessible (i.e., not locked). Based upon a study to determine the optimal number of observations for assessing park use (Cohen et al., 2011), we conducted observations four different times each day (these specific times rotated depending on the day) and on two weekdays and both weekend days. If the weather was inclement, we rescheduled park visits to occur during the same time period(s) on the next matching clement day to ensure observations were conducted on the same day of the week.

Investigators and staff from each site underwent a two-day training using the park observation methods (McKenzie, Cohen, Sehgal, Williamson, & Golinelli, 2006; McKenzie & Cohen, 2006). All field staff had to meet specified certification criteria to insure accuracy in data collection. This certification required completion of a complete park assessment in <=1 hour with 85% accuracy and assessment of park target areas with >=10 people with 80% accuracy. Coordinators and lead observers from each of the sites met at a central location for initial training; they, in turn, trained local data collectors.

Park Visitor Interviews

In the NC and PA parks (and not in CA), field staff conducted intercept interviews with adults about behaviors and perceptions related to park use and physical activity after they provided verbal consent to participate. Approximately 150 interviews were conducted at each park, with 50 in each season (spring, summer, fall). Interviews usually lasted <5 minutes. A small incentive was provided at the interview conclusion. Interview questions included items on self-reported age, race/ethnicity, general health, height, and weight. Body mass index (BMI) was calculated by dividing height in squared meters by weight in kilograms. In addition, participants were asked for the nearest cross streets to their home address. The intersection of the cross streets were geocoded using ArcGIS (Esri; Redlands, CA) and Euclidean distance (straight-line distance) from the intersection to the park address was calculated (point-to-point).

Survey participants were asked, “What do you usually do while at this park?” Multiple activities could be provided and we combined “walking with my dog” and “watching my dog” against all other options, which ranged from sedentary behaviors (i.e., sitting in park) to vigorous activities (i.e., basketball, soccer, tennis). Other park-related questions included how often they come to this park, how long they stay, mode of transport to the park, and whether they came to the park with anyone. A prior study indicated the agreement between self-reported park frequency and duration compared to park visits determined using global positioning system (GPS) monitors ranged from 0.40 to 0.53 (Spearman correlation coefficients) (Evenson, Wen, Hillier, & Cohen, 2013). This study also reported test-retest reliability ranging from 69% to 82% agreement for park visit frequency and 64% to 73% for park visit duration.

Statistical Analysis

Using the US 2000 Census, we calculated the population size, percent White, and percent of households in poverty within a 0.5-mile radius of each park using ArcGIS. All further analyses were conducted using SAS (version 9.3; Cary, NC). In order to compare the target areas of the dog park to other park areas from the observational data, imputation was performed to fill in missing observations. Less than 2% of observations were missing, so we consider imputation similar to what others have done (Cohen et al., 2012). We examined the missing observations at each park target area for each of the four observation periods. If the missing observation was in the middle of the day, and the condition of the target area (accessibility and activities) did not change before and after the missing period, the missing observation was imputed by interpolating adjacent observations. In all other cases, the missing observation was imputed by the sample mean at the same period across all days

(weekend and weekdays processed separately). Comparisons were made using unconditional logistic regression, with the outcome comparing dog areas to other areas of the park. Analyses were conducted for 6 parks overall and separately for the two CA parks from the four NC and PA parks, since data collection only occurred in the spring in CA, whereas the other four parks included collection in spring, summer, and fall. The results were similar, so we present the combined analysis of 6 parks only. The models were calculated both unadjusted and adjusted for day of week, season, and park. Since results were similar, we only present adjusted results.

In total 604 park interviews were conducted; we excluded four interviews that were missing answers to the question regarding what they usually did while at the park leaving 600 for analysis. Park interview data were reported overall and comparing park visitors who reported walking or watching a dog to all other activities using a chi-squared test. Cramer's V was calculated for these results to assess the strength of association, with interpretation as follows: <.15 very weak, .15-<.20 weak, .20-<.25 moderate, .25-<.30 moderately strong, .30-<.35 strong, and >=.35 very strong. For variables with three or more levels, when the p value was <.05 and the Cramer's V was >=.20, we conducted posthoc analysis to explore differences between groups by evaluating their standardized residuals (Agresti, 2013).

Results

Description of Parks

The parks' sizes ranged from 4 to 24 acres, with the NC parks having more acres in undeveloped areas (Table 1). The dog park areas ranged from 0.4 to 3.0 acres within these parks. The dog parks typically had separate areas for small and large dogs and were located at the edges of parks or under power lines, areas unsuitable for other park uses. The dog park was the most visited target area in two parks and in the top five target areas for all but one park.

Park Observations

Overall, we counted 2,124 people in the dog park area, compared to 15,672 people in the remaining areas of the parks. The factors associated with dog park visitation were assessed, controlling for day of week, season, and the park under study, but not controlling for other sociodemographic characteristics due to the way SOPARC observations were collected (Table 2). Dog park visitors were more likely to be female and White or Other race/ethnicity compared to Hispanics (Table 2). Dog park visitors were also more likely to be adults compared to other age groups. Overall, the predominant activity of the owners in the dog park area was sedentary behavior or standing without moving (78.9%), followed by walking (20.0%), with very few engaging in vigorous activity (1.2%). This is in contrast to visitors in other areas of the park, where more children and teenagers were located: sedentary behavior or standing without moving (53.2%), followed by walking (27.0%), and vigorous activity (19.9%). On weekdays, dog park areas were most often visited in the evening, but on weekends they were used throughout the day with no time period dominating (data not shown).

Park Visitor Interviews

The sample that completed the park interviews were 56.3% female, almost half between 18 and 35 years of age (48.2%), and 73.2% non-Hispanic White (Table 3). The median age was 36 years (interquartile range 29 to 45) and the median BMI was 24.3 kg/m^2 (interquartile range 21.8 to 26.7). For the activity usually done while at the park, 27.5% reported walking or watching a dog. Compared to those who reported other park activities, reporting walking/watching the dog was more common among non-Hispanic white adults (Cramer's V: very weak), those who were obese (very weak), those who visited the park once per week or more (moderate), those who stayed <=1 hour at the park (moderate), those who visited the park alone (very strong), and among those interviewed at NC park 2 (strong). For significant variables with >=3 levels and a Cramer's V >=0.20 (indicating at least a moderate strength of association), we conducted posthoc analysis to explore differences between groups. There were more participants at the park walking/watching the dog who visited the park >=1 times/week and fewer of those participants that visited daily than expected by chance. There were also more participants at the park walking/watching the dog who visited the park for short time periods (<=1 hour) and fewer of those participants that visited for longer times (>=2 hours) than expected by chance. The residual analysis also revealed that there were more participants at the park walking/watching the dog at NC park 2, but fewer at NC park 1 and NC park 3, than expected by chance.

Overall, 88.2% of the sample reported cross streets nearest to their home address that were successfully geocoded. The mean Euclidean distance from home to the park was 2.5 miles (standard deviation (SD) 3.1; median 1.4). For those who reported walking/watching a dog as their most common park activity, the mean Euclidean distance from home to the park was 2.2 miles (SD 2.7; median 1.3), while those who reported other park activities had a distance of 2.6 miles (SD 3.1; median 1.5). When distance from home to the park was categorized, it was not associated with walking/watching the dog (Table 3).

Most participants drove to the park (n=419, 70.4%), followed by walking (n=156, 26.2%), bicycling (n=12, 2.0%), public transportation (n=6, 1.0%), and other (n=2, 0.3%). Those who walked/watched the dog at the park reported only two modes to reach the park beforehand: walking (n=39, 34.5%) or driving (n=74, 65.5%). In contrast, those who utilized the park for other activities reported driving (n=345, 71.6%), walking (n=117, 24.3%), bicycling (n=12, 2.5%), public transportation (n=6, 1.2%), or other (n=2, 0.4%). Among 156 participants who walked to the park, the mean distance walked from home was 0.56 miles (SD 0.69; median 0.30), with a maximum of 4.2 miles. The distance walked to the park was similar between those who walked/watched a dog (mean 0.39 miles, SD 0.37, median 0.28) and those who utilized the park for other activities (mean 0.63 miles, SD 0.77, median 0.33).

Discussion

In this study, the park observations revealed that dog park visitors were more likely to be female, White, and adult, and more often engage in sedentary behavior or standing without moving compared to visitors in other areas of the park where more children and teenagers were located. The high percentage of dog park visitors observed as being sedentary/standing without moving is supported in two other studies using similar observational methods.

Studying 10 parks in Tampa, Florida and 18 parks in Chicago, Illinois, dog play areas, picnic shelters, and fishing piers were associated with higher levels of sedentary behavior than other park areas (Floyd, Spengler, Maddock, Gobster, & Suau, 2008). In Texas and Florida, behavioral mapping also revealed sedentary behavior as the predominant activity among dog park visitors (Lee et al., 2009).

Among adults surveyed at the parks, around one-quarter indicated they usually walked or watched their dog as the most common activity they did while at the park where they were interviewed. Their survey responses indicated that park visitors that walked or watched their dog visited the parks more often than parks visitors engaged in other activities, but stayed for a shorter duration. The more frequent but shorter length of stay at the dog park is supported from another study conducted in Bucharest, Romania (Ioja, Rozylowicz, Patroescu, Nita, & Vanau, 2011). It seems reasonable to expect that taking a dog to the park might limit the time spent at the park and the choices of what to do at the park, since some parks have areas that are off limits to dogs. A Canadian study supported the finding of regular use of dog parks, even during inclement weather (Temple, Rhodes, & Higgins, 2011).

Physical and social environmental changes may be needed to promote more physical activity of dog owners traveling both to and from, as well as activity within the dog park. The physical environment for some of the parks included trees that provided shade for owners to walk under while the dogs played, and shelters for protection of owners during inclement weather. These physical environmental characteristics are important to consider when designing dog parks, since owners may use the space less often if too secluded (safety) or too exposed (hot and cold). The six dog park areas under study tended to be placed in areas apart from the main activities of the park or in land not suitable for other activities, such as under power lines. In part, the seclusion of the dog park may be necessary to separate dogs from other park visitors. With the frequent use of the dog park area, consideration should be given to the surface, as degradation of grass could easily occur. The structure of the dog park space could make it more conducive for the dog owners to be more active. For example, inclusion of an agility course would encourage owners to walk with their dog as they navigate the course. Also, at times the size of the fenced dog area limited walking by the owners, as they needed to stay clear of the running dogs. Other considerations as to how a dog park is physically structured can be found elsewhere (Lee et al., 2009).

Dogs provide compelling reasons and reminders to regularly walk once in the habit, and dog parks provide a reasonable destination to visit. Living near a dog park has been associated with a higher frequency of dog walking (Cutt et al., 2010; McCormack et al., 2011) and dog owners may be more likely to walk to parks compared to other types of destinations (Tilt, 2010). However, our survey indicated that most dog owners drove with their dog to visit the dog park rather than walking. Among those who walked their dog inside the park, approximately one-third also walked to the park. Those individuals and their dogs gained additional benefits of the physical activity, with the average trip distance of 0.39 miles, or just under 1 mile round trip. This walking distance to the park was similar, whether or not the person was accompanied by a dog. Our findings indicate that routes to and from dog parks, and parks in general, should be assessed as to its potential as a destination for walking

or bicycling. This might increase the number of visits to the dog park that use active transportation, thus increasing the physical activity of both the owner and their dog.

For dog parks, consideration of the social environment is also important. While we did not collect information on this, we observed a social aspect to the dog park areas. Some dog owners came regularly and talked with others who were visiting the dog area. This social aspect is supported by studies that found that dog parks provided opportunities to meet neighbors and build a sense of community (Lee et al., 2009; Westgarth, Christley, & Christian, 2014). In contrast, we also observed regular visitors who would visit, sit at a bench or picnic table, and read while their dog played, perhaps not necessarily seeking social contact during the park visit.

Limitations

This study had several limitations. The sample of parks, while diverse, was a convenience sample and may not represent other geographic areas. In particular, we assessed dog park areas within larger parks. It is not known how the results might be different for stand-alone dog parks. With a larger park sample size, features of dog parks could be assessed to explore how they interact with both human- and dog-related physical activity. We conducted park observations only during clement weather, rescheduled observations if it rained, and did not made adjustments for diminished park use associated with poor weather conditions. An inherent limitation of the SOPARC method of scanning is that characteristics of users (age, gender, race/ethnicity) could not be directly linked to their physical activity. Thus, the observational data could not be stratified by these factors or further adjusted for in the statistical models shown in Table 2. In addition, we collected only three levels of physical activity while scanning (sedentary/standing without moving, walking, vigorous). Thus, sedentary and standing motionless could not be separated.

The park visitor interviews were conducted among adults willing to complete a brief interview while at the park. While refusals were rare, it is not known how representative participants were of all park visitors. We also do not know whether those with dogs were the dog owners or other caretakers. Finally, dog parks offer many other benefits, which were not the focus of this study.

Conclusions

Based on the diverse parks studied, visitors to dog parks were mostly sedentary or standing without moving and the dog park areas were observed with less physical activity than other areas within the park where more children and teenagers were located. Improving physical activity through dog walking is a promising public health strategy to improve health that could feasibly reach those who are sedentary (Richards, Troped, & Lim, 2014). Dog parks offer a destination for owners to go with their dogs. Improving the routes to and from dog parks, such that owners can safely walk or jog with their dogs to and from the park, can promote physical activity during the experience. Physical and social environmental changes may also be needed to further promote physical activity of owners within dog park areas.

Acknowledgments

Funding: This study was funded by the National Institutes of Health (NIH), National Heart Lung and Blood Institute #R01HL092569 and #R01HL083869. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH. The authors thank Fang Wen (University of North Carolina – Chapel Hill), the investigators, study coordinators, and staff for their help with this study.

References

Agresti, A. Categorical data analysis. 3. Hoboken NJ: Wiley; 2013.

American Veterinary Medical Foundation. US pet ownership and demographics sourcebook. 2012. Retrieved from http://www.avma.org

Anderson W, Reid C, Jennings G. Pet ownership and risk factors for cardiovascular disease. Medical Journal of Australia. 1992; 157:298–301. [PubMed: 1435469]

Bauman, A.; Christian, H.; Thorpe, R., Jr; Macniven, R. International perspectives on the epidemiology of dog walking. In: Johnson, R.; Beck, A.; McCune, S., editors. The health benefits of dog walking for people and pets: Evidence and case studies. West Lafayette, Indiana: Purdue University Press; 2011. p. 25-50.

Christian H, Trapp G, Villanueva K, Zubrick SR, Koekemoer R, Giles-Corti B. Dog walking is associated with more outdoor play and independent mobility for children. Preventive Medicine. 2014; 67:259–263. [PubMed: 25117524]

Christian H, Westgarth C, Bauman A, Richards E, Rhodes R, Evenson K, Mayer J, Thorpe R Jr. Dog ownership and physical activity: A review of the evidence. Journal of Physical Activity and Health. 2013; 10(5):750–759. [PubMed: 23006510]

Cohen DA, Han B, Derose KP, Williamson S, Marsh T, Rudick J, McKenzie TL. Neighborhood poverty, park use, and park-based physical activity in a Southern California city. Social Science and Medicine. 2012; 75(12):2317–2325. [PubMed: 23010338]

Cohen DA, Lapham S, Evenson KR, Williamson S, Golinelli D, Ward P, Hillier A, McKenzie TL. Use of neighbourhood parks: does socio-economic status matter? A four-city study. Public Health. 2013; 127(4):325–332. [PubMed: 23515008]

Cohen D, Setodji C, Evenson K, Ward P, Lapham S, Hillier A, McKenzie T. How much observation is enough? Refining the administration of SOPARC. Journal of Physical Activity and Health. 2011; 8(6):1117–1123. [PubMed: 22039130]

Cutt H, Giles-Corti B, Knuiman M, Burke V. Dog ownership, health and physical activity: A critical review of the literature. Health and Place. 2007; 13(1):261–272. [PubMed: 16503185]

Cutt H, Giles-Corti B, Knuiman M. "I'm Just a 'Walking the Dog" correlates of regular dog walking. Family and Community Health. 2010; 33(1):44–52. [PubMed: 20010004]

Cutt H, Knuiman MW, Giles-Corti B. Does getting a dog increase recreational walking? International Journal of Behavioral Nutrition and Physical Activity. 2008; 5(17):1–10. [PubMed: 18182102]

Evenson K, Jones S, Holliday K, Cohen D, McKenzie T. Park use and physical activity: A review from studies using SOPARC (System for Observing Play and Recreation in Communities). Under review – revise/resubmit.

Evenson KR, Wen F, Hillier A, Cohen DA. Assessing the contribution of parks to physical activity using global positioning system and accelerometry. Medicine and Science in Sports and Exercise. 2013; 45(10):1981–1987. [PubMed: 23531716]

Floyd MF, Spengler JO, Maddock JE, Gobster PH, Suau LJ. Park-based physical activity in diverse communities of two U.S. cities. An observational study. American Journal of Preventive Medicine. 2008; 34(4):299–305. [PubMed: 18374243]

Friedmann E, Katcher A, Lynch J, Thomas S. Animal companions and one-year survival of patients after discharge from a coronary care unit. Public Health Reports. 1980; 95(4):307–312. [PubMed: 6999524]

Friedmann E, Thomas S. Pet ownership, social support, and one-year survival after acute myocardial infarction in the Cardiac Arrhythmia Suppression Trial (CAST). American Journal of Cardiology. 1995; 76:1213–1217. [PubMed: 7502998]

Ioja C, Rozylowicz L, Patroescu M, Nita M, Vanau G. Dog walkers' vs. other park visitors' perceptions: The importance of planning sustainable urban parks in Bucharest, Romania. Landscape and Urban Planning. 2011; 103(1):74–82.

Knight S, Edwards V. In the company of wolves: the physical, social, and psychological benefits of dog ownership. Journal of Aging and Health. 2008; 20(4):437–455. [PubMed: 18448686]

Lee H, Shepley M, Huang CM. Evaluation of off-leash dog parks in Texas and Florida: A study of use patterns, user satisfaction, and perception. Landscape and Urban Planning. 2009; 92:314–324.

McCormack GR, Rock M, Sandalack B, Uribe FA. Access to off-leash parks, street pattern and dog walking among adults. Public Health. 2011; 125(8):540–546. [PubMed: 21803384]

McKenzie, T.; Cohen, D. [Accessed July 17, 2015] Active Living Research: Tools and Measures. SOPARC: System for Observing Play and Recreation in Communities. 2006. at http://activelivingresearch.org/soparc-system-observing-play-and-recreation-communities

McKenzie T, Cohen D, Sehgal A, Williamson S, Golinelli D. System for Observing Play and Recreation in Communities (SOPARC): Reliability and feasibility measures. Journal of Physical Activity and Health. 2006; 3(Suppl 1):S208–S222. [PubMed: 20976027]

Richards E, McDonough M, Edwards N, Lyle R, Troped P. Psychosocial and environmental factors associated with dog walking. International Journal of Health Promotion and Education. 2013; 51(4):198–211.

Richards E, Troped P, Lim E. Assessing the intensity of dog walking and impact on overall physical activity: a pilot study using accelerometry. Open Journal of Preventive Medicine. 2014; 4(7):523–528.

Simons L, McCallum J, Simons J. Letter to the editor. Medical Journal of Australia. 1997; 167:231–232. [PubMed: 9293277]

Temple V, Rhodes R, Higgins J. Unleashing physical activity: An observational study of park use, dog walking, and physical activity. Journal of Physical Activity and Health. 2011; 8(6):766–774. [PubMed: 21832291]

Tilt JH. Walking trips to parks: exploring demographic, environmental factors, and preferences for adults with children in the household. Preventive Medicine. 2010; 50(Suppl 1):S69–S73. [PubMed: 19744514]

Toohey AM, Rock MJ. Unleashing their potential: a critical realist scoping review of the influence of dogs on physical activity for dog-owners and non-owners. International Journal of Behavioral Nutrition and Physical Activity. 2011; 8(46):1–9. [PubMed: 21194492]

Tudor-Locke C, Ham SA. Walking behaviors reported in the American Time Use Survey 2003–2005. Journal of Physical Activity and Health. 2008; 5(5):633–647. [PubMed: 18820341]

Ward P, McKenzie TL, Cohen D, Evenson KR, Golinelli D, Hillier A, Lapham S, Williamson S. Physical activity surveillance in parks using direct observation. Preventing Chronic Disease. 2014; 11:130147. DOI: http://dx.doi.org/10.5888/pcd11.130147. [PubMed: 24384304]

Westgarth C, Christley RM, Christian HE. How might we increase physical activity through dog walking?: A comprehensive review of dog walking correlates. International Journal of Behavioral Nutrition and Physical Activity. 2014; 11(83):1–14. [PubMed: 24405936]

Wood L, Giles-Corti B, Bulsara M. The pet connection: pets as a conduit for social capital? Social Science and Medicine. 2005; 61(6):1159–1173. [PubMed: 15970228]

Yosiaki S, Takeuchi K, Ohta A, Tajima K, Suzuki S. Relationship between regular exercise and lifestyle, social network, education and subjective symptoms in Japanese middle aged and elderly residents. Japanese Journal of Public Health. 1999; 46:624–637. [PubMed: 10496031]

What Does This Article Add?

This study collected park observations and found that dog park visitors more often engaged in sedentary behavior or standing without moving than visitors in other areas of the park where more children and teenagers were located. This study also collected interviews of park visitors and found that compared to those who reported other park activities, reporting walking/watching the dog was more common among those who visited the park more often, those who stayed at the park for a shorter time, and those who visited the park alone. Ultimately, these findings can be used to inform park development, programming, and intervention development for dog owners and dog park areas.

Table 1

Descriptions of parks that included dog areas

	PA Park 1	NC Park 1	NC Park 2	NC Park 3	CA Park 1	CA Park 2
Location	Philadelphia, PA	Chapel Hill, NC	Durham, NC	Chapel Hill, NC	Los Angeles, CA	Los Angeles, CA
Acreage of entire park	7	17**	11**	24**	5	4
Acreage of dog park	0.4	0.7	1.7	1.5	1.5	1.3
Seasons observed	Spring 2009, Summer 2008, Fall 2008	Spring 2010, Summer 2010, Fall 2009	Spring 2009, Summer 2008, Fall 2008	Spring 2010, Summer 2010, Fall 2009	Spring 2008	Spring 2008
Most frequently used target areas*						
1	Play areas	Soccer fields	Dog Park	Soccer fields	Dog Park	Gym
2	Lawn	Pool	Picnic areas	Play areas	Baseball Fields	Lawn
3	Sidwalks	Play area	Play areas	Picnic Areas	Gym	Dog Park
4	Dog Park	Sidewalks	Soccer fields	Sidewalks	Basketball	Play areas
5	Baseball fields	Baseball fields	Baseball fields	Dog park	Play Area	Basketball
Description of dog park	located at edge of large park, between park and community garden	located at the corner of the park away from most activities	developed on land under power lines	located across the street from the remainder of the park	near power lines, about 1/4 mile from the recreation center	adjacent to a large reservoir, near power lines
Areas for dogs	2 fenced areas; 1 small dog, 1 large dog	2 fenced areas: 1 small dog, 1 large dog	4 fenced areas: 1 small dog, 1 large dog, 1 program area, and 1 open area	2 fenced areas: 1 small dog, 1 large dog	separate areas for small and large dogs	separate areas for small and large dogs
From US Census 2000:						
Population within 0.5 mile radius around park	18,209	5451	5,014	4433	15,288	9419
Percent White population (0.5 mile radius)	65.4	73.9	50.1	78.3	85.1	55.6
Percent households in poverty (0.5 mile radius)	16.8	7.6	7.0	16.5	7.3	13.3

*Calculated from the sum of all seasons for NC and PA parks

**NC park acreage was based only on target areas.

Table 2

Comparing target areas encompassing dog park areas to other target areas without dog park areas in six parks using SOPARC observations

	Overall (n=17,796)	% Dog Area (n=2,124)	% Other Area (n=15,672)	Adjusted* Odds Ratio Comparing Dog Area vs. Other Area (95% Confidence Interval)
Gender				
Female	48.4	58.5	47.0	1.59 (1.45, 1.75)
Male (referent)	51.6	41.5	53.0	1.00
Age Groups				
Older adult	3.3	4.9	3.1	13.40 (9.73, 18.44)
Adult	59.1	90.2	54.9	16.31 (12.88, 20.67)
Teenagers	5.7	1.5	6.3	2.49 (1.63, 3.80)
Children (referent)	31.9	3.5	35.7	1.00
Race/ethnicity				
African American	9.2	3.1	10.0	1.01 (0.71, 1.43)
White	69.2	90.1	66.4	6.08 (4.74, 7.79)
Other	9.7	3.5	10.6	2.17 (1.55, 3.05)
Hispanic (referent)	11.9	3.3	13.0	1.00
Physical activity				
Vigorous	17.6	1.2	19.9	0.05 (0.03, 0.07)
Walking	26.1	20.0	27.0	0.53 (0.47, 0.60)
Sedentary/standing without moving (referent)	56.3	78.9	53.2	1.00

*Adjusted models control for the following variables: day of week (weekend, weekday), season (spring, summer, fall), and park. Adjusted models do not control for other variables in the table, since linkage to an individual is not possible due to the way SOPARC scans were conducted.

Table 3

Description of sample participating in park interviews and responses by whether or not they used the park to walk/watch the dog (among NC and PA parks; n=600)

	Overall		Missing	Walk/ Watch Dog	Other	p value*	Cramer's V
	n	%	n	%	%		
Overall	600	100.0	0	27.5	72.5		
Gender			0			0.86	0.01
Female	338	56.3		55.8	56.6		
Male	262	43.7		44.2	43.5		
Age Group			0			0.31	0.06
18–35	289	48.2		52.1	46.7		
36–59	270	45.0		40.0	46.9		
>=60	41	6.8		7.9	6.4		
Race-ethnicity						0.002	0.13
Non-Hispanic White	439	73.2	0	81.8	69.9		
African American	79	13.2		9.7	14.5		
Hispanic	30	5.0		4.2	5.3		
Other	52	8.7		4.2	10.3		
Health status (compared to fair/poor)						0.89	0.01
Excellent/very good/good	544	91.1	3	90.9	91.2		
Body mass index			56			0.004	0.14
Under or normal weight	318	58.5		60.5	57.7		
Overweight	171	31.4		23.7	34.4		
Obese	55	10.1		15.8	7.9		
How often you come to this park			0				
Daily	97	16.2		27.9	11.7	<0.0001	0.22
A few times a week	206	34.3		37.6	33.1		
Once per week or more	297	49.5		34.6	55.2		
On a typical day when you visit the park, how long do you stay							0.20
<=1 hour	247	41.2	0	53.3	36.6	<0.0001	
>1 hour but <2 hours	241	40.2		39.4	40.6		

	Overall		Missing	Walk/ Watch Dog	Other	p value*	Cramer's V
	n	%	n	%	%		
>=2 hours	111	18.5		7.3	22.8		
Last time you went to the park, how did you get there							0.02
Walked	156	26.2	5	27.4	25.8	0.68	
Accompanied by anyone						<0.0001	0.41
Alone	224	37.5	2	69.9	25.3		
Euclidean distance from home to park			71			0.67	0.07
0–0.25 miles	65	12.3		11.1	12.8		
>0.25–0.50 miles	58	11.0		11.8	10.6		
>0.50–1.0 miles	102	19.3		22.9	17.8		
>1.0–2.0 miles	93	17.6		15.7	18.4		
>2.0 miles	211	39.9		38.6	40.4		
Park			0			<0.0001	0.31
PA park 1	155	25.8		23.6	26.7		
NC park 1	146	24.3		17.0	27.1		
NC park 2	149	24.8		46.1	16.8		
NC park 3	150	25.0		13.3	29.4		

* p value is based on a chi-squared test