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## NEW RECREATIONAL FACILITIES FOR THE YOUNG AND THE OLD: POLICY AND PROGRAMMING IMPLICATIONS

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### Abstract

It is assumed that higher quality recreation facilities promote physical activity and serve communities better. We tested this assumption by comparing changes in the use of an expanded and renovated skate park and a modernized senior citizen's center to two similar facilities that were not refurbished. The skate park was nearly tripled in size, and the senior center was remodeled and received new exercise equipment, a courtyard garden, and modern architectural features. We assessed use of these facilities through direct observation and surveyed both facility users and residents living within two miles of each facility.

We found the assumption that making improvements to facilities alone will not always guarantee increased use. While there was a 510% increase in use of the expanded skate park compared to a 77% increase in the comparison skate park, the senior center had substantially fewer users and provided fewer hours of exercise classes and other programmed activities after the facility was renovated. The implication of our study is that use results from a complex equation that includes not only higher quality recreation facilities but also programming, staffing, fees, hours of operation, marketing, outreach, and perhaps a host of other human factors.

### Keywords

Physical activity; built environment; renovation; systematic observation; natural experiment; recreation; youth; seniors

## Introduction

The *Guide to Community Preventive Services* recommends creating or improving access to places for physical activity as a way to increase physical activity (1). However, the studies that were reviewed to inform this recommendation primarily consisted of worksite interventions in which workers were given easy access to exercise classes combined with outreach. No studies were able to answer the question, “If you build it, will they come?” Thus, to guide future research directions, the systematic review posed several questions: “Is enhanced access to places for activity sufficient to create higher physical activity levels, or are other intervention activities also necessary? And what are the effects of creating new places for physical activity versus enhancing existing facilities?” (1) While, theoretically, the environment guides utilitarian physical activity and there is some accumulated evidence on the function of street and urban design in enhancing physical activity (2,3), a robust body of evidence to support the role of the physical environment in leisure physical activity is lacking.

Urban public parks are specifically designated for leisure activity. Public parks are venues generally available to everyone and they are a sanctioned place to engage in moderate-to-vigorous physical activity. Evidence that parks are associated with physical activity comes from a variety of sources, including studies have shown that people who live nearer to parks are more physically active (4–6) and that walking is associated with additional acres of green space and the number of parks (7).

The question of whether park renovation increases physical activity can be partly addressed by studying what happens when local communities improve and renovate recreation facilities as their older ones deteriorate and no longer fully meet the needs of constituents. Because new facilities are more attractive and may provide new opportunities for leisure activities and events, many implicitly believe these facilities will be more appreciated, more utilized, and bring greater benefit to the community (4,8–11). In the current environment of increased concern about the epidemic of obesity, there is even a greater expectation that improved recreation facilities will also improve physical activity and community health.

How people react to changes in the built environment, like renovated physical activity facilities, depends on a variety of factors. Physical environments, such as a recreation centers, operate within a social environment—one that is created by users interacting with individuals who manage the facilities and the rules and expectations that are established for their use. Management typically also determines and/or approves which activities will be supported by or allowed in the facility. Constituents (i.e., users) contribute to the social environment by their participation, support, and acquiescence and sometimes even protest the management’s programs or policies. In many ways social and physical environments are deeply intertwined; neither could exist without the other, and each one deeply colors responses to the other.

The appeal of a physical environment may also change as people age (12,13). Environments that are physically challenging and provide opportunities for competition may be more attractive to youth than to seniors who may be frail and avoid situations where they might fall or be injured. Seniors may prefer more predictable environments that provide less vigorous activity; thus, physical features may be less important in attracting seniors to a recreation setting than social factors.

This paper reports the outcome of changes in park use in two vastly different settings where significant investments of public resources were made to improve facilities within them. In one case, \$3.5 million was spent to expand a skate park; in the other, \$3.3 million was invested to renovate a senior center. The value of these investments can ultimately be measured in how well they are used over time.

Our objectives were to (1) measure changes in use over time, from before to after the renovation, especially changes in the level of physical activity, and (2) to determine what particular factors might be most predictive of the changes found. In particular we were interested in perceptions of safety, whether park proximity would be relevant to park use, and whether other changes in park management might be associated with changes in park use.

## Methods

We conducted systematic observations in two skate parks and two senior centers in Los Angeles over a 3-year period. One skate park and one senior center were scheduled to undergo significant facility improvements, and we selected two comparison parks that were not scheduled to receive facility improvements during the years of this evaluation. We attempted to match intervention and comparison parks on both neighborhood characteristics (i.e., demographics and economic distribution) and physical features (i.e., similar size and type of recreational facilities). The two senior centers were located within very large parks (i.e., 48 and 67 acres) that also had extensive walking paths in addition to a building designated specifically for senior activities.

Finding a comparison park that matched the intervention skate park proved challenging. We selected one with physical characteristics similar to the intervention park (i.e., constructed of cement and built as bowls in the ground, rather than raised structures). The two skate parks, however, served neighborhoods with somewhat different population characteristics (e.g., one had a larger Latino population; 32% vs. 21%). In addition, the comparison skate park was located within a large recreational facility, while the renovated one was not connected directly to a larger leisure time site.

The skate park was closed for 2 years during renovation. Improvements to it were limited to the skate surfaces themselves, and did not target parking, lighting, or the office facility. The senior center underwent massive renovation, and was also closed to the public for 2 years while improvements were made to its entrance, courtyard areas, and gymnasium. The goal was to make the facility into an 'active' senior center—one with a gymnasium and exercise equipment suited for physical activity.

## Measures

Trained bilingual assessors completed systematic observations in the 4 parks using the System for Observing Parks and Recreation in Communities (SOPARC)(14), and they also conducted interviews with both park users and with residents living within a two-mile radius of each park. In addition, US 2000 Census data were used to determine various characteristics of area residents, including race/ethnicity, age, gender, and income.

All potential areas for physical activity (referred to as target areas) were established with respect to location, size, and boundaries by mapping each park prior to data collection. A total of 6 and 8 areas were targeted at the intervention and comparison skate park, respectively, and these included skate pools, jumps, and surrounding cement and grassy areas. Large skate ramps and bowls were divided into smaller areas, so all users could be counted at the time of observation. Prior to conducting follow-up observations at the experimental location, 9 new target areas were added to the original 6 for a total of 15 target areas.

A total of 14 and 18 areas were observed at the intervention and comparison senior centers, respectively. These included all areas for potential physical activity, such as gymnasiums, lawn spaces, and court yards. By follow-up, the number of targeted areas in the renovated senior center increased from 14 to 20, and in the comparison senior center target areas increased from 18 to 19 when a room previously used for childcare became available for physical activity.

Because people using senior centers might also use other park facilities, we also observed walking paths that were part of the larger neighborhood parks where the senior centers were situated.

Systematic observations were conducted at each of the four parks during two different data collection periods, each lasting seven days. The initial series of observations occurred prior to any reconstruction, with intervention and matched parks being observed within a few weeks of each other. To control for seasonal variation, follow-up observations were made during the same month as the initial observations; these occurred one and three months after the skate park and the senior center reopened to the public, respectively.

All parks were observed at 4 different times each observation day. All parks were observed at similar times during the afternoons and evenings (i.e., 12:30PM, 3:30PM, and 6:30PM), however, morning observation times were slightly different to capture park use when individual facilities opened for the day (i.e., 9:00AM at the senior centers; 10:00 and 10:30 AM at the skate parks). Data collectors documented the date, time, and location of each scan, the contextual conditions of the activity area, and the gender, age, ethnicity, and activity level of each person in each area. Each assessment could typically be completed in less than one hour. In the event that rain interfered with a given observation, field staff returned to the park at the same time period and on the same day of the following week. Reliability of SOPARC has been found to be good and is described elsewhere (14) and the validity of activity codes have been established through heart rate monitoring (15,16).

The two senior centers had nearby walking paths. In both cases, we determined it would take approximately 10 minutes for the average adult to walk around each of the tracks/paths. To reduce the possibility that we might count someone more than once, we established a specified coding station from where data collectors coded the characteristics of each person who passed that location during a 10-minute interval.

In addition to direct observations in the parks, we conducted face-to-face interviews in either English or Spanish with adult (i.e., over age 18) park users and neighborhood residents. We asked these participants to provide the location of the intersection closest to their residence and we geocoded that location to determine the distance from their home to the recreation facility. Household interviews were scheduled by randomly choosing a sample of addresses within a ¼-mile buffer of the park, and within ¼ and ½-mile, ½ to 1-mile, and 1-mile to 2-miles from the park. We used ArcView Software to select all possible addresses in these buffers and then randomly selected 20 in each stratum. Field staff followed a protocol to replace addresses if a household did not exist, was unoccupied or abandoned, or if visiting that location appeared dangerous because of dogs, gates, or gang activity.

## Results

Table 1 shows the neighborhood characteristics for each of the four parks, and Figure 1 shows the changes in use of the senior centers and the skate parks.

### Skate Parks

Use of both the comparison and intervention skate parks increased, but the increase was dramatically higher in the intervention skate park ( $p < .001$ ), which had 6 times as many users from baseline, representing a 510% versus 77% increase in the comparison park. The number of female users increased 11-fold, while the number of males increased 6-fold. In addition, the intensity of activity increased more in the intervention park than in the comparison park (see Figure 2). In the intervention skate park we observed more vigorous activity, while in the comparison there was more sedentary behavior observed at follow-up.

Hours and staffing increased in the remodeled skate park after renovation. The director of the remodeled skate park reported that more staff were added after it reopened to provide 3 per shift and there was a 1:7 staff-child ratio during the camp. An additional class was also offered on the weekend.

At follow-up the users of the renovated skate park lived closer on average than the users at baseline (2 miles vs. 3 miles), although the difference was not significant ( $p=.24$ ). In the comparison park the opposite occurred, with a greater percentage of users coming from a further distance at follow-up (2 miles vs. 1.2 miles), also not significant ( $p=.28$ ). This finding was in contrast to the park director's perception that people came from further distances after the park was renovated.

## Senior Centers

The number of users of the renovated senior center was significantly lower after it was finished than at baseline (478 vs. 198). Meanwhile, the reduction in the number of people using the comparison center over time was not significant (765 vs. 747). The renovations to the senior center included adding a bank of exercise machines (e.g., treadmills, stationary bike, universal machine), but during the 28 observations to the area at follow up, only a total of 15 people were seen using them, 9 seniors and 6 adults. The number of seniors observed using the walking paths adjacent to the senior centers also decreased from baseline to follow-up, from 97 to 28 in the renovated center and from 70 to 36 in the comparison park. The decrease was much more marked at the intervention center ( $p < .01$ ).

The renovated Senior Center had a new director and although the hours it was open increased slightly from baseline, the amount of time scheduled specifically for senior programs or classes decreased from 30.8 hours to 16.5 hours. In addition, a monthly fee was added (\$10 for using the machines, and \$15 for using both the machines and weights).

## Perceptions of Safety

At baseline, most of those interviewed in the parks and at home reported the parks were *safe* or *very safe*. At follow-up the percentage of people who thought the parks were *very safe* (as opposed to merely safe) nearly doubled for the parks with senior centers, increased by 72% for the renovated skate park, and increased four-fold for the comparison skate park ( $p < .0001$ ).

## Discussion

We examined the effects of renovations of recreation facilities designed for two contrasting groups --youth and seniors-- and found that improving recreational facilities in parks can, but does not necessarily increase either the number of people who use them or the levels of physical activity occurring in them. The implication of our study is that park use results from a complex mix of factors that includes not only higher quality recreation facilities but also programming, staffing, fees, hours of operation, marketing, outreach and perhaps a host of other human factors.

In her analysis of what makes parks successful, Jane Jacobs hypothesized that parks not endowed with a central location in high density residential and commercial areas need to have other qualities, which she calls "demand goods," that draw people to them (17). In our case, it appears that the extensive expansion of the skate park and its dramatic bowls and ramps were sufficient to attract young people who could appreciate the physical challenges as well as participate in the classes and camps that staff offered. The increase in use was immediate, and occurred in spite of the continued absence of shade structures or lighting. The small increase in skate park hours cannot explain this higher level of usage post-construction, since more

youth were observed during hours when the skate park had been previously open. Moreover, during the added classes, the skate park could not be used by the general public.

In stark contrast, use of the renovated senior center declined significantly from pre-renovation times. One factor that might explain the decline was the fact that follow-up measures occurred only 3 months after re-opening. Three months might not be sufficient time to inform seniors of the facility and its programs and get them to change routines come to back to the center again. During the two years that the facility was closed, some of the seniors may have developed new relationships with other sites and it may have been difficult for them to return to the original center; others may have passed away or become incapacitated. Another possible explanation for the decline in numbers of users was the decrease in the number of classes offered at the facility compared to before construction. The new manager did report plans for the facility to gradually add additional classes over the coming year, so a longer-term follow-up might find greater facility use.

In addition, the exercise equipment added to the facility may have been unfamiliar to seniors, and they may have needed guidance and supervision to use it. An equipment fee is also certainly a barrier for seniors on fixed incomes, and they are a population likely use public facilities.

The decline in the renovated facility use was mirrored by a decline in the use of the walking path by seniors. It is not possible to identify a causal relationship, however, because walking path use also declined at the comparison senior facility. These reductions may reflect a secular trend in the decline in the use of park facilities that we also observed in other places in the city. Because survey respondents considered the parks to be safer at follow up than at baseline, the decline in use cannot be attributed to perceptions of increased crime or other hazards. Safety has been cited as a reason why people do not go to parks or are afraid to exercise outdoors (18–21). However, in this case, increases in the perception of safety were not associated with increased use at either senior center or on the walking paths.

What is also surprising is the absolute difference in the number of users at the two senior centers at baseline. The population of seniors who lived in close proximity to the renovated senior center was considerably higher, yet even at baseline the comparison center attracted twice as many users. This difference can be explained in part due to the comparison senior center having a policy allowing groups not sponsored by the city to use or rent their facilities, while outside groups were not allowed to use renovated center. Moreover, the differing levels of use may also be related to other unmeasured social factors, such as park director management style or specific cultural factors unique to the center and participants.

The lack of consistent increases in facility use after improvements suggest that investment in bricks and mortar infrastructure alone may not be sufficient to increase either facility use or physical activity levels. Social factors may be more important in attracting people to facilities than physical amenities, especially to certain populations like seniors. For youth, however, a challenging physical structure may be a sufficient attraction. Nevertheless, neither facility appeared to be operating at maximal use.

## Limitations

A limitation of our survey is that it did not specifically target seniors or youth but only adults who used the facilities or lived nearby. Measurement was conducted during specific weeks and it is not clear how much park use patterns vary from week to week. The use of comparison parks was meant to control for secular variations from year to year. However, having only 2 intervention park and 2 comparison parks limits generalization. Thus, this investigation is essentially a report for four case studies, and it should be replicated in other localities and in



more diverse communities to enhance its validity. For a more rigorous study, many more parks would need to be included.

Social and programming factors seem to play a much larger role in facility use and physical activity than we recognized prior to starting this study. Personnel changes, arrangements with external organizations, programming, and hours of operations are only a few of the critical factors that we did not track prospectively. Although it appeared there was a decline in the use of the renovated senior center and none in the comparison, the fact that the comparison senior center had a different policy about facility use could obscure possible declines in the use that stemmed from park programming. It is possible that park programs decreased and outside use increased, keeping utilization numbers fairly constant. It is necessary to track the exact programs and factors that bring people to the center, just as retailers track which items in their inventory sell better than others.

## Future directions

Future studies should pay attention to social issues as well as other factors including programming, marketing, outreach, and staffing, all of which are potential constraints on attracting people to park facilities. Allowing other groups to make use of public facilities for private purposes is certainly a good way to maximize facility use. This, however, opens up other issues, including staffing, safety, maintenance and cleaning, insurance, and legal issues that would need to be addressed by park administrators.

Parks are oriented to provide a venue for leisure that is safe, clean, and pleasant, but they are not currently managed with a market orientation with a goal to maximize the number of users or to promote physical activity (22). In these two examples we saw that increased programming was associated with more users and limiting programming with a reduction of the number of users. Programming and staffing represent ongoing costs critical to the number of users and the type of physical activity that occurs in parks, and is in addition to the cost of bricks and mortar.

The most important future direction that park managers should consider is to define benchmarks for optimal park utilization. Determining what those numbers should be can begin with a measure of existing use, and account for the number of local residents, and the size and capacity of the park. Park managers need to identify the ideal occupancy rate, the optimal levels of physical activity that the park can support, and to strive to attract that level of users on a routine basis.

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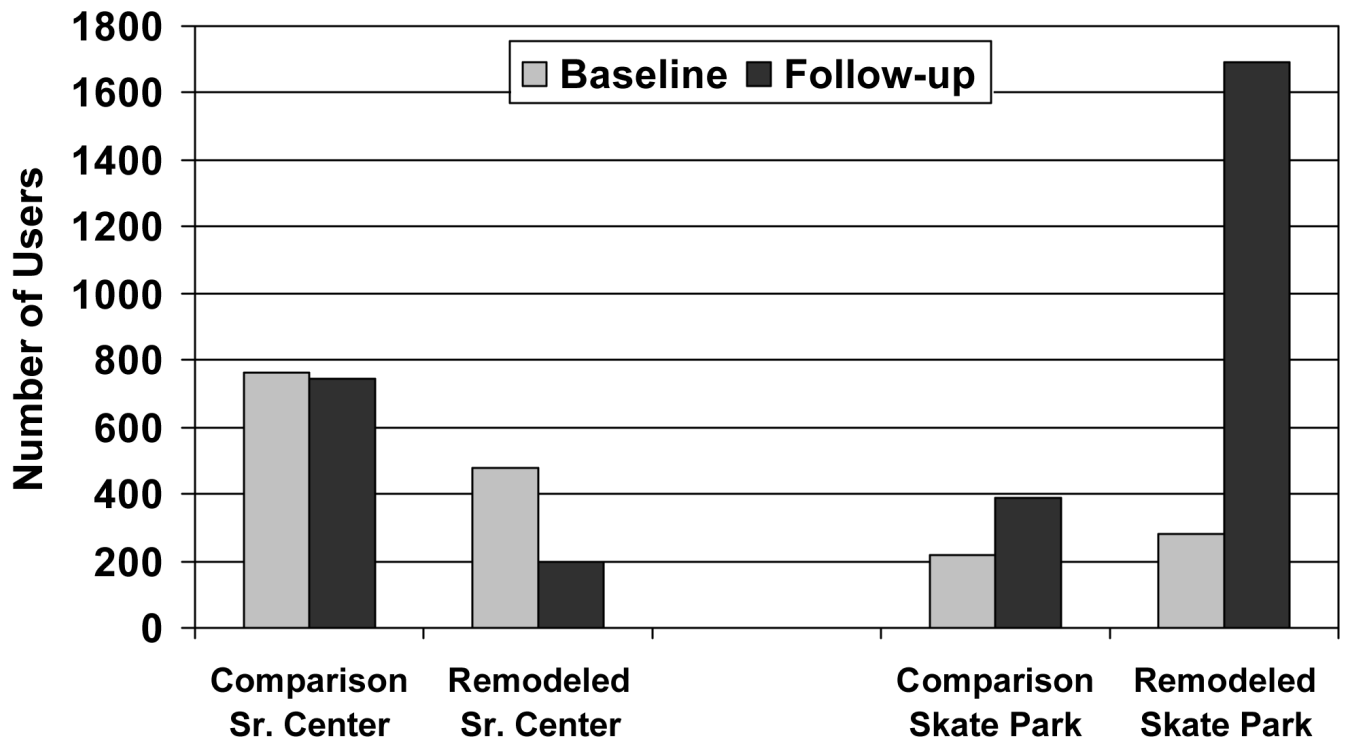
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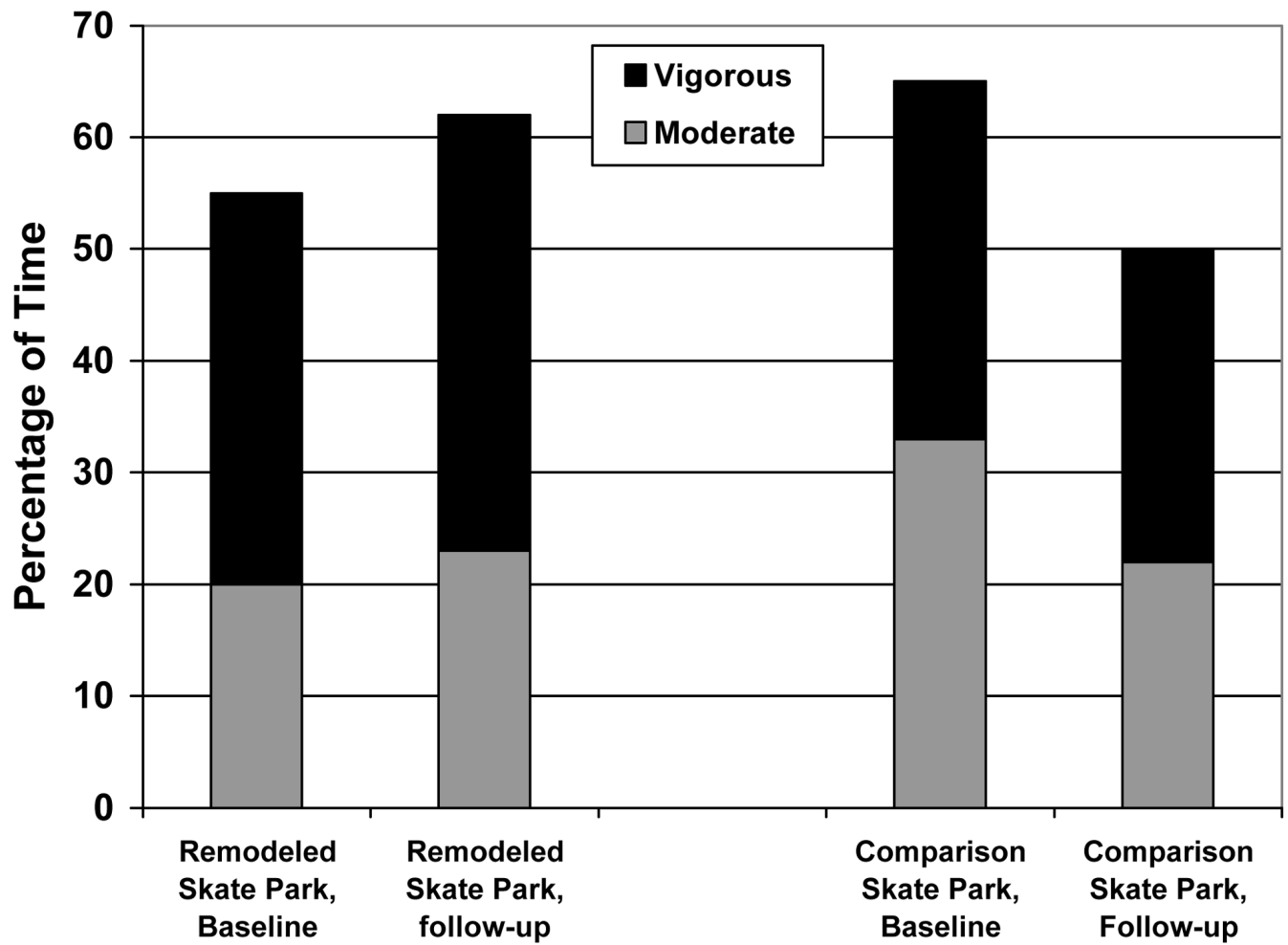
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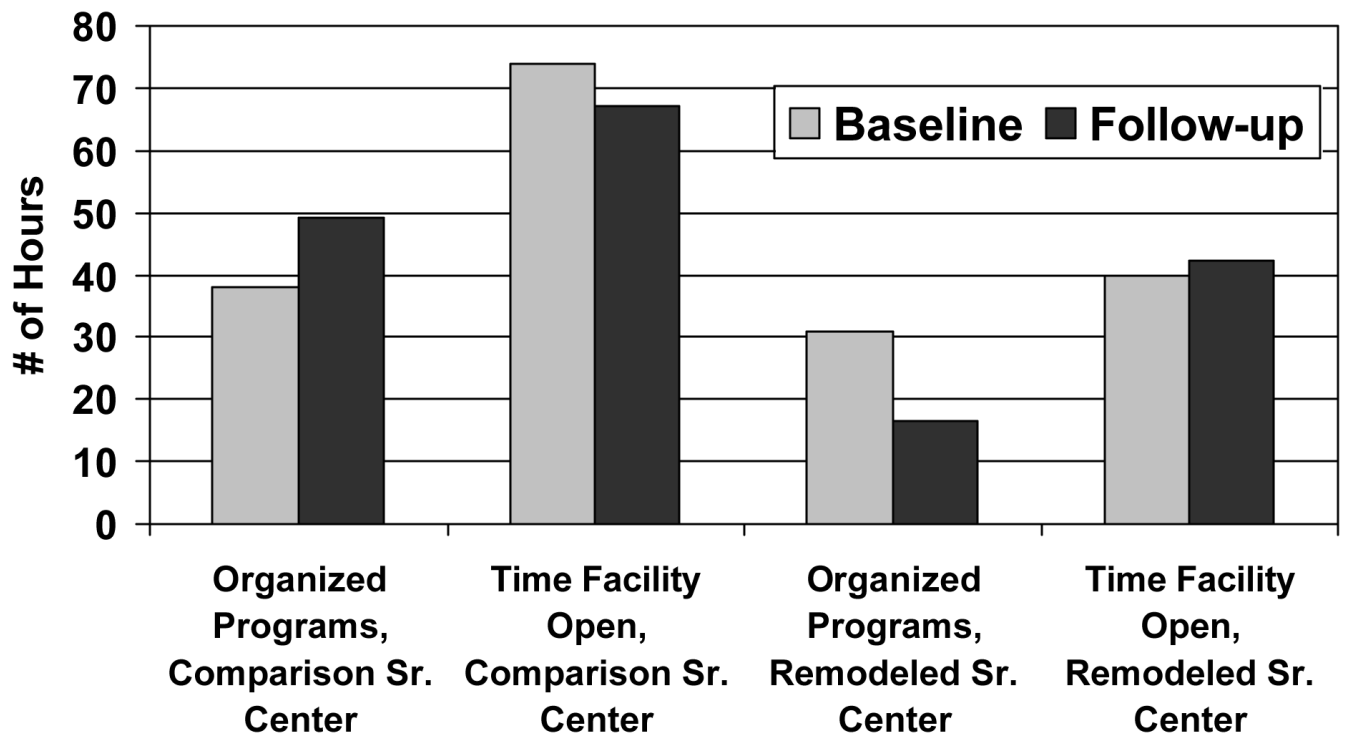




**Figure 1.**  
Number of Users in Senior Centers and Skate Parks Over Time



**Figure 2.**  
Proportion of Time Users Spent in Moderate and Vigorous Physical Activity in Intervention and Comparison Skate Parks



**Figure 3.**  
Change in Senior Center Hours of Operation and in Hours of Organized Programs and Classes

**Table 1**  
**Description of Park Neighborhoods (census tract of park)**  
 Source: Census 2000 Summary File 1 (SF 1) 100-Percent Data

	<b>Intervention Skate Park</b>	<b>Comparison Skate Park</b>	<b>Intervention Senior Center</b>	<b>Comparison Senior Center</b>
Population Density (1 mile radius)	31,156	33,162	54,118	46,958
% Households in poverty	11.6%	8.4%	10.9%	11.7%
% Hispanic (all races)	32.0%	21.4%	5.3%	11.3%
% Non Hispanic White	53.1%	61.9%	52.4%	74.5%
% African American	2.3%	5.3%	7.9%	6.5%
% Persons over age 60	15.9%	24.7%	18.6%	24.6%
% Persons under age 18	25.6%	22.3%	14.3%	15.4%