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Addressing Obesity: Fear of Crime, Perceptions of Disorder and Disparities in Child and Adolescent Use of Public Parks

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Addressing Obesity: Fear of Crime, Perceptions of Disorder and Disparities in Child and Adolescent Use of Public Parks

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Introduction

The United States has 74.5 million children.¹ Approximately 30% of children in the United States are overweight² Nine million children aged 6 years and over are obese.³ These children are at risk for a variety of problems, including sleep disorders, joint difficulties, liver disease, type 1 diabetes mellitus, reproductive obstacles, hypertension, heart disease,⁴ social stigma, and behavior problems. Increased inactivity and less diverse food content as children age also contribute to youth obesity. There are indications that adolescent girls are less likely to engage in regular physical activity than boys.⁵ In 2010, the National Center for Health Statistics compared national data from 1976-1980 to data from 2007-2008 and found that obesity among 6- to 11-year-olds and 12- to 19-year-olds increased by 13.1% to 19.6% and 18.1% for each age group respectively. For 2- to 5-year-olds, obesity increased 5.4% to 10.4% of the total population in the age group. Obesity was defined as being above the 95th percentile on growth charts, given an expected body mass index that varied with the child's sex.

Background and Significance for Reducing Health Disparities

It is clear that healthy habits are best formed early in life. At relatively minimal cost, promoting child and adolescent use of outdoor spaces can produce substantial health and economic returns.⁶ To that end, addressing obesity requires an understanding of the reasons that children and adolescents form healthy versus unhealthy habits. This study was an effort to understand the extent to which risks for obesity, as they relate to child and adolescent utilization of public parks, might vary by race and ethnicity in a specific context—Houston, Texas.

Houston has had the dubious distinction of repeatedly being number 1 on *Men's Fitness Magazine's* fattest cities list in recent years.⁷ Statewide, 59% of children and adolescents were not exercising regularly in 2007.⁸ That year, 30% to 35% of Texas children were overweight or obese,⁹ and in 2010, 20% of Texas girls ages 10 to 17 years were obese. Texas had the country's highest rate of obesity in that age group.¹⁰ Experts predict that by 2025 type 2 diabetes mellitus (an obesity-related illness) will cost the state \$15 billion for healthcare alone.¹¹ In the 2009-2010 school year, 341,563 schoolchildren were assessed for signs of

acanthosis nigricans (AN), a mark on the skin indicative of risk for type 2 diabetes mellitus. Six percent (22,647) had AN. Seventy-nine percent of those with AN were obese. Those with AN peaked at 27% for children in the fifth grade, followed by 23% in seventh grade.¹²

Given these serious health concerns, we need to understand the extent to which risk for obesity among children and adolescents reflects environmental risks. The environmental risks are a fear of crime and perceptions of disorder as these might inhibit the use of public parks for healthy activity. To what extent are children and adolescents exposed to the possibilities of using outdoor spaces to improve or maintain their health? Where does this exposure occur?

Houston is diverse. Markedly, blacks in Houston are 25.3% of the city's population (per the 2000 census). They include many persons from several African and Caribbean nations. National data for 2007-2008 from the National Center for Health Statistics in 2010 revealed that 29.2% of black girls, as opposed to 17.4% of Mexican American girls and 14.5% of white girls, were obese. Data for 2007 to 2008 revealed that 26.8% of Mexican American boys, as opposed to 19.8% of black boys and 16.7% of white boys, were obese. Although largely of Mexican descent, Houston Hispanics (37.4% of the local population) include significant numbers of persons from Central and South America. The Houston Asian community (5.3%) is also very diverse. Whites, who constitute 46.9% of Houston's population, appear less diverse as to ethnic or national origin.¹³

Houston's Hispanic community is of special concern. Hispanic females have substantially greater rates of obesity compared to whites, and explanations for this difference are not conclusive.¹⁴ Burdette and Whitaker¹⁵ analyzed national data on perceptions of safety and outdoor use of space. They found that Hispanic maternal concerns about community safety varied depending on the sex and age of the children involved. Interestingly, while perceptions of neighborhood safety (as indicated by the Neighborhood for Children Rating Scales) were related to television viewing time, they were not related to outdoor playtime. Burdette and Whitaker also found that parents with the highest incomes and the most education were more likely to describe their communities as safe. Because the schedules of children and adolescents are largely dictated by their caretakers, who the parents and guardians are and the behaviors

they model are important. Parental inclination or capability to access park spaces is important given that the US Centers for Disease Control and Prevention (CDC)¹⁶ recommends that children and adolescents have at least 60 minutes of moderate or vigorous activity per day. The CDC also reports that two-thirds of youth in the United States do not meet this standard. Additionally, several studies report that adult use of the outdoors is influenced by contextual elements.^{17,18} These elements include the availability of leisure time, the availability of recreational spaces, work schedules, concerns about traffic safety, perceptions of safety (not necessarily the reality of crime statistics), and weather. The extent to which this was the case for specific Houston communities was explored in this study.

Persons may have a fear of crime that may or may not be substantiated by actual crime numbers in the area. Research by the Committee on Environmental Health and Tester¹⁹ indicated that such fear might be based on perceptions of disorder, given the presence of things like broken windows. These factors may inhibit or facilitate child and adolescent use of outdoor spaces for healthy physical activity. Differences in perception may also exist by race and ethnicity. Thus, this study is transdisciplinary, bringing criminal justice and public health together. The specific goals were:

- i. To determine if there is a relationship between a community's health status indicators, crime rates, and child and adolescent use of public parks.
- ii. To determine if there is a relationship between perceptions of the physical and social environment around the parks and child and adolescent use of the parks.
- iii. To generate policy recommendations that encourage and maintain child and adolescent outdoor physical activity in the areas studied.

Methods

The study has a qualitative research design. It is an effort to describe 4 racially and ethnically homogeneous communities. The effort included detailed observations of 4 communities over 4 seasons and interviews with persons in each community. The data were qualitatively analyzed to describe the communities' environment and to identify obstacles to child

and adolescent use of specific public parks for healthy physical activity. It was necessary to focus on 2 to 5 public parks in each of the 4 communities to observe each space effectively.

The researchers' etic codes to examine each community in terms of a possible impact on the use of the parks were: fear of crime; perceptions of disorder; exposure or lack thereof to outdoor healthy physical activities by parents, by peers, and in schools; and the weather. The outcome of interest was the extent to which children and adolescents used the parks for healthy physical activity, given that activity is an important component of avoiding obesity.

To identify the communities, the researchers examined geographic information systems data from the Houston Police Department and other City of Houston data using ArcView mapping software. Data on state school rankings were also considered, but Houston Department of Health and Human Services child health data were not made available. Thus, the 4 communities were selected based on a high race or ethnicity of interest concentration and a relatively high crime rate within that race/ethnic group. The communities included: Alief (Asian), Eldridge/West Oaks (white), Sunnyside (black), and Northside/Northline (Hispanic). The study received Institutional Review Board approval from both the researchers' university and another university through which funding for the study was administered.

Observation Data Collection Across 4 Communities During 4 Seasons

Observations of the communities suggested substantial racial/ethnic shifts. The communities were selected using 2000 census population data. Hispanics appeared dominant in all 4 communities. The principal investigators—with the assistance of undergraduate and doctoral students—spent 1 year in the 4 communities, observing the use of the public parks and interviewing community residents. The researchers decided to focus their observations on at least 2 primary public, county parks in each community. In the Asian community (Alief), the parks were Arthur Storey, Boone Park, Hackberry Park, Harwin Park, Alief Community Park, and to a lesser extent, Briar Meadow Park and Sharpstown Park. In the white community (Eldridge/West Oaks), the parks were George Bush

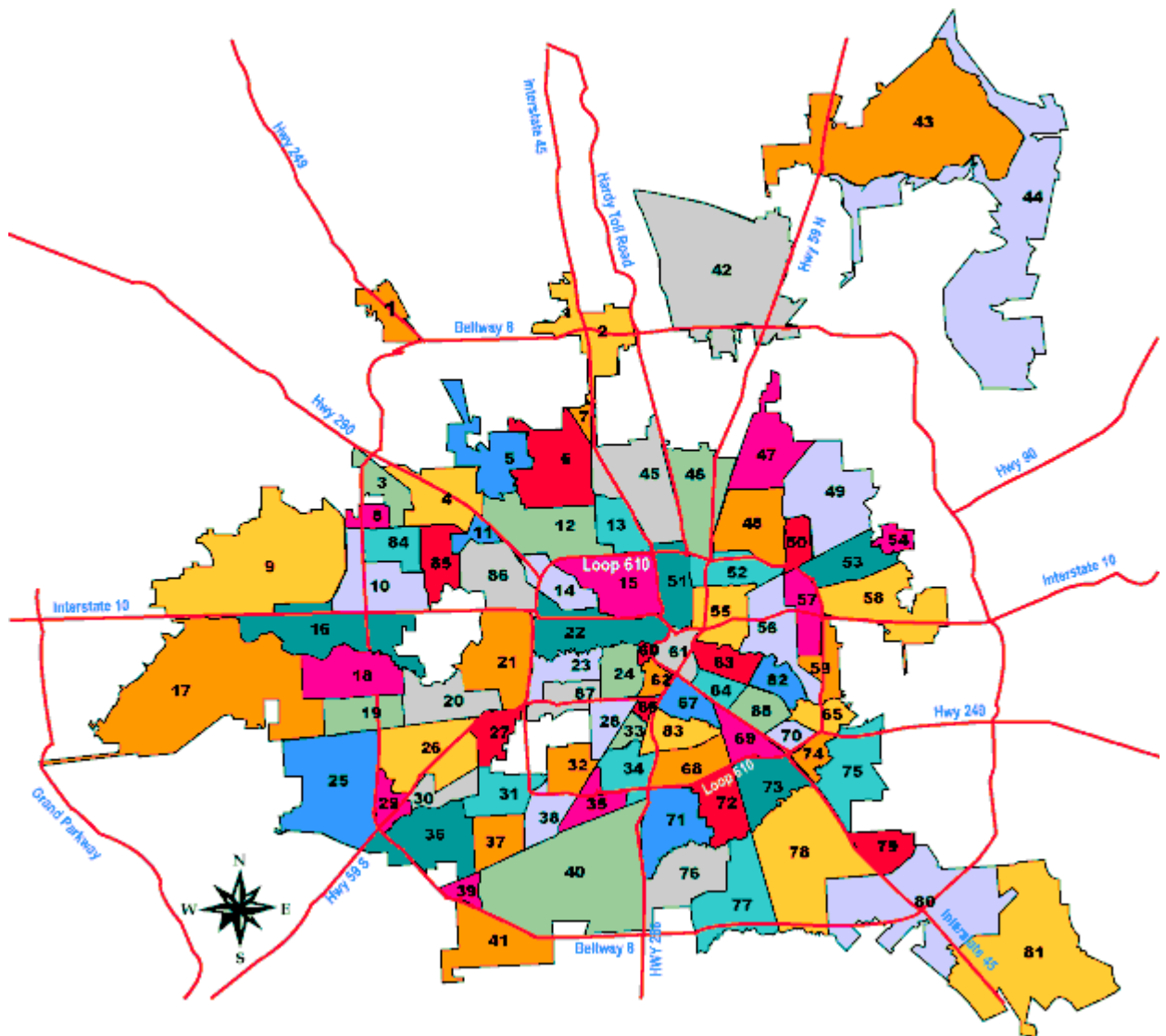
Park (near I-10 and Highway 6) and Ray Miller Park. In the black community (Sunnyside), the parks were Edgewood, Sunnyside, Grimes, Sims Bayou, and Cloverland Park. In the Hispanic community (Northside/Northline), the parks were Independence Heights, McCullough Park, and West Little York Park.

The areas were observed at various times of the day (early morning, mid-morning, mid-afternoon and evening) on different days for all 4 seasons. Each researcher maintained a description log of these observations, and several photographs were taken. There were counts of activities and descriptions of children's and adolescents' use of these spaces. The researchers also kept personal reflexive logs to monitor themselves as instruments. Qualitative descriptions were also made regarding the physical size of persons in the different communities.

To compare the circumstances of health status and crime rates in the 4 communities, census data were examined regarding national origin, poverty level, children in poverty, employment rate, and education level. The census health status indicators were the most common causes of premature death and the rate of type 2 diabetes mellitus (a proxy measure for obesity). As an indicator of the crime rate, the census's violent crime rate was used.

Figure 1. Houston Super Neighborhoods Map

Available from: http://www.houstontx.gov/planning/SN/abt_sn.html



Alief= #25
Eldridge/West Oaks= #17
Sunnyside=#71
Northside/Northline=#45

Participants and the Interviews

A convenience sample of males and females who were at least 18 years old and older were interviewed regarding their own (current and retrospective) and their children's or wards' use and non-use of specific public parks. A total of 120 persons was interviewed in the 4 communities. There were 39 in Alief (which has a substantial Asian population), 34 in Eldridge/West Oaks (with a largely white population), 17 in Sunnyside (with a black population) and 30 in Northside/Northline (with a Hispanic population). There were 52 (43%) males and 66 (55%) females; 36 (30.3%) of the respondents were black, 38 (31.9%) were Hispanic, 11 (9.2%) were white, 27 (23%) were Asian and 4 (3.4%) other races/ethnicities. The average age was 36 years, and the age range was from 18 to 82. Interviews were conducted from Spring 2010 to Spring 2011 over 4 seasons. Each participant was given a T-shirt as an incentive to be interviewed. Most of the persons interviewed (over 90%) were persons using the public parks. Those not in the parks were in community spaces such as malls and community centers. While many (67%) were parents, others had escorted grandchildren or other relatives to the park. The principal investigator, a black female, led interviews in the black, white, and Asian communities; the co-principal investigator, a Hispanic female, led interviews in the Hispanic community.

The interviews lasted 10 to 30 minutes. The shorter interviews were with non-parents or guardians who did not know the details of the children's schedules. The instrument had 73 closed and open-ended items. Persons were asked about their and the children's demographics, health, work schedule, education, perceptions of the community and the park spaces, safety, signs of disorder, the extent to which the children were exposed to outdoor physical activity in school (elementary, middle, high school), and the level of past and current outdoor physical activity choices of the parents and other adults in the children's daily lives. The instrument included items adopted from the work of Day et al²⁰ on the effects of a community revitalization effort on citizen perceptions of their urban environment.

The primary obesity health status indicators for children and adolescents were the responses to the following interview items:

- “Are any of the children (and/or adolescents) under your care overweight? If yes, describe.”
- “Has a medical professional ever expressed concern to you about your child’s weight? If yes, describe.”
- “Indicate age, gender, weight, height of children and adolescents with weight concerns.”

For the parent or guardian, the health indicator came from asking the person’s weight and height and then calculating the body mass index (BMI). A BMI of less than 18.5 is underweight, 18.5-24.9 is normal weight, 25-29.9 is overweight, and 30 or over is obese.

Analysis

The interviews produced data that could be coded and analyzed qualitatively and with basic descriptive statistics. The researchers coded the data as they were collected and reviewed both the observation notes and interview data for emerging patterns and themes in the observations and participant responses. The researchers also discussed their impressions of the space and sought insight on their observations from members of the communities. The interview data were also entered into a spreadsheet program to facilitate the identification of patterns. Several photographs were taken to document further the observations of the parks and the neighborhoods. These were reviewed by the researchers for both the items present and expected items that were not present. The photographs were also useful for recording changing use and the conditions in the parks across seasons.

Findings

Goal #1: To determine if there is a relationship between a community’s health status indicators, crime rates, and child and adolescent use of public parks.

Some community data are indicated in Table 1. For all 4 communities, the leading cause of death was heart disease, followed by cancer. In both Alief and Northside/Northline, other significant causes of premature death for the general population were accidents and homicide; in Eldridge/West Oaks, other significant causes of death were accidents; and in Sunnyside, other leading causes of death were accidents and HIV/AIDS. The pattern

of poverty, violence, and type 2 diabetes mellitus rates in 3 areas appeared positive and direct. (The type 2 diabetes mellitus rate for Eldridge/West Oaks was not available). These Houston data are in keeping with the literature that indicates that common predictors of health disparities (such as poverty, low school achievement, and location) also predict high crime rates.

Table 1. Community Census Data, 1999-2003

Community Data	Alief	Eldridge/West Oaks	Sunnyside	Northside/Northline
Population 2000 Census	98,002	39,994	18,920	54,676
Blacks	28%	14%	93%	7%
Hispanics	32%	16%	4%	74%
Asians	23%	16%	2%	1%
Whites	17%	54%	1%	18%
Foreign-born	40%	27%	4%	36%
Not in workforce	40%	25%	60%	53%
Education beyond high school	50%	79%	30%	18%
% below poverty rate	<20%	6%	40%	25%
Type 2 diabetes mellitus rate	23.6/100,000	Not indicated	59.9/100,000	37/100,000
Violent crime rate	9.6/1,000	4.9/1,000	22.7/1,000	17.3/1,000

This study's data indicate that health status varied in the 4 communities and that these differences were largely reflective of the socioeconomics of the community residents and the resources available in those communities. Indeed, socioeconomics were indicative of the presence of negative health status indicators and the local crime rate. Having at least 2 adult caregivers in a home was used as a proxy measure of socioeconomic status. There was a significant relationship between having at least 2 caregivers in a home and BMI χ^2 (2, N=93) =

5.555, $p < .062$ in that, at least two caregivers indicate a lower BMI. With disparate negative health indicators were more reports or sightings of persons smoking in the park spaces. For example, a number of adults were observed smoking and being intoxicated in Sunnyside parks on weekends. Possibly the park is one of the few places where these persons might be allowed to smoke.

Those interviewed repeatedly reported that most of the local crimes in the white and Asian communities were by youths, largely teenagers. Only in the black community were crimes attributed to another group—drug addicts. Parents and guardians in Sunnyside in particular reported that concerns about public intoxication, drug addicts, and child sex offenders meant that they limited their children's use of the public parks; however, they did not think that this was the case for all children. They reported that children were often in the parks without adult supervision. The researchers' observations of the public parks in Sunnyside support these reports. However, if the intoxicated persons in the spaces, were not strangers, the adults were less concerned about their children being in the parks. Overall, a concern about criminal victimization had a greater inhibiting effect on use of the parks than did signs of disorder in Sunnyside. In specific sections of Alief and Eldridge/West Oaks, the sound of gunfire at night was the most inhibiting factor in the use of the parks.

Goal #2: To determine if there is a relationship between perceptions of the physical and social environment around the parks and child and adolescent use of the parks.

There were stark disparities in the amount of play equipment available for young children across the communities. In short, Alief and Eldridge/West Oaks had more play station areas and equipment for young children (often 2 to 3 play station areas) while parks in Sunnyside commonly had 1 play station area. The Alief and Eldridge/West Oaks parks were also better maintained, with maintenance crews spotted more frequently during the week. Parks in the former two neighborhoods were also more likely to have restrooms available while Sunnyside parks in particular had port-o-potties in the parking lots. Some residents refused to go near the port-o-potties out of concern about their sanitation. One woman at a Sunnyside Park was overheard saying that she would “never go near one of those

things.” Functional water fountains were more likely in Alief and Eldridge/West Oaks. These communities also appeared to have more allergy-friendly trees (trees without much windblown pollen) and adequate parking near the play station areas. In Sunnyside parks, there appeared to be heavy weekend use but no prompt maintenance. Thus, flies, bees, mosquitoes, graffiti, and overflowing garbage were not uncommon sights, especially during summer. One resident stated that the port-o-potties, were to deter homeless persons from inhabiting the space (possibly given the lack of running water and heat). Overall, most parks had considerable use, even though the facilities and maintenance were not equal.

It was beyond the scope of this study to contact the Parks and Recreation Department for details on its upkeep practices. The aim here was to observe the parks and to talk to persons in the spaces. Thus, the researchers cannot say how many park employees were assigned to each space. However, they can say that, in 1 year of observation at Sunnyside, they did not see maintenance staff; in addition, the Sunnyside parks were the most likely to have poor maintenance. On the other hand, maintenance crews were observed in Alief and Eldridge/West Oaks, and at least 1 maintenance worker in Northside/Northline was typical. Security in the form of a police car in the parking lot was a consistent evening sight in Alief and Eldridge/West Oaks parks. In Sunnyside and Northside/Northline, it appeared that officers were too busy (seen and heard driving by quickly) with more pressing matters than monitoring the parks. The Parks and Recreation Department did not appear to offer any organized activities for youth in the areas observed. However, a few community groups that involved some cost for participation used the spaces. The researchers observed only organized soccer leagues for children. In Sunnyside, there was a young adult baseball club.

As others have found,^{17,18} contextual elements such as the availability of leisure time, recreational spaces, work schedules, perceptions of safety, and weather were all relevant to the extent of persons’ use of the parks and, relatedly, the extent to which the children and adolescents in their charge were permitted to use these spaces. Some women spoke of feeling too tired or not being in a positive state emotionally to venture into the parks. It is possible that economic and/or personal struggles kept some persons indoors.

Table 2. Percentage of Affirmative Responses That Specific Situations Inhibit Use of a Community Park

Community	Weather	Gangs	Crime	Rowdy/ noisy people	Dim lighting	Lack of security	Dangerous- looking surround- ings
Alief	77%	23%	28%	28%	49%	39%	26%
Eldridge/ West Oaks	48%	18%	18%	15%	24%	21%	27%
Sunnyside	71%	35%	41%	53%	59%	65%	71%
Northside/ Northline	23%	* —	* —	* —	* —	* —	* — *Omitted: Data not collected consistently.

From the Hispanic respondents, circumstances inhibiting use of the parks included not having time (17%) and lacking transportation (10%). In Sunnyside, not having time or energy to take children to the park was also mentioned as inhibiting use of the parks. There seemed to be a class effect involved in that those in the Alief and Eldridge/West Oaks area who reported more consistent exercise were also more likely to have some education beyond high school as well as another caregiver in the family (usually a spouse). Thus, in the latter communities, the reports indicated that parents or guardians of children were more likely to have someone with the energy, motivation, time, and in some cases, transportation to get the children to the park. These persons included healthy grandparents with leisure time. In Sunnyside, many grandparents encountered in the parks were in their 40s and still busy with work schedules. In contrast, Eldridge/West Oaks grandparents were older and healthier, with the leisure time to escort children to the park.

Alief

Forty-nine percent of the Alief respondents had lived in the community at least 5 years; 80% had lived there at least 1 year. The average age of respondents was 37; excluding a pregnant woman, the average weight of those interviewed was 148 pounds. Sixty-seven percent of the respondents were born outside of the United States. The modal Asian country was Vietnam (30%), followed by China (15%). Twenty-seven

respondents (69%) indicated being parents, and most had no more than 2 children. Forty-four percent of the respondents were males. Only 54% of the respondents self-identified as Asian, although more appeared Asian. Their jobs were largely those of the working class (e.g., machinist and bookkeeper) with a few professionals (e.g., social worker, nurse) and students. The Alief respondents were the most educated of those from the 4 communities, with 51% reporting post-secondary education. Sixty-two percent reported working at least an 8-hour day. Eighteen percent (7) were overweight, and another 13% (5) were obese. Twenty-seven percent of these respondents indicated that their weight had a negative effect on their health, but only 10% described one of their children as overweight.

The neighborhood was a mix of houses, town houses and apartments—ranging from low-income to middle-class in appearance. Fifty-four percent reported that there was a homeowners' association in their neighborhood, while others responded that they did not know what existed. Seventy-four percent described the neighborhood as friendly, 56% said persons in the community were helpful, and 36% reported knowing their neighbors by name.

From provided etic codes, the most commonly affirmed signs of disorder in the Alief park areas were concerns about traffic (46%), frequent stray dogs and/or cats (36%), loud noises (31%), and large groups of people hanging out (26%) (see Table 3). Nevertheless, 80% reported feeling safe in the parks during daylight hours, but 39% said that they would not feel safe there after dark. Eighteen persons (46%) expressed concern about their child's safety in the parks. Park use tended to include playing soccer, bike riding, running, walking, kite flying, fishing, barbecuing, picture taking, exercising, playing in the child play station areas, and family picnicking. The researchers' observations are in keeping with these reports.

Sixty-two percent of the respondents reported regular physical activity for at least 30 minutes at least twice per week. Commonly, this was at home, on the streets near home, at a gym, or in the park. Consistency varied based on the weather or personal circumstances such as being too tired. There were reports of gangs in bordering communities to the southwest side and overall a mild concern about crime (less than that expressed in Sunnyside).

Eldridge/West Oaks

Forty-four percent of those interviewed had lived in the community at least 5 years; the respondents had an average age of 37 years. This was not a totally ethnically homogeneous group. Fifty-nine percent were born in the United States. The others were from Jordan, Nepal, Egypt, Pakistan, China, Taiwan, India, Mexico, Colombia, Venezuela, and Canada. Several Indians were observed using the parks, but these persons refused to be interviewed. Sixty-eight percent of those interviewed were parents or guardians with 2 as the modal number of children (compared to Alief and Sunnyside where the mode was 1; in Northside/Northline the mode was 3 children). This group had the highest number of professionals (persons with a university degree), with individuals working in areas such as engineering, finance, and medicine. Indeed, the respondents described other persons in the community as professionals, expatriates, engineers, and business persons of the middle and upper classes.

Respondents said that the homes were a mix of houses, apartments and town houses—ranging from low-income apartments inhabited largely by blacks and Hispanics next to luxury apartments and upper-middle-class houses, many of which were in gated communities. Indeed, much of the living area near Ray Miller Park, in particular, appeared costly and well maintained. Most respondents said that there were homeowners' associations. The area has experienced substantial growth and commercialization in the past 2 decades. Unlike respondents in other communities such as Sunnyside, most Eldridge/West Oaks respondents affirmed the presence of security (largely constable [law enforcement] patrol); this was described as contributing to their sense of safety. Fifty-three percent described the neighborhood residents as friendly, and 50% said that persons in the community were helpful; only 38% reported knowing their neighbors by name.

Forty-seven percent had more than an 8-hour workday. Sixty-five percent had another adult caregiver in the home. The average weight of the persons interviewed was 169 pounds; this was close to the Northside/Northline average (165), more than Alief (148), but less than Sunnyside (196). Eleven (32%) were overweight, and 6 (18%) were obese. Thus, half of those interviewed in an Eldridge/West Oaks park had

an unhealthy BMI. Only 4 persons reported having a child with a weight problem.

From provided etic codes, the most commonly affirmed signs of disorder in the Eldridge/West Oaks park areas as identified by the respondents were people hanging out (27%) and loud noises (27%). The researchers' observations of the spaces confirmed what was said in the interviews. The Eldridge/West Oak parks—Ray Miller and George Bush—were clean and well maintained all year. Ray Miller had 2 child play station areas and clean restrooms. George Bush had no play stations and no restrooms, but restrooms were available at nearby businesses. Ninety-four percent of the resident respondents reported feeling safe in the parks during daylight hours, and 85% felt safe after dark. There were reports of concerns about crime from “persons to the left”—an area with less affluent housing and more ethnic diversity. When asked who committed offenses in the area, the consistent response was young people (juveniles). Eighty-two percent were satisfied with the neighborhood's appearance, and 77% were satisfied with the park that they were using. Thirty-five percent expressed traffic concerns. Less than a quarter (18%) had concerns about gangs in the area. Forty-seven percent expressed no difference in their concern about the safety of boys and girls.

Half of those interviewed in Ray Miller Park described exercising for at least a half hour at least once per week in the park. Similarly, the modal response regarding their child's use of the space was “occasional”; children's uses included playing in the play station areas and riding their toddler-type toys. Adolescents observed in the spaces were usually hanging out—picnicking and/or listening to music. These adolescents were usually whites, Asians, or Africans. These adolescents could be loud at times in their conversations. For the most part, this park was heavily used but well maintained: it was clean despite the heavy use. There was almost always a constable (law enforcement officer) in the parking lot when the park was busiest. Residents described this as welcomed security. Some complained that parking could be difficult to find on weekends. The single most commonly reported inhibitor of the use of the public parks in Eldridge/West Oaks was not crime or disorder but the weather.

Sunnyside

Seventy percent of the respondents had lived in the community for at least 15 years. Their average age was 34 years, and the average weight of respondents was 196 pounds. Five (29%) were obese, and 8 (47%) were overweight. This was the largest weight average of all 4 communities. Sunnyside respondents were all born in the United States. These findings appear typical of many traditionally black communities. As Sampson's work indicates,²¹ unlike other ethnicities, African American blacks (the descendants of persons who were slaves in the United States) are less likely to relocate over their lifetimes than members of other racial or ethnic groups. Those interviewed described the area as one with largely blue collar workers and senior citizens. Few were unemployed. Those with jobs were largely working class or slightly above. All had some employment that did not require a university degree, although a third mentioned having some college credits. Two-thirds had an 8- to 9-hour workday, but only 41% had another caregiver in the home. Sunnyside's type 2 diabetes mellitus rate was 59.9 per 1,000 persons for 1999 to 2000, per census data²².

The neighborhood was a mix of modest houses and apartments, with residents reporting that there were no homeowners' associations in the area. Residents mentioned that recent revitalization efforts in the community brought newer, nicer apartments. Seventy-one percent described the neighborhood as friendly, 53% said persons in the neighborhood were helpful, and 88% reported knowing their neighbors by name.

From provided etic codes, the most commonly affirmed signs of disorder in Sunnyside were loud noises (88%), large groups of people hanging out (82%), a high number of stray dogs and cats (82%), and public drinking (77%) (see Table 3). The respondents all reported feeling safe in the parks during daylight hours, but 24% said that they would not feel safe there after dark. Although these residents had concerns about possible victimization, they had been in the community for years. From their familiarity with community members and the environment came a sense of security with a recognized need for vigilance. During the interviews, a concern about fights in the park was mentioned by a third of

the respondents—but these incidents, they said, usually happened after dark when they would not be in the space. Eight persons (47%) expressed concern about their child's safety in the parks. In Sunnyside, the interviews revealed narratives of specific concern about sexual predators. Persons were more concerned about boys or girls depending on who the victim was in cases about which they had information. Most respondents (88%), however, indicated no difference in concern for either boys or girls. Thus, their children's use of the public space ranged from occasional to often, to access the children's play stations.

Adolescent boys were more likely to use the space, particularly the basketball court. Adolescent girls were less likely to be in any of the Sunnyside parks. When present, they were usually watching an infant or looking after a child at play. At other times, girls were in the company of teenage boys listening to music. Indeed, the park spaces were not very enticing to adolescent girls, though swimming seemed to attract these girls at Sunnyside Park during the summer. Reported park use tended to include basketball, football, Little League baseball, youth softball, and family picnics.

When asked about the outdoor physical activity of their children and/or adolescents, the most commonly reported activities were basketball (91%) and walking (63%). Only half of the respondents (50%) reported regular physical activity for 30 minutes to 2 hours at least twice per week. Commonly, this was at home or in the park, but consistency varied based on the weather—too hot, too cold, and/or raining. Other factors that contributed to lack of physical activity were being too tired or simply not feeling inclined to exercise.

There were reports of Bloods and Crips gangs in the community, and 41% of the respondents reported a fear of crime (largely property crime) in the park area, attributed to homeless, drug-addicted persons. In addition, as automobile traffic increases, walking tends to decrease.²³ While many parks had some sidewalk spaces, most of the areas in this study were next to busy highways or roads.

The researchers' observations validated these reports of the parks' and communities's conditions. Familiarity with the area and its residents, however, seemed to make area residents more at ease than the researchers were while in the spaces. The loud noises, unsupervised

youth, public alcohol consumption and evident intoxication, lack of adequate seating, restrooms (other than port-o-potties), an abundance of flies and bees, and overflowing weekend garbage engendered a flight response in the researchers.

Northside/Northline

The Northside/Northline participants were all Hispanics, mostly foreign-born (80%), 63% of whom were from Mexico and 17% from Honduras. The average weight of respondents was 165 pounds (which was more than Alief, but less than those in Sunnyside and Eldridge/West Oaks). Their time in the community ranged from 1 year to 32 years, with an average of 8.2 years. Participants ranged in age from 23 to 58, with an average age of 36 years. Seventy-seven percent of the respondents were parents, and 57% were females. Their labor was largely in working class positions, such as mechanics, cooks, domestics, and landscapers. Only 17% reported having a college degree. Across the 4 communities, Northside/Northline respondents reported the longest work days. Slightly more than half worked at least 10-hour days. Slightly more than half of these persons (53%) also had another caregiver in the home who worked at least 8 hours per day. Markedly, 16 (53%) of the respondents in the community were overweight, and another 7 (23%) were obese. Eleven (37%) reported that their weight had a negative effect on their health; a third of the respondents indicated having an overweight child and having had a physician express concern about the child's weight.

Seventy-three percent of the respondents reported being satisfied with the neighborhood's appearance, and 70% said they were satisfied with the park where they were interviewed. The neighborhood had a mix of houses and apartments. Forty-three percent of the respondents stated that there were homeowners' associations in the area, and 80% said that security was also present. Eighty-three percent described the people in the community as friendly, and 67% described them as helpful. Only 53%, however, claimed to know their neighbors by name. Thirty percent reported some fear or concern about crime. While 77% said they felt safe in the community at various times of day and night, 70% expressed concern about the safety of their children. Their children largely used the

parks to play, run, and play soccer on an occasional to frequent basis. Sixty-seven percent of respondents reported occasional or sporadic exercise; those with a spouse described a similar pattern of activity for the spouse. Similarly, 67% of the respondents claimed to encourage their children to be physically active, and 50% said that the school encouraged physical activity. Given widespread concerns about Hispanic obesity, the researchers did not expect to see the volume of Hispanics that they did in parks exercising. The negative, however, was the choice and volume of high-calorie, processed foods that many Hispanics grilled and consumed regularly in the parks.

Table 3. Reports of Signs of Disorder Across Communities

Reported Disorder	Alief N=39	Eldridge/West Oaks N=34	Sunnyside N=17	Northside/ Northline N=30
Vandalism	14 (36%)	6 (18%)	11 (65%)	Not indicated
Graffiti	11 (28%)	3 (9%)	8 (47%)	Not indicated
People hanging out	10 (26%)	9 (27%)	14 (82%)	Not indicated
Public drinking	5 (13%)	2 (6%)	13 (77%)	Not indicated
Loud noises	12 (31%)	9 (27%)	15 (88%)	Not indicated
Frequent large groups (of 5 or more people)	11 (28%)	(18%)	12 (71%)	Not indicated
Trash in area lots	12 (31%)	4 (12%)	12 (71%)	Not indicated
Public fights	4 (10%)	1 (3%)	5 (29%)	Not indicated
Frequent stray dogs and/or cats	14 (36%)	2 (6%)	14 (82%)	Not indicated
Traffic	18 (46%)	12 (35%)	6 (35%)	8 (27%)
Gangs	7 (18%)	6 (18%)	10 (59%)	14 (47%)

Goal #3: To generate policy recommendations that encourage and maintain child and adolescent outdoor physical activity in the areas studied.

Policy Recommendations

The findings indicate that the lives of parents, their activity level, socio-economic status, health and perceptions of park safety all influence the extent to which they and their children use the park spaces. For adolescents, the park spaces appeared less appealing to girls. The findings indicate a need to educate parents to model healthy activity levels, to make parks more appealing to adolescent girls, to address disparities in park equipment and facilities, to continue to expose adolescents to physical activity in schools and a need to revise Texas' definition of "playground".

a) Educate parents to model healthy activity levels.

Younger children are usually eager to visit a park to play, but the adults need to escort them, and thus the adults' lives need attention. When the adults were asked about their history of physical activity, up to age 12 and during adolescence, the most common physical activities were walking and, for some running. Other activities included swimming, karate, jumping rope, hacky sack, marching, dodgeball, table tennis, and badminton in Alief; swimming, sailing, dancing, kickball, volleyball, table tennis, waterskiing, skiing, horseback riding, and cricket in Eldridge/West Oaks; dance and cheerleading in Sunnyside and running and soccer in Northside/Northline. Having adults maintain substantive physical activity is important because modeling healthy behaviors for their children is among the most effective ways of communicating healthy living. As persons age, lifestyle demands often make setting aside time for exercise challenging. Given that the health benefits of movement become so important with age, on a micro-level persons should be reminded of the value of exercise and offered support to engage in it. Both children and their parents should be aware of health indicators such as BMI.

Table 4. Parent/Guardian Reports of Activities as a Child (Until age 12)

Communi- ty	Walk- ing	Jogging/ Running/ Track	Cycl- ing	Skating/ Skate- board-ing	Soccer	Foot- ball	Basket- ball	Soft- ball/ Base- ball	Ten- nis	Oth- -er
Alief	77%	56%	69%	26%	33%	13%	31%	18%	23	26

(N=39)									%	%
Eldridge/ West Oaks (N=34)	82%	56%	59%	41%	32%	18%	44%	35%	24 %	41 %
Sunny- side (N=17)	88%	53%	65%	53%	18%	35%	53%	53%	6% %	24 %
Northside/ Northline N=30	40%	43%	30%	23%	33%	23%	23%	23%	23 %	-

Table 5. Parent Reports of Activities as an Adolescent

Communi-ty	Walk-ing	Jogging/Running / Track	Cycl-ing	Skating/Skate-Board-ing	Soccer	Foot-ball	Basket-ball	Soft-ball/Base-ball	Tenn-is	Oth-er
Alief (N=39)	69%	56%	56%	28%	31%	18%	39%	26%	31%	26%
Eldridge/ West Oaks (N=34)	85%	68%	50%	21%	35%	18%	44%	27%	27%	24%
Sunny-side (N=17)	77%	35%	65%	35%	6%	12%	53%	29%	6%	24%
Northside / Northline N=30	47%	80%	37%	37%	47%	37%	37%	37%	37%	—

b) Make park spaces more appealing for adolescent girls.

The results of this study are consistent with those of Singh, Siahpush and Kogan,²⁴ who found that neighborhood socioeconomic conditions and “built environments” are related to the odds of childhood obesity, especially for girls. While the parks are commonly outfitted for sports that appeal to boys (e.g., basketball and baseball), there is little to garner the attention of adolescent girls. The Parks and Recreation Department might consider more soccer facilities, tennis courts, and spaces for skating and skateboarding because the adult females in this study indicated retrospectively that when they were youth these outdoor physical activities appealed to them (see Table 5).

c) Address disparities in park equipment and facilities.

In the low-income areas such as Sunnyside, parks tend to have just 1 play station area. The disparity in available park equipment and restroom facilities needs to be addressed. Regarding the restrooms, until the perceived crack-cocaine dependent homelessness concerns are addressed, police patrol might improve the residents’ sense of safety.

d) Improve the exposure to physical activity for adolescents in schools.

In this study, parents or guardians were asked, “To what extent is outdoor physical activity encouraged at your child’s and/or adolescent’s school?” The responses indicate that parents/guardians perceive that there is room

for improvement in the extent to which schools encourage physical activity. Schools are where children and adolescents spend a substantial amount of their waking hours. Thus, they represent an opportunity to both teach and advocate fitness in terms of diet and exercise. Schools can also counter a deficit in knowledge and exposure by parents regarding healthy behaviors. With improved education, there is improvement in health behaviors. This study corroborates this finding.

e) Revise Texas HB 2467, HSC 481.034 (A) (3) regarding the definition of “playground.”

This law, passed in 2010, defines a “playground” for the purposes of enforcing laws against offenders in drug-free zones as requiring 3 or more play station areas. While the intent may have been to exclude small suburban neighborhood areas, it also excludes parks in communities where dangerous activities are quite likely given disparities in the number of play station areas.

Conclusions

Despite signs of disorder and disparities in maintenance, communities with poor health status indicators and high crime rates had considerable child and adolescent male use of the public park spaces for fairly vigorous physical activity. Nevertheless, a concern about criminal victimization had a greater inhibiting effect than did signs of disorder in Sunnyside. Also, for some blacks interviewed in Sunnyside, adults’ mental and/or physical exhaustion meant that children did not go to the parks as often as they liked because they would not be escorted. It appeared that in Asian and Hispanic communities there was more likely to be extended family to escort children to the parks. In white communities, this person was more likely to be a spouse than extended family. Overall, the disparities all seem tied to economics. Indeed, perceptions of the physical and social environment and child and adolescent health seem to reflect the economics of the areas and not a lack of resident willingness to use the public parks whatever the parks’ conditions.

In specific sections of Alief and Eldridge/West Oaks, the sound of gunfire at night was most inhibiting regarding the use of the parks. While official police statistics indicate that crime was particularly high in the

Northside/Northline community area, for the mostly Mexican respondents in the Hispanic community, crime was not a pressing concern. As Sampson²¹ found in Chicago, crime rates, especially violence rates, are among the lowest for recent immigrants and, in particular, Mexican Americans. Possibly, Mexican Americans have such little faith in law enforcement given their experiences with Mexican police that, as a group, they are less likely to report victimizations.

Overall, there were more young children (approximately 8 years old and younger) using the park spaces, especially the child play station areas, and running about than there were adolescents. Adolescents were more likely to be picnicking, watching others, talking, and listening to music. When they were active, it was more likely to be adolescent boys playing basketball, softball, baseball (for blacks), or soccer (for Hispanics); there were insignificant trends for white males (that is, very few white adolescent males were observed in the selected parks). The researchers suspect that some white male youth might be in organized school sports in locations other than the public parks.

Limitations of the Study and Recommendations for Future Studies

As is common in science, this study has limitations. One is that the effort is largely qualitative and as such reflects certain researcher subjectivities. Nevertheless, the researchers maintained reflexive journals in the field to monitor themselves as instruments and to be as unbiased as possible in their conclusions. They entered the field using a constructivist paradigmatic lens in attempting to understand the circumstances under observation. Another limitation is that persons interviewed do not reflect a random sample. Indeed, most of the respondents were interviewed in parks; thus, the data do not capture the opinions of those who do not choose to use the outdoor spaces under observation. Also, health status indicators and the exposure to outdoor physical activities in schools were self-reported. There may have been some social desirability effect in reporting weight, although this did not appear evident because self-reports of weights and those of children who were available appeared to have face validity. Given these limitations, the effort is exploratory but insightful.

Future studies should include interviews of key informants such as the park commissioner, other government and city officials, and the park

maintenance crews. These persons could offer insights on apparent disparities in the provision of park facilities and their upkeep. Future studies might include more interviews of persons in the communities who are not using the park spaces for their perspectives on crime and disorder in the community. Future efforts might also use a more structured observation schedule that covers the spaces over a 24-hour period. In the current study, observations were limited to 7:00 a.m. to 9:30 p.m. and were inconsistent through the 4 seasons, given researchers' changing work schedules. Neighborhood observations might also be done in pairs that include a community outsider and, on occasion, a community insider. The latter could readily offer insights and clarification on the observations, bringing an etic and emic balance to the interpretation of the observation data. It would also be beneficial to involve persons who speak a variety of Asian languages so that national differences in approaches to exercise might be captured. In the current effort, there was only a Chinese Mandarin translator and a Spanish translator available.

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