

No Child Left Inside
*The Built Environment and Caregiver Strategies
to Promote Child Physical Activity*

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Abstract

In this study, 13 low-income African American caregivers of preschoolers were interviewed to explore neighborhood obstacles to children's physical activity and the strategies caregivers used against these challenges. Built environment barriers included social and physical disorder, crime and violence, speeding traffic, and stray dogs. Recreational settings were few, inaccessible, and poorly equipped and maintained. In addition to high facility fees and few organized activities, recreational settings had high levels of disorder and violence. Despite barriers, caregivers used strategies to promote physical activity, including environmental appraisal, boundary enforcement, chaperonage, collective supervision, and local and extra-local resource-brokering. These findings document how caregivers' strategies represent intervening processes in response to the built environment. The findings further provide place- and asset-based recommendations.

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Introduction

Increasingly, researchers have focused on the built environment and its impact on child-youth physical activity (Jackson, 2003; Sallis & Glanz, 2006). For children and youth, physical activity, including leisure time physical activity, has been associated with a range of social, psychological, developmental, and physical health benefits, including its role in promoting healthy weight (Gordon-Larsen, Nelson, Page, & Popkin, 2006; Sener, Copperman, Pendyala, & Bhat, 2008; Witt & Crompton, 2003). Research documents that rates of child physical activity have declined for all age groups (Brownson, Boehmer, & Luke, 2005; Hinkley, Crawford, Salmon, Okely, & Hesketh, 2008) and that children and youth are not achieving recommended levels of physical activity (Adams, 2006; Brownson et al., 2005; Hudson, 2008; Sener et al., 2008; Troiano et al., 2005). This is especially true among African American children-youth in inner-city neighborhoods (Pratt, Macera, & Blanton, 1999). Low rates of physical activity have been found as early as the preschool years (Oliver, Schofield, & Kolt, 2007; Pate, McIver, Dowda, Brown, & Addy, 2008). Some studies have observed that minority preschool children living in inner-city neighborhoods have lower levels of physical activity, relative to their European American peers in more affluent settings due to neighborhood barriers and, as a result, experience more developmental and health problems, including obesity (Hudson et al., 2008; Martin & McCaughtry, 2008; Turner & Hagin, 2007).

The built environment plays a critical role in physical activity for young children (Sandercock, Angus, & Barton, 2010; Salois, 2012), especially for outdoor activity. As literature reviews of studies with diverse populations document, time spent outdoors is strongly associated with being physically active for preschool age children (Sallis, Prochaska, & Taylor, 2000). For preschoolers, outdoor play is the main source of physical activity, and can allow children to meet the daily recommended physical activity requirements (Cosco, 2007).

Researchers focusing on inner-city neighborhoods have identified correlates of the neighborhood context and correlates of recreational settings that influence African American child-youth physical activity. At the neighborhood level, levels of social and physical disorder, crime and safety (Franzini et al., 2009; Lopez & Hynes, 2006), traffic (Gielen et al., 2004; Olvera et al., 2012; Rao, Hawkins, & Guyer, 1997), and unattended dogs (Griffin, Wilson, Wilcox, Buck, & Ainsworth, 2008; Olvera et al., 2012) have been associated with child-youth physical activity. For recreational settings, availability (Davison & Lawson, 2006; Roemmich et al., 2006), access (Estabrooks, Lee, & Gyurcsik, 2003; Henderson et al., 2001; Kacyzinski & Henderson, 2007; Rich et al., 2005), facility equipment and maintenance (Cradock et al., 2005; Loukaitou-Sideris, & Stieglitz, 2002; Tester & Baker, 2009), and facility safety (Cohen et al., 2007; Loukaitou-Sideris, & Sideris 2010; Sallis et al., 2000) are important components of the built environment that impact child-youth physical activity.

Parents' impact on child-youth physical activity has been considered in studies of the built environment (Gomez, Johnson, Selva, & Sallis, 2004; Hinkley et al., 2008; Weir, Etelson, & Brand, 2006). In particular, research on neighborhood and facility safety suggests that the built environment impacts child-youth physical activity indirectly through parents', mostly mothers', regulation of children's and teens' activities (Carver, Timperio, & Crawford, 2008). In neighborhoods that are perceived as dangerous or unsafe, parents limited their children and teens' engagement in outdoor physical activities (Gielen et al., 2004; Gomez et al., 2004; Hinkley et al., 2008; Molnar, Gortmaker, Bull, & Buka, 2004; Weir et al., 2006). Parental monitoring efforts were stronger for girls, relative to boys (Carver et al., 2008; Gomez et al., 2004).

Several strengths characterize the current literature. Researchers from multiple disciplines (Jackson, 2003; Srinivasan, O'Fallon, & Dearth, 2003), including leisure study scholars (Dunst, Hamby, & Snyder, 2009; Rehman et al., 2003; Shinew et al., 2006), are engaged in critical research to understand the relationship between the built environment and physical activity. Ecologically-based studies move beyond individual factors to discern how the built environment impacts child-youth physical activity (Jackson, 2003). Further, current cross-sectional research provides important insights on the relationship between key correlates of neighborhood context and physical activity (Burdette & Whitaker, 2005; Kaczynski & Henderson, 2007; Sallis et al., 2000).

However, the existing literature has key limitations. Relatively little research on physical activity (Hinkley et al., 2008; Hodges, Smith, Tidwell, & Berry, 2012; Hume, 2005; Sener et al., 2008), including leisure time physical activity (Floyd, Bocarro, & Thompson, 2008; Sener et al., 2008; Sylvia & Baldwin, 2003), and the built environment focuses on preschoolers, despite the importance of this stage for later physical activity outcomes (Burnet et al., 2007; Dunst et al., 2009; Hodges et al., 2012). Conflicting findings across studies limit the robustness of conclusions on the relationship between the built environment and child physical activity. Further, most researchers have focused on restrictive parenting strategies, giving little attention to parenting efforts that promote child physical activity (Carver et al., 2008; Gomez et al., 2004; Weir et al., 2006). Moreover, there has been little systematic attention to the intervening processes that parenting activities represent (Srinivasan et al., 2003). Thus, more small scale qualitative research is needed to provide guidance to large-scale experimental and longitudinal research (Burdette & Whitaker, 2005; Floyd et al., 2008), and to identify unobserved correlates.

Building on previous research, we use qualitative neighborhood observations and interviews with low-income, African American female caregivers of preschoolers to better elucidate characteristics of the built environment in inner-city neighborhoods. We also identify the strategies that caregivers use to manage child physical activity within the context of inner-city neighborhoods. We argue that caregivers can and do actively facilitate child physical activity, despite multiple barriers in the built environment.

Literature Review

Multiple literatures provide insights on child physical activity, neighborhood and facilities correlates of the built environment and parenting practices in response to the built environment.

Child Physical Activity

Preschool-aged children are often perceived to be highly physically active, and previous studies have shown that 3- to 5-year-olds are more physically active than children in older age groups (Pate et al., 2008). Estimates vary on the amount of time preschoolers should be active. Some experts suggest that children ages three to five should engage in moderate to vigorous physical activity for at least 60 minutes per day (Department of Health, Physical Activity, Health Improvement and Prevention, 2004). Other experts suggest that preschoolers should be active outdoors for several hours each day (Cosco, 2007). More specifically, The Council on Sports Medicine and Fitness of the American Academy of Pediatrics (AAP) recommends that preschool age children should take part in unstructured free play with an emphasis on running, tumbling, throwing, and catching (Cosco, 2007).

No prevalence data exist on preschoolers' physical activity levels, and empirical studies have presented inconsistent findings on levels of physical activity among preschoolers (Oliver et al., 2007). However, review studies have documented two consistent findings. Boys were more

active than girls (Hinkley et al., 2008; Oliver et al., 2007), and children who spent more time outdoors were more active than children who spent less time outdoors (Hinkley et al., 2008). Further, young children, especially African American preschoolers, are not achieving recommended levels of physical activity (Hudson, 2008). One of the consequences of low levels of child physical activity has been the rising rates of obesity and overweight among preschoolers, which disproportionately affect low-income and minority children (Hudson, 2008; Mei et al., 1998; Turner & Hagin, 2007).

Neighborhood Correlates

Neighborhood disorder, crime, and safety. Researchers focusing on neighborhood disorder have theorized that *social* incivilities (e.g. drug dealers, gang activity, prostitutes, drunks, loitering, and misbehaving groups of youth and adults) and *physical* incivilities (litter; trash; graffiti; and vacant, burned out, abandoned or boarded up buildings) increase residents' perceptions of the neighborhood as unsafe, promote crime, and decrease engagement in outdoor activities (Franzini et al., 2007; Lopez & Hynes 2006; Sampson, 2001). Empirical evidence suggests a relationship between race-ethnicity, socioeconomic status (SES), and neighborhood disorder. In a study of St. Louis neighborhoods, Kelly, Schootman, Baker, Barnidge, and Lemes (2007) found that predominantly African American block groups and block groups with the highest poverty rates were 12 and 21 times, respectively, more likely to be characterized by observable signs of physical disorder.

Researchers have examined parental perceptions of neighborhood safety and child physical activity, often including a focus on child overweight and obesity. Burdette and Whitaker (2004) explored crime rates (number of serious crimes, emergency 911 police calls), physical activity, and overweight with a sample of predominantly Black, low-income children aged 36-59 months in Cincinnati. They found no clear trend pointing to an inverse correlation between neighborhood safety and overweight. The researchers hypothesized that parental perceptions of neighborhood safety, not actual levels of crimes, were critical in parental decisions to use children's playgrounds.

In a cross sectional survey of 20 large cities that included low-income and African American parents of 3-year-olds, researchers examined neighborhood safety (social incivilities), outdoor play, and obesity (Burdette et al., 2005). The researchers found that mothers with higher incomes, more education, and who were White were more likely to rate their neighborhoods as being safe. Mothers' perceptions of the neighborhood as unsafe were not associated with decreases in outdoor child play activity.

Lumeng, Appugliese, Cabral, Bradley, and Zuckerman (2006) examined neighborhood safety and child overweight with a longitudinal sample of 1,364 families from diverse ethnic-racial groups in 10 U.S. sites. Children were assessed at ages four-and-a-half and seven. Parental perceptions of lower neighborhood safety were associated with African American race and lower maternal education. Perceptions of the neighborhood as unsafe were independently associated with an increased risk of children being overweight at age seven. The researchers hypothesized that maternal perceptions of neighborhood safety influenced parental decisions about children's outdoor physical activities.

A few studies that specifically focus on child obesity and neighborhood context do not specifically measure physical activity in their studies, but hypothesize that the underlying mechanism accounting for obesity and overweight is associated with limited physical activity opportunities in unsafe low-income and minority communities (Miranda, Edwards, Anthopolos, Dolinsky, & Kemper, 2012; Rich et al., 2005; Salois, 2012). Rich et al. (2005) focused on primarily

Hispanic overweight children ages 14-17 months whose mothers utilized a WIC program in Dallas, Texas. Eighty-two percent of the mothers indicated having a safe place for their children to play. Almost half (48%) of these mothers indicated the safe place was inside the home, and not outdoors in the larger neighborhood.

Salois's (2012) racially-ethnically diverse study of low-income children, aged 2-4, used county level data from all 3,107 counties in the U.S., and found higher rates of obesity to be associated with criminal activity as measured by the official crime rate. A 10% increase in criminal activity was associated with a 1.5% increase in childhood obesity in metropolitan counties, and 1.1% increase in non-metropolitan counties. Salois concluded that unsafe neighborhood conditions precluded children's engagement in physical activity.

Miranda, Edwards, Anthopolos, Dolinsky, and Kemper (2012) studied primarily Black and low-income children between the ages of 2 and 18 living in urban neighborhoods in North Carolina. Adjusting for race, age, sex and insurance status, they reported that higher levels of neighborhood violent crime, total crime, and physical incivilities were associated with greater risk of being above normal weight. The researchers concluded that parents were uncomfortable letting children be active outdoors because of unsafe neighborhood conditions.

Traffic. There is a paucity of studies on road safety and child physical activity in the neighborhood (Carver et al., 2008), especially for preschool age children. Yet, nationally, many young children are at risk for being injured by cars/trucks during neighborhood play or walking (DeFrancesco, et al., 2003). Epidemiological data indicate that for children living in urban areas, high traffic volumes, fast traffic speed, and poverty are factors that increase the risk of pedestrian injuries (DeFrancesco et al., 2003; Schieber & Vegega, 2002).

Research on traffic documents that child traffic exposure and parental traffic concerns are higher in low-income and minority communities (Gielen et al., 2004; Olvera et al., 2012; Rao et al., 1997). Rao et al. (1997) documented disparities in traffic exposure using a sample of Baltimore children between the ages of five to nine. Neighborhood and parental SES varied. Researchers found that children "living in poorer neighborhoods were more likely to be exposed to greater amounts of traffic (p. 77)." In another Baltimore study, researchers selected urban neighborhoods that varied by income and child pedestrian injury risks (Gielen et al., 2004). In low-income neighborhoods, two-thirds of parents with children in kindergarten through fifth grade thought that it was likely that a child would be hit by a car in their neighborhood. This contrasts with 50% of the parents in high-income neighborhoods.

Olvera et al. (2012) focused on Hispanic parents raising children (mean age 10) in an impoverished inner-city Houston neighborhood. Authors noted that the neighborhood had "several crash hot spots" where multiple traffic accidents were concentrated. When asked about safety risks, cars going too fast and too much traffic were mothers' two highest neighborhood safety concerns. In a comparative study of parents of children aged 5-10 who lived in urban inner-city neighborhoods and suburban communities in New York, Weir et al. (2006) examined parents' traffic concerns for their children. Sixty percent of the low-income, predominantly Hispanic parents from the inner-city neighborhoods expressed concern with the traffic volume in their neighborhoods. In contrast, only 27% of the largely White and middle-class suburban parents were concerned with traffic.

Stray dogs. Studies of neighborhood safety have identified dogs as safety hazards that may impact physical activity in urban neighborhoods (Carver et al., 2007; Olvera et al., 2012). Empirical research has focused on older children and adults, though it is likely that parental concerns with older children may extend to younger children as well. Olvera et al. (2012) explored neigh-

neighborhood factors impacting child activity. In the survey study previously described, children were also asked about neighborhood safety risks. For children, the top neighborhood safety concerns were strangers and stray dogs.

Focusing on adults, Griffin, Wilson, Wilcox, Buck, and Ainsworth (2008) explored influences on physical activity in a “disadvantaged” African American community. The focus group study conducted primarily with women in a suburban southeastern community focused on environmental barriers to physical activity. Informants asserted that they could not walk in the neighborhood because of stray dogs. Also focusing on adults, Wilson, Kirtland, Ainsworth, and Addy (2004) explored environmental factors impacting physical activity with an economically diverse sample in a southeastern county in the U.S. Low-income census tracts were predominantly African American. Thirty-nine percent of the low SES group reported that unattended dogs in the neighborhood were a “big” problem, compared to 28.2% of the high SES groups. Unattended dogs were one of the factors that discouraged residents from meeting recommendations for outdoor physical activity.

Facilities Correlates

Facility availability. The availability of play space, including parks and recreational facilities, is a key correlate of physical activity for children (Burdette & Whitaker, 2005; Floyd et al., 2011; Carver et al., 2008). Researchers have focused on parks and recreational settings because they are critical locations for children to be physically active through free play or through formal recreational activities (Carver et al., 2008; Bedimo-Rung, Mowen, & Cohen, 2005). Although Davison and Lawson’s (2006) review of studies that assessed associations between the physical environment and physical activity noted the limited number of studies on preschool children, they concluded that there was a positive correlation between children’s participation in physical activity and the publicly provided recreational infrastructure.

Roemmich et al. (2006) included an urban sample of children aged 4-7 (32 boys and 27 girls) in New York to test the association between the availability of parks, playgrounds, recreational facilities and child physical activity. They found that greater numbers of park and recreation areas in the neighborhood were associated with higher physical activity levels for both girls and boys. They concluded that neighborhood parks are critical in providing children with physical activity opportunities. Salois’s (2012) study of children aged 2-4 found that the density of recreational facilities was not significantly associated with obesity. These data suggest that it is not only the hypothesized lack of available facilities that decrease opportunities for physical activity, but other factors (e.g., food environment, crime) that account for obesity.

Research documents racial and social class disparities in the availability of neighborhood parks and recreational venues (Estabrooks et al., 2003; Gordon-Larsen et al., 2006). In a longitudinal study (Gordon-Larsen et al., 2006) with a nationally representative sample that included Hispanic and Black teens, the researchers reported that higher SES block groups were more likely to have one or more recreational facilities. In contrast, low SES and high minority block groups were less likely to have facilities, which was associated with decreased physical activity.

Similar findings were reported in a study of a small Midwestern city that included high, medium, and low SES neighborhoods (Estabrooks et al., 2003). The researchers found that low-SES and medium-SES neighborhoods had significantly fewer resources than high-SES neighborhoods. Using census data and observational data on community-level physical activity-related settings in 209 nationally representative communities, Powell, Slater, and Chaloupka (2004) also found that physical activity resources, such as parks, green spaces, and public pools were associated with race-ethnicity, and SES. Communities with larger proportions of minorities,

including African Americans, were associated with fewer activity settings. In contrast, lower poverty rates and higher median household income were associated with increasing levels of physical activity settings.

Access. Although few studies of preschoolers were available, review studies have documented that program/facility access was one of the few variables consistently and significantly associated with children's physical activity (Sallis et al., 2000). According to Kaczynski and Henderson (2007), the most robust finding was the positive association between the proximity of parks and recreational venues and physical activity. In one of the few studies specifically focused on access with a sample of young children, Rich et al. (2005) explored play activities of overweight children, aged 14-17 months using in-depth interviews. The multiethnic sample included low-income mothers from a Dallas WIC program. Eighteen percent of parents reported no playgrounds near their home, whereas 71% reported having a nearby playground or park that their children could use. Parents without access had significantly fewer active play activities for their children to engage in.

In a predominantly low-income African American sample of Cincinnati parents of children (36 -59 months), researchers explored child obesity and proximity of family households to playgrounds (Burdette & Whitaker, 2004). They found no significant correlation between child obesity and distance to the nearest playground. There were no differences between overweight and non-overweight children who lived in neighborhoods lacking playgrounds. The researchers noted that they did not examine the availability of alternative play locations for children nor variations in the quality of neighborhood playgrounds, including levels of cleanliness and equipment condition.

Other evidence relevant to minority and inner-city communities comes from studies of older children. Focusing on obesity, researchers using national longitudinal data on ethnically diverse teens explored obesity and park access (Gordon-Larsen et al., 2006). The researchers concluded that inequalities existed in access to parks, and that lower SES and high minority block groups had the least access to facilities. Relatedly, limited facility access was associated with decreased physical activity and increased overweight among adolescents.

Cohen (2007) conducted a study of eight public urban Southern California parks that served low-income African American and Latino communities. A key finding from the interviews with local adults was that people visited the parks more often when they lived closer. Forty-three percent of park users lived within a quarter of a mile, 21% lived between a quarter and a half mile, and only 13% lived more than a mile away.

There is some evidence that, in addition to physical access to physical activity venues, cost of physical activities at recreational settings is a factor influencing access to physical activity settings among low-income and minority communities. Henderson et al. (2001) conducted focus group interviews with adults, including African Americans and low-income participants from a Southeastern city. The predominantly female sample identified cost as a "significant barrier" to physical activity settings such as the YMCA for lower income people.

Estabrooks et al.'s (2003) study of a Midwestern city with high, medium, and low SES neighborhoods further suggests the importance of cost as an accessibility barrier. Low and medium SES neighborhoods had significantly less of "free-for-use" resources. They concluded that individuals from lower SES neighborhoods may have less control over their physical activity options due to inaccessibility. Similarly, Romero (2005) investigated factors that impacted low-income Hispanic teens' physical activity in a mid-size city in the Southwest. Cost was identified as a barrier to physical activity. Over half of teens said that their parents would not pay facilities fees. Al-

though most local facilities were free, 30 to 40% of teens believed they were not free, potentially missing an opportunity to be physically active.

Facilities maintenance and programming. Researchers have found that parks and playgrounds used by low-income minority children and youth were poorly maintained and less clean, and had more broken and unsafe play equipment than suburban venues, which affected facilities use (Cradock et al., 2005; Loukaitou-Sideris & Stieglitz, 2002). In their study of 155 playgrounds in Boston, researchers assessed the safety features of local playground equipment (Cradock et al., 2005). Researchers found that, on average, public playgrounds for outdoor play tended to be less safe where greater proportions of youth were living in poverty. Moreover, on average, safety scores were lower for playgrounds in areas with a larger proportion of Black residents, independent of SES.

Focusing on children at 50 inner-city parks and 50 suburban parks in Los Angeles serving largely Hispanic populations, researchers found that across all parks, well-maintained and clean facilities attracted more children to local parks, relative to those parks that were unkempt (Loukaitou-Sideris & Sideris, 2010). Tester and Baker (2009) conducted a study of two intervention parks in San Francisco in “resource poor” neighborhoods and a control park to explore the impact of renovations (e.g., new turf, fencing, landscaping, lighting) on visitation levels of children using the parks. Observations of intervention playfields revealed increased visits by children of both genders from baseline to follow up. At baseline, a total of 28 children visited the two intervention playfields. In the follow up those numbers increased to 199 and 261, respectively. There were no significant increases at the control park.

Facility maintenance (e.g., level of cleanliness) was not always associated with levels of park usage and physical activity (Loukaitou-Sideris, & Stieglitz 2002). Observational, interview, and survey data of children (aged 7-14) revealed that Los Angeles Valley Parks serving more diverse and affluent children were cleaner, better maintained, and had “inviting” landscaping. In contrast, inner-city parks that served primarily low-income Hispanic children had lower levels of cleanliness and equipment maintenance, and had a landscape that included dead grass and fewer trees. Despite lower park quality, the researchers found that inner-city children were more dependent on local parks for outdoor recreation and play than their suburban peers because they lacked backyards or private play spaces to play.

Additionally, Cohen et al. (2010) found that other urban park and recreational amenities impacted park usage. Researchers examined factors related to adult park use in a racially-ethnically and SES diverse sample in Southern California. They found that number of organized activities was associated with park use. These findings were also documented in a study of Los Angeles parks in inner-city and suburban neighborhoods (Loukaitou-Sideris & Sideris, 2010). Researchers reported that facilities with organized sports and recreational activities encouraged middle school children to use the park.

Facilities safety. Despite limited number of studies focusing specifically on preschool children, in a review of the literature, Sallis and Glanz (2006) concluded that access to safe places for physical activity were more likely to promote physical activity. Loukaitou-Sideris and Sideris (2010) explored the factors that encouraged children (aged 10-13) to use parks. Surveys and observations of ethnically-racially diverse parents and children using inner-city and suburban parks revealed that many of the children in their sample made little use parks, in part, due to concerns about safety. When asked if they considered the local park safe, parental responses varied among inner-city (44.5%) and suburban (34%) parents. Due to concerns with crime, 75% of both inner-city and suburban parents did not allow their children to use the parks without

adult supervision. Farley et al. (2007) studied two low-income neighborhoods in New Orleans that were predominantly African American to examine the impact of a safe, supervised school yard for children to engage in non-directed play. They reported that with the implementation of supervised play, there was an 84% increase in the total number of children in the play area who were physically active. They concluded that lack of safety may be a deterrent to child physical activity that can be addressed with supervised and safe play spaces.

Not all studies have found an association between perceptions of park safety and park use in low-income neighborhoods. Cohen et al.'s (2007) study of eight Southern California public parks that served low-income African American and Latino communities found that 75% of park users felt safe. For two parks with the lowest percentage of households in poverty, 98% of respondents reported feeling safe. In contrast, in neighborhoods with over 40% of households in poverty, the percentage of respondents feeling safe ranged from 50-75%. While the researchers concluded that perceptions of facilities safety did not predict facility use, they also noted that their sample was small, unlike studies that found an association.

In a related study that included diverse racial-ethnic communities in Southern California with differing SES levels, Cohen and her collaborators (2010) found similar findings. They surveyed 51 park directors, 4,257 park users and local residents. Observations of adults and children were also conducted in 30 parks. They found no correlation between park use and residents' perceptions of park safety. They noted that findings were limited by the relatively small numbers of parks observed and the small sample size that only detected large effect sizes.

Parenting and the built environment. Parents' impact on child-youth physical activity has been considered in studies of the built environment (Gomez et al., 2004; Hinkley, Crawford, Salmon, Okely, & Hesketh, 2008; Weir et al., 2006). In particular, research on neighborhood and facility safety suggests that the built environment impacts child physical activity through parents' regulation of children and teens' activities (Gomez et al., 2004). In their review of studies of neighborhood safety and its impact on child-youth physical activity, Carver et al. (2008) suggest that parents who perceive their children to be at risk engage in "defensive" behaviors to protect their children.

Evidence for restrictive parenting practices in response to various neighborhood dangers comes from studies of school age children, in part, reflecting the greater mobility of older children (Carver et al, 2008; Weir et al., 2006). In their study with parents of kindergarteners through fifth graders in economically diverse Baltimore neighborhoods, Gielen et al. (2004) reported that 73% of the overall sample said they limited children's play area because of unsafe cars and trucks. In the low-income neighborhoods, 70% of parents limited children's play area because of drugs and violence. Weir et al. (2006) provided similar findings. Inner-city children participated in less physical activity than their suburban peers with mean activity scores of 2.8 (1.8) and 3.4 (1.4) for inner-city and suburban children, respectively. Most inner-city residents focused on child safety concerns such as community security, drugs and prostitution, whereas suburban parents focused on weather. Based on their cross sectional data, the authors concluded that safety concerns led parents to restrict their children's outdoor activities.

Gomez et al.'s (2004) study of low-income Mexican American seventh graders' outdoor physical activity and neighborhood safety found that girls spent less time in outdoor physical activities compared to boys, highlighting gender variations in parental restrictive practices. They hypothesized that girls spent less time in outdoor physical activities and were shielded in the home because of parents' perceptions that girls were more vulnerable in public spaces. In contrast, boys were believed to be able to manage neighborhood dangers and parents granted boys more freedom to engage in outdoor physical activities.

In summary, the literature review identifies key neighborhood and facilities correlates of child-youth physical activity. There is more robust and consistent evidence for some correlates, whereas the evidence for other correlates is more contradictory due, in part, to differences in study samples, measures, and procedures (Foster & Giles-Corti, 2008; Hodges et al., 2012; Sandercock et al., 2010). Detailed research on preschool age, and/or African American children is limited and reflects inconsistent findings. Some insights on the relationship between the built environment and child physical activity come from studies in urban settings with slightly older school age children or other minority group children.

Methods

Research Focus and Theoretical Framework

The data derived from a study that examined how African American women and their families living in one low-income community in Chicago cope with individual and neighborhood impoverishment. As part of the larger study, we explored patterns of children's physical activity. For this article, we focused on two questions:

1. What do caregivers perceive as neighborhood barriers to their children's physical activity?
2. How do caregivers address barriers to children's physical activities?

A family resilience framework guided the research (Walsh, 2002). Focusing on the family as a group, the family resilience framework considers how the family unit collectively works together to survive and thrive, despite various forms of adversity. Family strengths, as opposed to deficits, are highlighted with particular attention given to family agency in using existing resources to promote the well-being of its members. The strategies and resources that families utilize, in part, reflect the developmental needs of its members. Further, family resilience theory posits that family processes are embedded within larger ecological contexts, such as neighborhoods that afford both opportunities and constraints that families must address. This framework allowed us to focus on the active coping efforts utilized by caregivers of young children to address neighborhood barriers to child physical activities.

Methodological Approach

An interpretive approach was adopted to capture the daily lived experiences of participants and the meanings that women gave to those experiences (Tesch, 1990). Qualitative methodologies allowed us to study participants within the context of neighborhoods, emphasizing person-context interactions. This approach helped us to understand caregivers' perceptions of the neighborhood, and the meanings and motivations behind the strategies used in response to neighborhood conditions. Family resilience theory guided the methodological approach by providing theoretical constructs (e.g. coping, agency) and sensitizing concepts (e.g. parental management) that guided data collection (interview probes on strengths) and analyses (management codes) (Patton, 1990).

Setting

The study took place in the inner-city Lincoln Heights community (pseudonym). According to the 2005-2009 American Community Survey, there were a total of 14,900 housing units in Lincoln Heights, and about 25% of these units were vacant (United States Census Bureau, 2010a). According to 2010 Census data, the median family income was \$25,583 in the almost exclusively African American (97.8%) Lincoln Heights community (US Census Bureau, 2010b).

The percentage of families that lived below the poverty line was 43.23%, and 29.8% of the population 16 years of age and older were unemployed (U.S. Census Bureau 2010c). Seventy-one percent of households with children under age 18 were headed by females (U.S. Census Bureau 2010b). Lincoln Heights had one of the city's highest crime rates, with 4,245 crimes committed in 2010 (Chicago Police Department, 2011).

Sampling

We focus on female caregivers because they are the primary managers of young children's daily lives. In their gatekeeping role, they are responsible for making decisions concerning children's physical and play activities (Dunst et al., 2009; Grigsby-Toussaint, Chi, & Fiese, 2011; O'Neil, Parker & McDowell, 2001), either prohibiting or facilitating opportunities for activity (Beets & Foley, 2008).

Women who met the following criteria were recruited: 1) identified as African American; 2) were at least 18 years of age; 3) had a household income at or lower than 185% of the Federal Poverty Level; 4) had at least one target child between the ages of 0 to 4; and 5) resided in a high poverty neighborhood in Chicago. Thirteen caregivers (mothers, grandmothers, siblings) with children who participated in a Head Start program were recruited for participation. Thirteen participants allowed us to achieve saturation (Guest, Bunce, & Johnson, 2006). Pseudonyms were used for all caregivers in the study.

Caregivers ranged in age from 18 to 58. The oldest participants were grandmothers (N=2) in their early and late 50s and the youngest participant, age 18, was a sibling caregiver. In nine households, caregivers were never-married. One caregiver was divorced, one was widowed, and two caregivers were married. Household composition entailed two cohabitating units, two female-headed households with children, and nine extended kin units. Households included one to nine children. Five caregivers were employed. Two caregivers had bachelor's degree and two had some college education. Five caregivers had high school or equivalency degrees, and four had some or no high school education. The mean residential tenure at current address in the neighborhood was 12.4 years.

Data Collection

Data collection consisted of interviews, photo documents, and neighborhood observations.

Interviews. Between the fall of 2008 and the spring of 2009, an African American female research assistant conducted two interviews with each participant. The interviewer had conducted research at the site for several years. An interview-guide approach (Patton, 1990), comprised of topically-oriented and open-ended questions, was used. Each interview lasted one-and-a-half to two hours, and was conducted in caregivers' homes or at the preschool site. We asked about the target child's physical activities within and outside the local community, and facilitators and barriers to child physical activity.

Photo documents. Participants were given disposable cameras and invited to take photographs that reflected their family life and the locations where activities took place. Once the photos were developed, the research assistant asked caregivers to describe each picture individually during a third photo elicitation interview session (Harper, 2002). Of the 13 caregivers who participated in the interviews, 11 produced photo documents. Participants received a \$10.00 grocery store gift card for each of the three interviews.

Neighborhood observations. To supplement caregivers' descriptions of Lincoln Heights in the interviews and photographs, we used the neighborhood drive-through (windshield survey) to enrich our understanding of the neighborhood context. The neighborhood drive-through

entails using a list of theoretically and empirically-informed neighborhood categories to observe while driving (Caughy, O'Campo, & Patterson, 2001; Franzini et al., 2009; Spencer, McDermott, Burton, & Kochman, 1997). We used the following categories to guide our observations: characteristics of the physical setting, including streets and traffic, thoroughfares, housing stock, housing density, maintenance and upkeep of housing, surrounding institutions and locations (e.g., stores, churches); characteristics of residents (e.g., age, gender); and street activity (e.g., walking, sitting outdoors). The neighborhood drive-through was completed by the principal investigator and a trained graduate research assistant. As one team member drove, the other member wrote field notes reflecting their discussion of the categories. The pair drove through the larger neighborhood, with particular focus on each caregiver's block.

Data Analysis and Integration

The interviews were audiotaped and transcribed verbatim. N-Vivo was used to facilitate the coding process. An inductive approach that focused on meanings and social processes guided our analyses (Lofland & Lofland, 1995). Initial, a priori codes related to the built environment (e.g., access, availability, traffic, safety) and management strategies (e.g., parenting practices) derived from the substantive literatures informing the study, and served as sensitizing concepts (Patton, 1990). A constant comparison between caregivers' accounts and the sensitizing concepts ensured that conceptual categories reflected caregivers' experiences. New codes also emerged, and included environmental appraisal and boundary enforcement.

Matrix data displays were used to organize the data in summary form and facilitate interpretation. We used tables with separate columns with each caregiver's responses on a particular theme (Charmaz, 1983; Miles & Huberman, 1994). This strategy made it possible to identify patterns within the data, including similarities and differences between caregivers. Similarly, we used data displays to aid in our analysis of the photos. For each set of photographs, matrix tables were prepared that identified the location, activity, and people in each photo. The photo elicitation interviews were then analyzed using codes developed from the in-depth interviews. Photo and interview data were organized thematically and comparisons were made between families. Data from the photo elicitation interview were also compared to data from the in-depth interviews. The observational data provided additional data to supplement caregivers' accounts of the neighborhood.

Results

Correlates of the Built Environment: The Neighborhood Context

Neighborhood-level barriers to child physical activity caregivers described included 1) neighborhood disorder, 2) crime and violence, 3) traffic, and 4) stray dogs.

Neighborhood disorder. Caregivers identified neighborhood physical and social disorder (incivilities) as constraints to children's outdoor activities. Physical signs of disorder were especially visible in the neighborhood. All of the caregivers lived on blocks with abandoned houses or vacant lots. Researcher observations identified over 60 abandoned buildings and vacant lots across the 13 caregiver blocks. Caregivers had first-hand knowledge of the dangers of abandoned buildings. In a photo, Kenya described being approached by a predator as she walked past an abandoned building: "A week ago I was walkin' through the alley....A man was comin' out of there with his clothes pulled off...tellin' me to come here. So I ran."

Caregivers' knowledge of the dangers of abandoned building impacted children's outdoor mobility as Karah reported: "[When I looked for housing] I had to make sure there weren't too

many vacant apartments, houses and lots and stuff like that 'cause I had little ones and I know they like to run around." Describing a photo, Kenya echoed other caregivers' concerns with children's outdoor mobility: "I come out my gang-way, and I run into this vacant building.... They boarded it up....I have little kids, and I refuse for my little kids to get snatched up in there."

Caregivers also focused on trash, another sign of physical disorder, and its impact on child physical activity. When we asked about those things in the neighborhood that made it difficult for her child Rachel to be physically active outdoors, Latoya responded: "Well they got garbage layin' around. Everywhere we go...glass." Dominique's comments suggested the pervasiveness of trash in the neighborhood: "Picture 11, Hudson Street, across the street from the park where Patrice plays in....It's just a lot of people be over there, and they just throw they trash down any and everywhere."

Caregivers also described elements of social disorder that characterized the local neighborhood. Shawna's account was typical:

There's like a lot of people, mostly like grown-ups, hollerin' and cursin'...and little boys tryin' to fight. I think we sat there the day we were there and looked out and there was like a fight every minute. Somebody was hollerin' and cursin' and tryin' to fight and cussin' about something.

Other caregivers' accounts point to the ubiquitous nature of social disorder in the Lincoln Heights community which made public life difficult for families in the neighborhood:

Dominique: Gang bangers...stand on the corner, talk crazy, get drunk. [You] scared for your life....Drug dealers on the corner...beatin' somebody up with a bat.

Candice: Then of course there's the drug dealin' so, you know.

Latoya: Guys that gang bang...the whole day, throughout the night.

Neighborhood crime and violence. Lincoln Heights had one of the highest crime rates in the city and much of it was violent crime. There were 21 murders and 435 aggravated batteries reported in 2010 (Chicago Police Department, 2011). Local news coverage frequently reported on murders, including the numbers of daily gunshot victims, in the area and the city's efforts to address them. All of the caregivers worried about neighborhood violence. Concerns with safety in the midst of violence hampered outdoor activity for adults and children. For example, Kenya reported: "It's hard for me to go outside when you turn around and these people out here dying, gettin' kilt [killed] over the violence. The little violence make it hard for a person to do somethin'."

Keisha further reported on neighborhood criminal activity and violence that informed her choices about child outdoor activity:

It's been a lot of shooting going on in different areas and for some odd reason I don't know why it's happening. The shootings going on and a lot of people are getting murdered....I'm not sure if there was 21 people that got killed....I don't feel that it's safe.

Aisha summarized how neighborhood violence constrained outdoor activity: "It's a lot of violence around here...that makes it hard for children to go outside sometimes."

Traffic. All participants lived on residential blocks, away from major thoroughfares. Yet some caregivers said traffic was a barrier to child physical activity. For Yvette, outdoor play exposed children to dangerous traffic: "I feel like that's wrong because either you don't want your kids to hang out on the street all day and get hit by cars and everythin' else." Karah said: "I just

need somewhere for them to go play so they can have fun without worrying about getting ran over by a car and stuff like that.” Claudia worried about speeding traffic: “These cars, they run stop signs....That’s one thing that’s makin’ it hard [to play outdoors]....I don’t want Justin to try to go and get his ball one day, and one of these cars just come.”

Candice identified reckless drivers and the need for speed barriers to protect children on her block: “Well it’s mostly the young boys [that] drive fast in the street. Now we got a petition and we got speed humps on the block. ‘Cause it is a block...where you got a lot of kids.”

Not all caregivers worried about traffic. Tracy’s different experience reflected her street layout: “Our particular block is a cul-de-sac. So that makes it easier and I think safer for Crystal to play. There’s not a lot of traffic. Usually the traffic is local....So there’s no running through.”

Stray dogs. A few caregivers expressed concerns about unattended dogs. When asked about barriers to children’s outdoor physical activity, Claudia replied: “The dogs, the stray dogs.” Candice said the neighborhood “have a lot of stray dogs. It’s only two particular dogs, and they have a tendency to chase you. It seems like they pop up from nowhere!” In a photo interview Latoya reported that a pit bull guarded an abandoned building and threatened her children:

It’s like a dog that protect the building for no one don’t come in and break in....Some-time the dog be out on the backyard and then my kids walk past, he’ll bark or chase them. Rachel almost got bit by that dog.

Caregivers’ concerns about attacks by dogs were warranted as Karah’s account indicates: “I’m concerned [about] the dogs, stray dogs, runnin’ around chasin’ my babies....When they was goin’ to the store the dog was chasin’ ‘em, and my oldest son ran ‘em off.”

Correlates of the Built Environment: Recreational Settings

Caregivers described correlates of recreational venues that hampered children’s physical activity. These entailed 1) availability, 2) access, 3) maintenance, and 4) violence and disorder.

Availability. All of our caregivers reported that the neighborhood had few institutional resources that promoted children’s physical activities. According to Yvette, “Lincoln Heights don’t have...no type of nothin’ for kids”. Ayana and Tracy reported on the availability of specific resources:

Ayana: None that I know of....I don’t know any community centers.

Tracy: There are no programs....There are no Ys [YMCA’s].

Caregivers like Latoya and Claudia expressed strong feelings about inadequate resources:

Latoya: When you see that they need more....I feel kinda’ mad about it, kinda’ sad about it, ‘cause it’s a lot of little kids and they be wantin’ to play...and there don’t be a lot of room.

Claudia: I don’t really like that because I feel every neighborhood should have a place where kids...should have somewhere to go and enjoy the self.

Yet, caregivers had ideas of what types of resources should be available:

Keisha: They need to have programs in the community for younger children which still would help with the fitness, ‘cause if they could get started at a younger age, then that would help a lot.

Ayana: [Kids should have an] exercise group or somethin’, maybe 30 minutes or so.

Access. Caregivers reported having limited access to high-quality parks and play areas. Keisha said: “You can go to the Park District...and that’s not nearby”. Candice’s response was similar: “We don’t have a nearby YMCA.” For Kenya “decent” parks were inconveniently located: “The park we got to go [to is] all the way on Kraft Street.” The park was over a mile away.

Some caregivers raised the issue of transportation and access to recreational venues.

Tracy: The community centers are not close and you have to drive [there].

Karah: That [park] is far. I probably have to get on the bus with them. It’s a nice little park, but it’s just a little too far. By the time they make it they’ll be tired and want to come home.

Financial costs limited child physical activity in some recreational settings and represented another access barrier. Keisha said: “There’s not one [YMCA] here on this side of town...where people could go and pay the fees based on your income.” Candice could not afford the summer park program that was “within driving distance”:

For a person on a fixed income, you can’t do it ‘cause we went up there to register the kids and I think they wanted \$200....Even though it’s a nice program, if you got four kids, how can you afford [it]?

Maintenance. Some caregivers specifically discussed the disarray at local parks and play areas. Three caregivers reported on the inadequate and poorly maintained equipment:

Kenya: [The park is] really horrible....This park right [here] don’t even have no swings....They don’t barely have a decent park for the kids to go play.

One park I drove past, Felicia cried and fussed. She wanted to go so bad, and half the swings are turned upside down.

Keisha: The equipment is not appropriate....The jungle gyms are still too big. The climbing little poles, they can’t reach ‘um, and if the swings are broke or been taken off the hooks, then you don’t even have that.

Shawna noted how litter strewn vacant lots were lost play spaces for children:

Across from where we stay, there’s like a big ole’ lot. You know how kids can go over there and play ball and this and that? Well our kids can’t do that. It’s like bottles over there and garbage and trash...just full of trash and garbage.

Park violence and disorder. All of the caregivers expressed concerns about personal safety in local parks. Safety concerns were discussed in terms of social disorder (incivilities) and violence. Some caregivers like Ayana focused on social incivilities. She worried about what her daughter was exposed to at local parks:

Most playgrounds the guys sellin’ drugs somewhere, and if she don’t know what’s goin’ on, sooner or later, Felicia’s goin’ to figure it out....This scene is not right.

Kenya detailed how violence in the parks kept kids away from park resources: “The whole summer it’s been nothing but shootin’. Like in the summer, if they had a park...why [can’t] the kids go play in it with the sprinklers?...We had to turn on the fire hydrant for the kids.” Aisha described the violence and social incivilities that visitors experienced at the local parks:

The gang activity...and the violence and you gotta' worry about if they gonna' harass you or say somethin' to you. And they don't care if the kids right there....In the park, [boys] harassing girls, talking mannish in the park....Cursin' and grabbin' on they self. And...[talking about] the girl [body] parts.

The lack of recreational activities was the cause of youth misbehavior. Kenya expressed a widely shared view: "Maybe if they had...the Boys & Girls Club, the little center goin' on, I think all these kids would be nice, wouldn't be out hangin' out on the streets selling drugs, havin' guns." Claudia agreed: "Children in this neighborhood, all that's on their mind is fightin' because there's nothin' else to do....They need a lot of things in this neighborhood to keep these kids motivated."

Caregiver Management Strategies

Children were active despite neighborhood barriers. Caregivers identified six physical activities that children were involved in. These entailed ball activities, bicycle riding, games, free play, skating, and rope jumping. Additionally, swimming, ice-skating, ballet, and tap dancing were mentioned. The strategies caregivers used to promote child physical activity entailed 1) environmental appraisal, 2) boundary enforcement, 3) chaperonage, 4) collective monitoring, 5) local resource-brokering, and 6) extra-local resource-brokering.

Environmental appraisal. All caregivers assessed the local neighborhood and recreational settings to gauge their level of safety or danger. Relatedly, they decided if and when children could play outdoors. For example, caregivers assessed neighborhood temporal rhythms. Early daytime was viewed as a relatively safe period for outdoor activities according to Tracy: "I would say that they're [parks] fairly safe during the day." Candice provided a contrasting appraisal of the evening hours, as well as the dangerous condition of a local vacant lot: "We got a few lots where the grass is real high. You don't want the kids out there at night because somebody might get snatched." For Keisha summer weekends were particularly volatile: "It's getting warm now. So [residents] will start appearing out there....A lot of people are getting murdered, especially over the weekend". Claudia noted safe times for children's outdoor play: "It is a quiet neighborhood from time to time....It's not a lot of shootin' around here. You don't have a lot of people that bother you....They can stay outside and play." Some mothers were attuned to behaviors that signaled outdoor danger:

Claudia: Fist fighting and sometimes they tends to use weapons....So I don't want my children seeing that. So, I take them in the house when I see that's happening.

Aisha: As soon as I see everybody...doin' the bad stuff, I just take them in the house.

Keisha was wary of crowds at parks: "If you drive up [to a park], and you see that crowd up there, instead of getting out of the car you just keep right on driving 'cause you don't want to be in the cross fire." Crowds in front of her building worried Aisha: "If I let them play in front of the buildin', we gotta' come in the house because all the people start comin' out there bein' rude and disrespectful....So we try to go to the park instead."

Only Janice appraised her block as too dangerous for any outdoor physical activity: "It be a lot of shootin' goin' on around. So my baby don't come outside."

Boundary enforcement. Researcher observations and participant photos revealed Lincoln Heights to be a residential area primarily comprised of one- and two-story single-family homes. On some blocks there were low-rise apartment buildings. Homes were close together, sharing walkways on either side. The houses had front and back porches that overlooked yards. Back-

yards opened onto an alley that ran length-wise the block, and separated the backs of homes on adjacent blocks.

All of the caregivers set guidelines on the geographic space that children could traverse safely for physical activities and implemented these rules. Caregivers' boundaries included the front and back of the home, yards, and porches, and the adjacent alley. These spaces served as informal playgrounds for young children whose mobility could be easily controlled. According to Karah, most of her children's outdoor physical activities took place "right here in front of our gate." Shawna who lived with kin said: "We've been outside in front of my grandmother's house, but we haven't tried to go to the park or anything yet." Aisha and Tracy also used the front of their buildings for their youngsters' activities:

Aisha: I let [my children] play in front of the building.

Tracy: In the front [of the house] my granddaughter rides her bike. She skates.

A porch allowed Yvette to supervise outdoor play in front of the house: "I let my son go outside. I will sit on the porch and read [while he is outdoors]." Ayana's porch was a play area:

That little four year old of mines had me out in the cold last week playin' in the snow.... After so long, I was tryin' to convince her to come in....She said: 'Oh you can go in the house....I'll be just fine right here.' I'm not gonna' leave you on the [front] porch by yourself at eight o'clock at night.

The yard was another boundary for physical activities. Tracy reported: "In the backyard Crystal may play ball, play in the dirt. During the summer we put the swimming pool out... the plastic [kind]. It's big enough for her to get in and splash around." Kenya shared a photo of the family's yard and her children's physical activity: "In the back of my house [that] picture... is the backyard....You could see my little kids, my kids' horsie, where they play at, play safe at." Claudia used her "big front yard, a big back yard" to promote Justin's physical activity: "Justin is a sports child. He likes to play baseball, basketball, football, anything with a ball....He's into outside physical play, runnin' around sports....As long as he has a yard, he's gonna' play." Candice provided a photo showing her children riding their bikes in the alley, right off of her back yard. Candice had firm rules for the alley play space: "They don't go past the alley, and you don't go past [the house] that's about four houses down....So they know the routine."

Caregivers' boundary enforcement activities reflected safety concerns. Backyards were perceived as safe and controllable spaces for children's activities:

Ayana: Safety is the main thing....If Felicia's in the back yard...the gates are chained up.

Yvette: I got a big back yard....I don't let Daniel outside the gate....I lock my back gate and my front gate.

Candice used a photo to illustrate her surveillance of back yard play activity: "That's Jordan and Kelly. They're in the back yard on the bike. I have my screen door open, so I could see them." Claudia's boundary enforcement efforts were used to address traffic dangers:

When I let Justin go out and play, I keep him around the house because [of] the cars in our neighborhood....They do not stop. So that's why I keep him in the enclosed gate... 'cause he could have got hit by a car.

Karah's yard lacked a gate and was off-limits to backyard play because of dogs: "I can't let Eddie play in the back because we don't have a back gate, and the neighbor across from us, he has a big dog back there."

Chaperonage. Twelve caregivers reported accompanying their children to physical activity locations away from home. Young children's dependence on adults made it easy to control children's visits to adult-determined physical activity settings. Karah reported: "They [preschool] got a playground....So I just take Eddie back there and let him run around and slide and stuff." Aisha had a similar pattern: "We take 'em to the park and they run around.... They play on the swing. They got a teeter-totter....And they got a jungle gym thingy and they climb on that."

Chaperoning children's play activity was part of a larger pattern of child chaperonage:

Shawna: [I] walk up here [to the school] to get my kids....I have to walk once to get Nikki. Then I gotta' come back at four [o'clock] to get my son.

Dominique: We walks home every day. I stay a couple of houses up from the center. So I come and pick Patrice up from school. She walk, she plays, laugh.

Keeping children safe was at the heart of caregivers' chaperoning activities at local parks. Aisha described how park layout could endanger children:

It's one [entrance] right on Carter Street...and the other one is on Kerr Place and you can come in on both sides....It's two entrances. So we can't let the kids go to the park by theyself. You never know if somebody might come and snatch your kid....I don't think it's safe for that.

Candice suggested that chaperoning was expected for young children: "If the kids are there [in the park], the parents are there. Very few, very seldom you see a group of small children there on their own. You know the parents are always in hollering distance." However, Yvette highlighted the intensity of caregivers' chaperoning activities in dangerous neighborhoods: "If you not with your momma, you don't leave this [back yard] for nothing....Daniel can't go out that gate for nothin', unless I'm out there...walkin' him down the street."

Although chaperonage is expected by all parents of young children, caregiver supervisory efforts were especially heightened in light of the perceived (and real) dangers of the Lincoln Heights neighborhood. Yvette provided an example of the extraordinary dangers faced by children (both boys and girls) in the neighborhood:

I got girls. They getting snatched. I stay down the street and I still comes and pick my kids up from school everyday....The neighborhood is just so bad....If Daniel ain't goin out with me, he ain't goin out with nobody.

Collective monitoring. Six caregivers relied on trusted non-family adults to help supervise children's outdoor physical activities. Caregivers using collective monitoring lived longer at their current address (mean of 15.16 years), compared to caregivers who did not use collective monitoring (mean of 10.04 years). Supportive neighboring relations were facilitated by housing tenure, low density housing, and the close proximity of the housing stock. Candice, who had lived on her block over 20 years, said of her neighbors: "They're pretty good, everybody works together, 'specially with the kids." Shawna, who has lived on the block for almost three decades, offered a similar account: "Everybody knows everybody. So it's like easy to just come out, no problems, not worrying about what's going happen to your kid when they come outside."

Caregiver accounts like Candice's suggested the physical ease of child surveillance when housing was close together, shared sidewalks, and had front windows that faced the streets:

“Neighbors usually watch out for each other’s kids. We don’t like for the kids to go too far from the house, and if they see them, they’ll tell them to get back home or they’ll call.”

Latoya’s comments pointed to the role of long-term residents and surveillance promoted by street-facing porches: “Well it’s a lot of elderly peoples on the block....They’ll be on they porch and if Rachel’s doin’ somethin’ wrong, they’ll let me know and I’ll go check on her.”

Local resource-brokering. Resource-brokering entailed the identification and use of good quality local physical activity resources. Despite caregivers’ initial statements about limited resources in Lincoln Heights, probing on their children’s specific activities uncovered local resources. Twelve caregivers used public parks and play areas. Nine caregivers used non-school parks and play areas, while three caregivers only used the school playground. Five caregivers used both the school playground and other public settings.

When we asked caregivers about resources, they identified the school playground. Tracy said: “Certainly the playground at the preschool. [It] is in walking distance.” Janice reported: “Only the preschool park, right here....It’s closer to home.” Kenya said: “I take Marcus up here to the school park and let him ride his bike and play his ball.” Karah monitored Eddie’s play at the school park from her front porch:

It’s easy for him to live across the street from the school and they got a playground....I get to the point of lettin’ him go to the park with his little friend and he’ll come back home....I be on the porch, and he’ll call me from off the porch to tell me come cross him across the street.

Caregivers used nearby play areas. Dominique said: “I take Patrice to Vernon Park every day. It’s on the next block from my house.” Candice stated: “[I take Kelly to] Ms. Ruthie’s Park, the one a couple of blocks over.” Similarly, Latoya took Rachel to “the [park on] Jones Boulevard.” The park was located four blocks from the family’s home. Some of these small recreational settings were located between residences, thereby providing opportunities for informal surveillance and enhanced safety.

Caregivers pointed to good quality play equipment in the parks that they used. Candice reported on Ms. Ruthie’s Park: “They have swings in there and something like a sandbox and those little horses that they can ride.” Dominique’s photos of Vernon Park, another small park located a block away, included serviceable play equipment: “[That’s] Patrice and her friend kickin’ it in Vernon Park...just swingin’ up in the air.” Tracy described the equipment in one of the larger community parks: “There’s...Viburnum Park, which has the swings....Viburnum has a merry-go-round and also they have the...water spouter...and they have a pool there too.”

The local parks preferred by caregivers were also clean. Latoya reported that there was “no garbage or nothin’ in Viburnum Park.” Referring to a photo of Adams Park, Aisha explained that the park was considered “good” because “they just try to keep it clean, and they try to put new stuff in there for the kids to play with.” Candice described a clean vacant lot behind her house, now commandeered as play space: “Picture number four, it’s an empty lot. They keep it cut, and there’s no glass or paper. You can tell they keep it clean....This tree is in the lot and the kids have built a tree house there.”

The parks that caregivers used were safe. Tracy said: “I’ve never had any problem there [at Viburnum Park]. There is security at the field house.” Candice agreed: “The kids’ section [in Ms. Ruthie’s Park] is in the back and those guys usually hang out in the front...and they don’t mess with the kids.”

Only Yvette avoided local play areas: “I don’t even take my son Daniel to the park at the preschool right here....The parks just ridiculous....I don’t think it’s safe for kids, period.”

Extra-local resource-brokering. Nine caregivers' resource-brokering efforts focused on resources outside of the neighborhood, especially parks. Caregivers identified 11 physical activity settings located across 10 communities. The parks and play areas used ranged from a mile to over 40 miles from Lincoln Heights and most were in higher income communities. Caregivers used settings that were safe and had structured programs.

Focusing on safety, Shawna compared the extra-local parks she used to local parks: "All the guys were... sellin' all their drugs and everything...in the park. So I really couldn't take my kids. I had to go out of the neighborhood to...Hastings Park by the Smith Library." The park Shawna used was two-and-a-half miles away. Aisha's account was similar: "I take them mostly outside the neighborhood....They do a lot of bad stuff in [nearby parks]. So I try not to go to them parks." Aisha also located extra-local resources for Tiara in the city's cultural center 12 miles away: "We take them to the zoo, and when we're at the zoo, they walk around a lot."

Some caregivers used recreational settings that provided structured activities. Keisha took Leticia to the Stanton Center, located 16 miles away: "That's where Leticia takes swimming." Leticia also took "ballet and tap [dance]" at the center. Candice's daughter attended a city park center located two miles away: "Kelly goes to the Beacon Center...and they have things like for her age group. It's just outdoor activities." Claudia further reported: "Justin's been to Harvard Hill...[for] swimming." Harvard Hill was 40 miles away.

Some extra-local resource-seeking activities were seasonal, reflecting caregivers' efforts to keep their children active year-round. Claudia described winter activities at Western Center, 10 miles away: "I basically take him to [Western Center] in the winter time. So Justin knows how to ice-skate....So he's not...always stayin' in the neighborhood tryin' to find sometin' to do." Keisha and her kids went "to the lake front just to go out for walks and sit in the park and watch the lakes in the summer months." The lake front park was seven miles away.

Transportation affected caregivers' use of extra-local recreational settings. Ayana illustrates: "By me havin' a minivan I can pack up everything and so we takes the bike and Felicia rides the bike...[in] Lansing Park." The park was several miles away. Caregivers like Shawna used public transportation and rides from others: "I go outside of the neighborhood. So we have to get on the bus or if someone takes us we'll have to go in the car to a different park outside of the neighborhood." Lack of transportation precluded some caregivers, like Karah, from using extra-local resources: "Two years ago I had a car and I was driving us wherever, to take 'em to the beach or something like that. But now we really don't go anywhere."

Discussion

This article explored how low-income African American caregivers facilitated child physical activity in an inner-city neighborhood. Focusing on the built environment, we used qualitative data to provide first-hand accounts of ecological barriers to child physical activities, and caregiver management strategies that addressed these barriers. The study's qualitative findings on challenges to physical activity in the built environment were consistent with some quantitative studies. At the neighborhood level, disorder, crime and violence (Lumeng et al., 2006; Miranda et al., 2012; Salois, 2012), speeding traffic (Gielen et al., 2004; Olvera et al., 2012; Rao et al., 1997), and stray dogs (Olvera et al., 2012) were found. This study also documented barriers specific to physical activity settings, such as limited availability of local recreational venues (Estabrooks et al., 2003; Roemmich et al., 2006); restricted access to recreational facilities (Cohen et al., 2007; Rich et al., 2005); facilities costs (Henderson et al., 2001; Romero et al., 2001); poorly equipped and maintained facilities (Cradock et al., 2005); and disorder, crime, and violence in

parks and play areas (Loukaitous-Sideris & Sideris, 2010). However, these findings expand on cross-sectional studies of the built environment. Individual accounts allowed us to better understand participants' perspectives on the built environment and how these understandings informed their management strategies.

This study also provides insights on conflicting findings on the relationship between the built environment and child physical activity. Contrary to the expected finding that living in an unsafe neighborhood (as measured by disorder, crime and violence) is associated with lower levels of child physical activity (Miranda et al., 2012; Salois, 2012), some studies have reported that living in an unsafe neighborhood is not associated with lower levels of physical activity (Burdette et al., 2005). Current data suggest that caregivers were promoting child physical activity through alternative sites such as backyards and porches and through physical activity settings outside of the local neighborhood. Our qualitative data also suggest that caregivers may use "dangerous" parks, but use them during "safe" times. More generally, it is likely that some quantitative studies do not find an association between barriers in the built environment and child-youth physical activity because they fail to measure or inadequately measure parental promotional efforts.

Further, studies of neighborhood and facilities safety have used various measures, including objective and subjective measures of crime and violence, and subjective and observational measures of neighborhood and facilities disorder. Some studies find that objective measures (Miranda et al., 2012; Salois, 2012) are associated with and affect child physical activity, whereas other studies find that parents' subjective perspective of neighborhood and facilities safety are associated with and affect child physical activity (Burdette & Whitaker 2004; Loukaitou-Sideris & Sideris, 2010). Based on official data, the study neighborhood objectively had one of the city's highest crime rates. Based on our systematic neighborhood observations and caregivers' subjective accounts, it also had high levels of social and physical disorder. Caregivers' decisions around child physical activity were clearly affected by subjectively perceived indicators of neighborhood and facilities disorder and crime-violence. However, we hypothesize that objectively measured high crime rates were also impacting caregivers' perceptions of the neighborhood. It is likely that caregivers were aware of the high crime levels due to personal experiences, discussions with other residents, and ongoing media attention that identified the neighborhood as a "hot spot" for crime. Unlike some prior research that argues that it is the perception of neighborhood disorder and crime that influences decisions concerning child physical activity (Burdette & Whitaker 2004; Loukaitou-Sideris & Sideris, 2010), or that objective crime rates are influential factors affecting child physical activity (Miranda et al., 2012; Salois, 2012), this study suggests that both objective and subjective assessments of the neighborhood context are relevant. In this study caregivers' perceptions of neighborhood crime and violence and disorder were consonant with objective indicators.

This study provides additional substantive insights on areas of the built environment and child physical activity that have been understudied or represent unobserved areas in quantitative studies. Research on preschoolers and the built environment has been limited (Hodges et al., 2012; Hinkley et al., 2008), in part, due to children's limited exposure to the neighborhood. It is clear from this research that despite the limited independence of young children, caregivers in inner-city neighborhoods are already concerned with environmental challenges at the neighborhood and facilities levels. We hypothesize that caregiver strategies developed during the preschool years may be foundational for physical activities strategies at later stages of development. Contrary to Weir et al. (2006), we did not find gender differences in caregiver strategies. It is likely that because children are so young caregivers are equally protective of boys and girls.

We hypothesize that parenting practices for boys and girls will diverge over time and reflect how neighborhood dangers variably affect boys and girls.

Empirical examinations of the physical aspects of housing have also been limited (Foster & Giles-Corti, 2008). This study suggests how the physical proximity of housing and the design of housing, including windows, porches, and yards facilitated child physical activity. The findings also highlight how the large numbers of abandoned buildings greatly influenced caregiver decisions about child physical activity. These buildings were not only visible symbols of physical disorder and crime, but structures that impinged on children's outdoor play. Our research further highlights variability in the built environment. Along with environmental challenges, our findings suggest that inner-city neighborhoods may have, albeit in short supply, accessible, well-maintained, and safe spaces for child physical activity.

Findings from the study also add to discussions of the role of caregivers in relation to child-youth physical activities. In contrast to depictions of parenting behaviors as primarily restrictive in nature (Gomez et al., 2004; Weir et al., 2006), this study identified specific caregiver strategies used to facilitate child physical activity. Strategies included environmental appraisal, boundary enforcement, chaperoning, collective supervision, and local and extra-local resource-brokering. Strategies were both restrictive and promotional in nature, depending on caregivers' assessment of the built environment, and were intentional responses to the built environment. Environmental appraisal addressed neighborhood and facility safety concerns. In addition to personal safety issues, boundary enforcement addressed concerns with traffic and stray dogs. Although they too had an underlying focus on safety, chaperoning and collective monitoring addressed issues of outdoor mobility (violence, neighborhood disorder). Resource-brokering addressed issues of facility availability, access, and maintenance. Caregiver strategies further represented understudied processes that intervened between the built environment and child physical activity (Srinivasan et al., 2003). In light of children's young age and dependence on adults, the built environment indirectly impacted children through caregiver management strategies.

In addition to the substantive contributions of this research, the study findings add to discussions of resilience theory. Caregivers were faced daily with the adversity of living in an unsafe community with limited resources for children's physical activity. In the face of challenging neighborhood barriers to child physical activity, caregivers' strengths and agency were critical in developing and implementing strategies to facilitate child physical activity. Despite their own limited income and, in some cases, limited formal education, caregivers drew upon personal resources. They used parenting skills and knowledge and utilized social connections with others (extended kin, trusted neighbors) to promote their children's outdoor physical activities. Moreover, caregiver strategies were attuned to the developmental needs of preschoolers. They understood the importance for young children to be physically active and located parks and play grounds that were geared to the physical activity abilities of young children. Our qualitative data further enrich the general tenets of resilience theory by detailing the processes that reflect the social and economic particularities of low-income African Americans living in inner-city neighborhoods. More generally, family resilience theory is a valuable approach for studying the built environment. By focusing on family strengths and agency in the face of built environment barriers, resilience theory helps identify intervening processes that are poorly understood in current discussions of the built environment (Srinivasan et al., 2003).

Applied Implications

The use of qualitative methods that elicit caregivers' first-hand accounts underscores the importance of culturally relevant interventions. Such interventions are grounded in the daily

lives, experiences, and preferences of residents and more likely to be effective (Kumanyika & Grier, 2006). Culturally-relevant interventions acknowledge the different experiences and needs of local communities, and seek to collaborate with them (Outley & Witt, 2011; Witt & Crompton, 2003). Interventions designed by city planners and officials, and recreational and leisure service providers should include the participation of local residents who are knowledgeable of local challenges (assets) and local preferences for solutions (Merchant, Dehghan, Behnke-Cook, & Anand, 2007; Miles et al., 2008; Witt & Compton, 2003; Zhu & Lee, 2008). Moreover, culturally relevant interventions should be asset-based and seek to utilize and reinforce existing good quality resources in local communities (Miles et al., 2008; Outley & Witt, 2006). Caregivers' accounts suggested the types of interventions that would be appropriate to the families of young children in the Lincoln Heights community. Participants provided insights on the types of public parks and play areas that met their children's needs. Public parks and play areas should be nearby, include well-equipped and well-maintained facilities, and contain developmentally appropriate equipment. Caregivers' accounts also suggest dispersing multiple small play areas throughout the community to supplement existing play areas. Vacant lots that were widely dispersed throughout the community, typically on residential blocks, could also be the site for the small pocket parks that caregivers preferred. Although it is unclear if participants were aware of them, City programs, such as the Abandoned Lot Project or the Adjacent Land Acquisition Program (ANLAP) (City of Chicago, n.d.) would allow residents to transform blighted properties (abandoned buildings) and vacant lots into parks and play areas.

Participants believed that existing neighborhood assets should be enhanced. The community had a large, safe, older park with the physical infrastructure to support multiple physical activities. Caregivers said that they would use it more frequently if there were additional amenities and lower program costs. Providing low cost, structured, and supervised programs and activities should be a priority for recreation and leisure service providers. Community organizations should also help families identify free and low cost child physical activity venues. Safe neighborhood schools, such as the Henderson School could, with additional resources, continue to serve as a physical activity setting that provided structured physical activities for children (Farley et al., 2007).

Safety within the neighborhood and at specific activity settings was a major concern. Safety concerns at the neighborhood level, in addition to more supportive formal policing efforts, could be addressed by resident-based groups such as block clubs that were already in existence. Landscape design, such as lighting and openness to public surveillance can enhance the safety of child activity spaces (Bedimo-Rung et al., 2005; Floyd et al., 2011; Tester & Baker, 2009). Good design can deter loitering, public drinking, and drug use and selling, and signal the safety of physical activity settings (Lumeng et al., 2006). Such physical design efforts are critical in neighborhoods where residents are fearful of directly confronting offenders (Sampson, 2001).

Limitations and Future Research

The non-random sample and small sample size limit the generalizability of the findings. It is likely that women who utilize Head Start programs are the more competent caregivers in the community. Yet, their experiences are relevant to understanding the diversity of families and caregiver practices in inner-city neighborhoods (Sampson, Morenoff, & Gannon-Rowley, 2002). This study focused on inner-city preschoolers. It can be argued that the strategies identified apply to young children across socioeconomic contexts. However for children growing up in high-risk neighborhoods, these strategies are likely practiced with more vigor. Identification

of management practices from this small exploratory sample opens the door to future research with large, random samples that should explore maternal management strategies to determine if these behaviors are shared by other low-income, African American caregivers raising children in inner-city neighborhoods, as well as other ethnic-racial groups in comparable settings. New qualitative research can also explore other strategies that may have been missed in this study, including distinctive strategies that may be used by caregivers with older children and teens that have greater exposure to the built environment. Findings on the physical activities of African American preschoolers can inform the work of leisure studies scholars who are beginning to explore the development of leisure practices in families with young children (Azar, Naughton, & Joseph, 2009; Quarmby & Dagkas, 2010). More generally, this study provides support for trans-disciplinary models of collaboration that merge knowledge, concepts, frameworks, and models from various fields such as sociology, family studies, leisure studies and public health (Jackson, 2003).

There were no objective measures of physical activity in this study. Future studies should include systematic observational and caregiver reports of child physical activities (Burdette & Whitaker, 2005) that can assess the effectiveness of caregiver practices. Another promising method is behavior mapping in child physical activity settings which is an objective method specifically designed to assess child physical activity and relevant characteristics of the built environment (Cosco, Moore, & Islam, 2010). Finally, studies of the built environment should continue to use systematic qualitative observational strategies, along with structured measures, to better document the complexity and diversity of physical activity in inner-city neighborhoods.

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