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Urban Parks and Psychological Sense of Community

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Abstract

Parks and other urban natural spaces are increasingly becoming recognized as valuable for supporting socially healthier urban communities. Currently, however, there remains a relative shortage of empirical research specifically evaluating the relationship. This study explores psychological sense of community (PSOC) and its relationship to urban parks, using survey data collected in Norfolk, Virginia. Regression, *t*-test, and chi square analyses were used to examine how park use frequency and proximity are related to overall PSOC and its components. Our findings suggest that park use has a relationship to PSOC among respondents in our sample. More significantly for park planners and managers, our results also suggest that the presence of nearby parks, regardless of visitation, also has a positive relationship to PSOC.

Keywords: *psychological sense of community; urban parks; park use; park proximity; park perceptions*

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Research suggests that urban areas suffer from social problems including urban crime and safety issues, decreasing levels of civic engagement and social connectedness (Chavis & Wandersman, 1990; Gospodini, 2002), and lower psychological sense of community (PSOC) (Milgram, 1970; Park, 1967). Currently, nearly 84% of the U.S. population lives in 366 metropolitan areas, with major cities accounting for significant population growth within states, and New York City and Los Angeles' combined citizenry accounting for 10% of the U.S. population (Mackun & Wilson, 2011). Concerned with urban quality of life, researchers and community planners are seeking to create PSOC in urban areas via public spaces such as parks and civic centers that "serve as symbols of civic pride and sense of place which promote the notion of community" (Talen, 1999, p. 1364). Little is known about the relationship between urban parks and their impact on the social health of communities (Glover, Shinew, & Parry, 2005; Stodolska, Shinew, Acevedo, & Izenstark, 2011) and additional research is needed (Baur & Tynon, 2010). The present research explores the role that urban parks play in fostering PSOC in city neighborhoods as well as the relationship between PSOC and urban park use, frequency of use, and three aspects of proximity: adjacent/non-adjacent to a park, walking distance, and perceived distance.

Literature Review

Social Capital and Psychological Sense of Community

Sense of community is a complex idea, but it can be understood through sociological and community psychology theory. Sociologists developed the concept of social capital that provides a social structural understanding of sense of community (Pooley, Cohen, & Pike, 2005). Bourdieu (1986) argues that social capital is the product of relationships. Individuals and groups make explicit efforts at establishing and maintaining productive connections to each other for some desired outcome. Like Bourdieu, Coleman (1988) conceived social capital as a way to generate personal advantage through the mobilization of social network connections based upon trust and reciprocity. According to Putnam (2000), community social capital is created through civic engagement and trust, both of which increase social capital levels through mutually beneficial relationships among community members. Central to the social capital construct is the notion of a structure of relations out of which resources become available directly or indirectly (Carpiano, 2006). Higher levels of social capital would be indicated by stronger sense of community in a neighborhood where residents know their neighbors, trust them, and feel empowered to rely upon each other for practical and emotional support (Carpiano, 2008; Portes & Mooney, 2003; Wilkinson, 2007; Wilson, 1997).

The community psychological perspective on sense of community, first proposed by Sarason (1974), exhibits overlap with the social capital concept, but rather than focusing on the social structural nature of community relationships, focuses instead on individuals' psychological sense of community. McMillan and Chavis (1986) suggested that PSOC primarily relates to feelings of belonging to a group. McMillan and Chavis distinguished between four dimensions of PSOC: (a) *membership*, (b) *influence*, (c) *integration*, and (d) *shared emotional connection*. Membership is a sense of feeling one has as a member of a group. Influence refers to the importance of an individual to the group and the influence the group exerts upon its members. Integration was seen as an expectation that members' needs will be met by the resources provided by the group. Lastly, shared emotional connection was described as a feeling of shared history within a community. Schweitzer and colleagues (Cantillon, Davidson, & Schweitzer, 2003; Crew, Kim, & Schweitzer, 1999; Schweitzer, Kim, & Mackin, 1999) developed a PSOC scale based on McMillan and Chavis (1986). Schweitzer et al. added safety as a component of PSOC. Safety is especially

important to consider in the present context as it is commonly cited as a reason for not using urban parks (Henderson, 2006; Humpel, Owen, & Leslie, 2002; Stodolska et al., 2011).

Proximity's Role in the use of Urban Parks and PSOC

Park proximity[1] is defined as the distance away from a park, and whether or not that distance affects use of or benefits derived from the park (Anderson, Wilhelm Stanis, Schneider, & Leahy, 2008). Conceptualization of park proximity, its operationalization, and its relationship to park use have varied from study to study (Crompton, 2005; Kaczynski & Henderson, 2007; Nicholls & Crompton, 2005; Walker & Crompton, 2012). Urban park professionals have used distance as a proxy for service area proximity, with the operationalization of distance ranging from a quarter of a mile from a park to a half a mile, depending on the size and extent of a park's service area (Lund, 2003; Mutter & Westphal, 1986).

Proximity and distance to urban neighborhood parks is important to consider because these characteristics impact which neighborhoods are receiving benefits from a park. For example, Anderson et al. (2008) found that distance is a factor mitigating the benefits derived from a recreation site. Similarly, Kearney (2006) found that a view of an urban green area from one's home, in addition to visitation, is related to positive feelings about a neighborhood. Thus, there is some indication that parks and other urban green spaces contribute to community quality of life regardless of visitation (Shafer, Lee, & Turner, 2000; Sullivan, Kuo, & DePooter, 2004).

Urban Park Use and PSOC

Research has revealed that use of urban parks provide opportunities for restoration, social integration, and bonding (Harnik, 2006; Peschardt, Schipperijn, & Stigsdotter, 2012; Sugiyama, Francis, Middleton, Owen & Giles-Corti, 2010). Parks are particularly suited to promoting general social health (Kearney, 2006) and facilitating social interaction among neighbors (Peters, Elands, & Buijs, 2010). Urban planners have utilized parks as physical planning units to increase social cohesion and PSOC in neighborhoods (Cochrun, 1994; Jacobs & Appleyard, 1987; Lund, 2003). Kweon, Ellis, Leiva and Rogers (2010) remarked that the mere presence of natural areas has a strong effect on peoples' evaluation and perception of their neighborhood. However, research on the relationship between urban parks and PSOC has had mixed results (Gidlow & Ellis, 2011; Stodolska et al., 2011) and warrants further investigation. The current study used regression analysis to evaluate the relationship between PSOC and its components and park use and park proximity using Schweitzer and colleagues' definition of PSOC (Cantillon, Davidson, & Schweitzer, 2003), and also used t-tests to compare differences between frequent and infrequent park visitors' perceptions of PSOC.

Methods

Targeted Neighborhoods, Participants, and Data Collection

The data were collected in Norfolk, Virginia. Five parks/neighborhoods were chosen according to amenities conducive for social interaction. Neighborhoods were demographically and socioeconomically diverse. Using Lund's (2003) suggestion, selected blocks were within one half mile radius of each park because of its acceptance in the planning literature as a comfortable walking distance. The surveys and interviews were administered door to door between the fall

[1]The history of the concept of proximity has been noted elsewhere (Walker & Crompton, 2012), and it is our intent to be illustrative of the history and development, rather than exhaustive.

of 2004 and 2006 to residents over 18 years old, who had lived in each neighborhood for at least one month. Excluding vacant homes, houses in the service areas totaled 420 on 27 blocks. A total of 119 usable surveys were collected (28.3% response rate).

Instrumentation and Measurement

Interviews lasted 20 to 45 minutes. A total of 20 items were used to measure four dimensions of PSOC (Table 1). Answers were given on a 5-point scale, ranging from 1 (*strongly disagree* or *definitely not true*) to 5 (*strongly agree* or *definitely true*). Frequency of park use (*parkuse*) was coded as 0= never/hardly ever, 1= monthly, 2= weekly, 3= several times per week, and 4= just about daily. Proximity to the park was measured by asking the approximate time, in minutes, it takes to walk to the park (*walkpark*), and the perception of whether the park was too far (*toofar*), using the 5-point agreement scale noted earlier. Researchers recorded whether or not there was a physical barrier (e.g., major thoroughfare) separating neighborhoods from a park. The barrier demarcated a neighborhood's proximity as adjacent or non-adjacent to an urban park.

Results

Descriptive Statistics

With the convergence of the scree plot and Kaiser's criterion, four factors were retained in the final analysis, explaining 69.7% of the variance. Table 1 shows the factor loadings and factors after rotation. The items that cluster on the same factors suggest that factor 1 represents emotional connection (EMCN, $\alpha = .93$), factor 2 is integration or met needs (MTND, $\alpha = .91$), factor 3 is block membership (MSHP, $\alpha = .86$) and factor 4 is safety-related block issues (SFTY, $\alpha = .74$).

Demographic characteristics. Out of 119 respondents surveyed, 66.4% were female. Respondents' ages ranged from 16 to 89 ($M = 51.8$). The racial/ethnic background of the respondents was: White (74.0%), Black (19.3%), Latino (0.9%), and Native Americans (1.8%). Additionally, 55.1% considered the quality of life in their neighborhood as high and only 3.4% as low. On average, residents lived on their block 16.6 years, with a range from three months to 64 years.

Use and proximity of urban parks. The frequency of park use of respondents ranged from almost never to daily, with an average value of 0.93, which approximates a monthly use of the neighborhood park. Over half (53.8%) reported never/almost never using their neighborhood parks, whereas 16.8% used parks monthly, 12.4% used parks weekly, 8.8% several times per week, and 6.2% used parks daily. Self-reported walk time to the neighborhood park ranged between 1 and 45 minutes with an average walking time of 7.5 minutes. Approximately 32% reported a walking time of 5 minutes or less to the nearest park.

Regression Analyses

Multiple regression analyses were used to test if *parkuse*, *walkpark*, and *toofar* significantly predicted participants' ratings of PSOC and its dimensions: EMCN, MSHP, and SFTY.[2] The results of the regression for PSOC (R^2=.38, $F(3,96)$=11.28, p<.0001) indicated that *walkpark* (β = -.30, p<.001) and *toofar* (β = -.34, p<.0001) significantly predicted PSOC, while *parkuse* (β = .09, p=.333) did not significantly impact overall PSOC. The results of the regression for EMCN (R^2=.37, $F(3,96)$=18.99, p<.0001) indicated that *toofar* (β = -.56, p<.0001) significantly predicted EMCN, while *walkpark* (β = -.15, p=.078) and *parkuse* (β = .04, p=.648) did not significantly impact EMCN. Results of the regression for MSHP (R^2=.12, $F(3,96)$=4.49, p=.005) indicated

[2]Regression analyses for the MTND dimension of PSOC are not included as none of the independent variables were significant predictors of MTND.

Table 1

Four factor Psychological Sense of Community (PSOC) exploratory factor analysis, Maximum Likelihood extraction, Promax Rotation with 25 max iterations (N=119)

				Factor Loadings			
Items	*M*	*SD*	h^2	EMCN	MTND	MSHP	SFTY
Future-residents care about neighborhood's future	3.28	1.47	0.83	**0.914**	-0.221	0.127	0.116
Help-when problems, it's easy to get help from neighbors	3.12	1.14	0.85	**0.888**	0.218	-0.235	-0.034
Trust-people in neighborhood trust each other	3.16	1.29	0.69	**0.838**	-0.048	0.042	-0.133
Isolated- people in neighborhood do not feel isolated	3.15	1.29	0.69	**0.835**	-0.065	0.015	0.040
Move-I would not move from this neighborhood	3.26	1.42	0.70	**0.819**	0.092	0.057	-0.090
Watchout-people in neighborhood watch out for each other	3.94	0.95	0.69	-0.043	**0.735**	-0.020	0.185
Belong-people in neighborhood feel they belong here	3.95	0.81	0.43	-0.049	**0.729**	0.037	-0.230
Giveride-people in neighborhood give rides to each other if needed	3.86	0.76	0.57	0.113	**0.698**	-0.229	0.259
Connect-people in neighborhood feel connected to each other	3.33	0.91	0.57	-0.047	**0.660**	0.204	-0.102
Community-people in neighborhood think themselves as community	3.72	0.97	0.78	0.075	**0.579**	0.255	0.152
Know-people in this neighborhood know each other	3.78	0.92	0.56	-0.099	**0.562**	0.327	-0.272
Talk- people in neighborhood talk to each other about community	3.64	0.94	0.61	0.096	**0.535**	0.292	-0.007
Socialize-people in neighborhood socialize with each other	3.60	0.98	0.67	-0.075	0.060	**0.783**	-0.015
Socact-people participate in social activities together	3.28	1.23	0.72	0.070	0.140	**0.775**	-0.089
Comimprv-neighbors take part in community improvement	3.39	1.07	0.63	0.091	-0.019	**0.687**	0.200
Improve-neighbors help to improve the neighborhood	3.74	1.18	0.50	-0.053	0.051	**0.565**	0.194
Crimact-criminal activity in neighborhood is minimal	3.42	0.96	0.41	-0.088	-0.161	-0.108	**0.738**
Othsafe-compared to other neighborhoods, this neighborhood is safe	3.81	0.90	0.49	0.011	0.041	0.102	**0.626**
Safelive-neighbors make neighborhood a safe place to live	3.73	0.91	0.66	-0.095	0.335	0.083	**0.516**
Safewalk-it is safe to walk in this neighborhood at night	3.40	1.12	0.32	0.037	-0.102	0.191	**0.515**
Eigenvalue				7.298	3.889	1.688	1.064
% of Variance				36.490	19.445	8.440	5.314
Cronbach's α				0.928	0.907	0.858	0.735
Min	0.320						
Max	0.850						

KMO=0.886, Bartlett's Test of Sphericity is significant at $p < 0.0001$

Note. Factor loadings > .40 are in boldface.

EMCN = Emotional Connection Subscale; MTND = Met Needs/Integration Subscale; MSHP = Membership Subscale; SFTY = Safety Subscale

that *walkpark* (β = -.31, *p*=.002) significantly predicted PSOC, while *toofar* (β = -.08, *p*=.403) and *parkuse* (β = .04, *p*=.681) did not significantly impact MSHP. Lastly, results of the regression for SFTY (R^2=.13, *F*(3,96)=4.95, *p*=.003) indicated that *parkuse* (β = .26, *p*=.009) significantly predicted SFTY, while *walkpark* (β = -.18, *p*=.077) and *toofar* (β = -.13, *p*=.194) did not significantly impact SFTY.

Chi-square and *t*-test Analyses

We separated park users (*n* = 55, 46.2%) from non-users (*n* = 64, 53.8%) to see if there were differences in PSOC and its dimensions based on usage. Non-users were coded as "0" if they chose "0" (*never/hardly ever*) as a response and users were coded as a "1" if they chose any other response. There was no significant relationship between gender and users/non-users, $\chi^2(1, N=113) = 1.3, p = .25$. Norfolk park users (*M*=3.67, *SD*=0.53) had significantly higher PSOC than did non-users (*M*=3.37, *SD*=0.64), with $t(117) = -2.72$, $p < .01$. Norfolk park users (*M*=3.89, *SD*=0.59) had significantly higher MTND than did non-users (*M*=3.62, *SD*=0.76), with $t(117) = -2.20$, $p < .05$. Users (*M*=3.65, *SD*=0.86) had significantly higher MSHP than did non-users (*M*=3.27, *SD*=1.02), with $t(117) = -2.18$, $p < .05$. Lastly, park users (*M*=3.91, *SD*=0.48) had significantly higher sense of SFTY than did non-users (*M*=3.45, *SD*=0.82), with $t(117) = -3.75$, $p < .0001$. No significant differences were found related to EMCN and users/non-users.

Although the data met the assumptions of performing an independent samples *t*-test, the *n* (*n*=39) of respondents whose home was separated from a park by a barrier (e.g., a major road) was substantially lower than the *n* of the adjacent group (*n*=80); however, Levene's test found no violation of homogeneity of variance ($p = .736$) between the two groups. The *adjacent* group (*M*=3.66, *SD*=0.59) was significantly higher in their PSOC than the *barrier* group (*M*=3.22, *SD*=0.55), with $t(117) = 3.95$, $p = .0001$. The *adjacent* group (*M*=3.42, *SD*=1.18) was significantly higher in their EMCN than the *barrier* group (*M*=2.73, *SD*=1.01), with $t(117) = 3.11$, $p = .002$. Lastly, *adjacent* group (*M*=3.73, *SD*=0.81) was significantly higher in their MSHP than the *barrier* group (*M*=2.89, *SD*=1.02), with $t(117) = 4.86$, $p = .0001$. No significant differences were found related to MTND or SFTY in *adjacent*/*barrier* groups. Additionally, there was no significant relationship between adjacent/non-adjacent and users/non-users, $\chi^2(1, N=119) = .000$, $p = .99$.

Discussion

Implications

PSOC and park use. Our findings indicate a significant relationship between park use and safety on the block. Either parks engender safer neighborhoods, or neighborhoods have to be safe for people to use the parks. Thus, we concur with previous research on the matter of safety and park use (Henderson, 2006; Stodalska et al., 2011). In previous studies, it was found that leisure can strengthen social trust via recreation activities involving onsite social interaction in outdoor settings (Glover, 2004; Glover et al., 2005).

Park administrators in Norfolk should encourage community outreach programs that help establish connections between people in the neighborhood and the parks, thereby encouraging community ownership of the parks. This could be accomplished by working with neighborhood organizations, civic leagues and local advocacy groups to establish community block parties, programming, or cleanups in neighborhood parks. Engagement at this level may lead to increased sense of safety and social trust, as well as the establishment of "natural guardians" of the neighborhood park giving rise to safer and stronger neighborhoods (Hilborn, 2009).

The regression analysis indicates no significant prediction of *parkuse* and overall PSOC; we suspected this was due to over half the sample not using parks. Users of urban parks had higher PSOC than non-users. Although the frequency of usage did not have an impact on PSOC, using the parks in some capacity (over not using them at all) has some influence on PSOC, which corroborates previous research (Cochrun, 1994; Jacobs & Appleyard, 1987; Kweon et al., 2010; Lund, 2003). In addition to urban park users having significantly higher PSOC than non-users, park users also experience higher neighborhood needs being met, a higher sense of membership in the neighborhood, and a higher sense of safety over non-users—a further argument for park advocacy.

PSOC and proximity. We explored the relationship between subjectively-rated proximity and PSOC to find out if perceived distance (*toofar*) or reported walking distance to the park (*walkpark*) had any association with PSOC. Our assumption in testing these relationships reflected Kearney's (2006) notion of opportunities for park visitation and views of nature and Shafer, Lee and Turner's (2000) notion of being able to see natural areas. We found support for the relationship between both aspects of proximity and PSOC. Both *toofar* and *walkpark* significantly impacted overall PSOC, indicating that the closer to the park, and the less time it takes to get to the park, the greater the overall PSOC.

These findings relate to Lackey and Kaczynski's (2009) suggestion that aesthetics of the urban park (destination) and the walk to the park itself may be variables of interest. Further indication that proximity to a park increases sense of community in a neighborhood came from our findings indicating that adjacent residents were significantly higher in their overall PSOC, feelings of neighborhood membership, and that the neighborhood was meeting their needs, than those residents experiencing some physical barrier to using the neighborhood park. Our results are consistent with previous research (Walker & Crompton, 2012). Facilitating greater access to Norfolk parks via urban design for users, or greater park information dissemination regarding the benefits, location, and amenities for non-users, will create more use, safer neighborhoods, and greater overall PSOC. Admittedly, we acknowledged that if one lives closer to a park, one is apt to use the park more than one who lives further away. However, the chi-square analysis indicated no relationship between use/non-use and adjacent/non-adjacent areas.

Limitations

Considering our sample size, statistical analyses and interpretation must be viewed cautiously. While we had an adequate representation regarding gender, our sample was overrepresented by Whites and those with higher incomes and education. Arguably, this has an effect on generalizability beyond these neighborhoods, and should be viewed as a case study, especially given our low response rate. The study is also limited to the exploration of PSOC variables and does not consider park use in the context of other popular recreation theories, such as social contact theory. We also recognize the limitations on how we operationalized proximity, and the issues related to inclusion of streets only within the park service area, given residents could use parks outside of their neighborhood (Anderson et al., 2008; Kaczynski & Havitz, 2009; Walker & Crompton, 2012). Related to this, blocks containing schools, apartment buildings, and religious organizations were excluded from the study. While we recognize that this would provide a unique perspective on park use, exclusion of blocks with these characteristics was due to accessibility (i.e., being buzzed into apartments) and safety concerns, as well as the potential influence of community institutions (schools, religious, or social organizations) on the recreation and leisure patterns in the neighborhood, and the recognized influence they have on neighborhood sense of community (McMillan & Chavis, 1986), at both the individual and community level (Brodsky, O'Campo, & Aronson, 1999).

Future Research

Two years after the completion of our study, Chavis, Lee, and Acosta (2008) created a revised SCI-2, which addressed previous concerns regarding the original SCI, but did not incorporate a safety component in the revision. Our recommendation for future researchers is either to use the current scale we created for purposes of cross-validation, or use the SCI-2, but add the additional safety component when assessing PSOC in neighborhoods. Future studies should explore the role of walking in the neighborhood, enjoyment of urban green space, and the impact this has on PSOC. Exploration of walking in neighborhoods and urban parks could bridge the recreation and social health research with recent contributions to recreation and physical health (Kaczynski & Henderson, 2007; Kaczynski & Havitz, 2009; Mowen & Confer, 2003; Mowen, Orsega-Smith, Payne, Ainsworth & Godbey, 2007). Future studies should also consider the inclusion of perceived recreation benefits and other variables, such as length of time living within the neighborhood. Gómez and Malega (2007) found perceived benefits of recreation to be a critical and often ignored precursor to participation. Additionally, Anderson et al. (2008) noted that benefits differ by distance from the recreation site, and studies support a relationship between length of time living in a community, and knowledge of recreational opportunities.

Conclusions

The premise for this study began with the notion that the U.S. will continue to be more urbanized, and that densely populated cities are more likely to have lower sense of community in their neighborhoods than suburban areas. Given the urbanization trend, more studies are needed on urban parks and residents. We sought to complement current research on healthy living and physical activity and urban parks, with an exploration into social aspects of neighborhoods and urban parks. This study explored the relationship between urban parks and psychological sense of community. The analyses reinforce the need to include a safety dimension when researching neighborhood PSOC. The relationship between urban park use and PSOC was supported only for the safety dimension. However, park users were significantly higher in their PSOC than non-users. Both aspects of proximity (perceived distance, and reported distance) in this study were significantly related to PSOC. Furthermore, proximate (adjacent to the park) residents were stronger in PSOC than distant (nonadjacent/barrier) residents.

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