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How Might Neighborhood Built Environment Influence Child Maltreatment? Caregiver Perceptions

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Abstract

Rationale: Child maltreatment remains a serious but potentially preventable public health concern in the United States. Although research has examined factors associated with child maltreatment at the neighborhood level, few studies have explicitly focused on the role of the neighborhood built environment in maltreatment.

Objective: We begin to address these gaps by investigating caregivers' own perceptions of mechanisms by which neighborhood built environments may affect child maltreatment.

Method: Utilizing a grounded theory approach, we examined open-ended interview data from 400 adult residents residing in 20 different Cleveland, Ohio neighborhoods (census tracts) and caring for at least one child under 18 years of age.

Results: Our analysis revealed three primary pathways through which caregivers linked the neighborhood built environment to potential child maltreatment: housing density, physical neighborhood space as shaping family relations, and the internalization of the surrounding neighborhood-built environment.

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Conclusions: Our findings suggest that aspects of the neighborhood built environment, such as the presence of abandoned houses or the lack of recreational centers, can be stressors themselves and may also critically alter families' thresholds for navigating other everyday pressures. Conversely, aspects of the neighborhood built environment, such as housing density, may work to mitigate the risk of maltreatment, either by promoting social support or by increasing the likelihood that maltreatment is reported to authorities. Additional research, both qualitative and quantitative, is integral to building and testing models of these separate but related pathways by which the neighborhood built environment may link to child maltreatment.

Keywords

child maltreatment; built environment; neighborhoods; parenting; family relations

1. Introduction

Child maltreatment remains a serious but potentially preventable public health concern in the United States: over 680,000 children were victims of abuse or neglect in 2015, a nearly 4% increase since 2011, with an estimated 1,670 fatalities (U.S. Department of Health, 2017). Research has linked maltreatment to interruptions in children's brain maturation (Hanson et al., 2010), lower cognitive functioning (Fishbein et al., 2009), higher levels of behavior problems (Bolger & Patterson, 2001; van der Put et al., 2015), social difficulties (Alink, Cicchetti, Kim, & Rogosch, 2012), and more short- and long-term physical health ailments compared to nonmaltreated children (Norman et al., 2012). Societally, the total lifetime economic burden associated with child maltreatment is estimated at $124 billion, comprising costs associated with medical care, special education, child welfare, productivity losses, and criminal justice (Fang et al., 2012). Cross-disciplinary scholarship has investigated factors associated with child maltreatment at the individual and family levels (e.g., Berger, 2005; Lowell and Renk, 2017). In recent decades, research has examined the relevance of neighborhood characteristics to child maltreatment, but has largely focused on the neighborhood social environment (Freisthler and Maguire-Jack, 2015; Coulton et al., 2007; Coulton et al., 1999; Molnar et al., 2016). This article builds on these investigations of the relationship between neighborhood and child maltreatment by examining caregivers' perceptions of how aspects of the neighborhood built environment may facilitate or hinder child maltreatment.

2. Background

2.1. Neighborhood Ecology of Child Maltreatment

Cumulative risk models of child maltreatment suggest interlocking and additive effects of risk factors across individual, family, neighborhood, and societal ecologies (Evans et al., 2013; Cicchetti et al., 1997; MacKenzie et al., 2011). Neighborhood has been examined as both a risk factor and opportunity for related intervention (Arcaya et al., 2016; Freisthler et al., 2006; Korbin et al., 1998). Structural factors within the neighborhood ecology, such as poverty or unemployment, have been linked to child maltreatment across a variety of contexts (Coulton et al., 2007; Freisthler et al., 2006). Replicating methods used in Coulton et al.'s (1995) earlier investigation in Cleveland, Ohio, Ernst's 2001 study in Maryland

found that higher levels of economic disadvantage and residential instability predicted more maltreatment. Other research has identified positive associations between rates of child maltreatment and levels of childreported community violence (Lynch and Cicchetti, 1998), and between child maltreatment rates and housing insecurity (Warren and Font, 2015).

Neighborhood-based research also has examined the direct and indirect role of neighborhood social processes in child maltreatment. Guterman and colleagues found that mothers' perceptions of more social disorder, less social cohesion, and less informal social control in the neighborhood, collectively predicted significantly higher levels of maternal stress as well as physical and psychological aggression against their children (Guterman et al., 2009). Similarly, parents who reported less neighborhood social cohesion have been shown to demonstrate more neglect, in part through more perceived parenting stress and less social support (Maguire-Jack and Wang, 2016). Though not specifically addressing child maltreatment, research drawing on the family stress model has suggested parental distress as mediating the link between low socioeconomic status and family life, including parent-child conflict and negative child development outcomes (Conger, Conger and Martin, 2010; Mistry et al., 2008). Similarly, Li et al. (2017) found that family conflict and parental distress mediated the effects of perceived neighborhood quality on children's externalizing behaviors. While research has collectively examined ways in which neighborhood structural and social environments may affect family ecologies and child maltreatment, comparatively fewer studies have explicitly focused on the role of the built environment.

2.2. Built Environments and Child Well-Being

Built environment has been conceptualized as "encompassing aspects of a person's surroundings which are human-made or modified" (Papas et al., 2007: 130). Built and social environments are interrelated, and in this article we address social interactions that occur within neighborhood built spaces. Indeed, features of the built environment, such as parks, community gardens, and overall walkability, have been shown to increase social capital or improve collective efficacy (Cohen, Inagami and Finch, 2008; Leyden, 2003; Teig et al., 2009). Our specific focus, however, is on the perceived mechanisms or processes through which features of the built environment enable or hinder social interactions in ways that have potential implications for maltreating behavior.

Studies investigating the relevance of the built environment to child development have highlighted housing conditions, overcrowding, and a lack of recreational and green spaces to be associated with children's socioemotional, cognitive, and psychophysiological functioning (Evans, 2006; Diez Roux and Mair, 2010). Specific attention has been given to the role of green space, such as parks, in child development and well-being (Wells and Evans, 2003; Wells, 2000). The built environment has been shown to be a key factor in children's level of physical activity and obesity (Ding et al., 2011; Diez Roux and Mair, 2010). Aspects of the built environment may contribute to the experience of chaos, thus disrupting children's or families' abilities to "sustain a meaningful routine of life," a task essential to well-being (Weisner, 2010: 215; Evans, 2004). Moreover, pathways between the built environment and child well-being may be both direct and indirect: for example, crowded housing conditions may directly interfere with a child's ability to complete

schoolwork and indirectly increase intrafamilial conflict or maternal distress (Evans, 2006; Diez Roux and Mair, 2010). Green spaces may not only increase cognitive functioning in children (Coley et al., 1997; Taylor and Kuo, 2011) but also indirectly affect child development by creating opportunities for social interaction for children and caregivers (Coley et al., 1997; Evans, 2003; Maas et al., 2009). Further, the degree to which children experience agency and perceive independent access to play opportunities outside of the home either alone or with peers has been posited to positively affect their physical, socioemotional, and cognitive development (Kyttä, 2004; Sawyer et al. 2018).

A limited number of studies have investigated caregivers' perceptions of links between neighborhood and child maltreatment (e.g., Finno-Velasquez et al., 2017; Korbin et al., 1998). Recent qualitative inquiry by Finno-Velasquez and colleagues (2017) examined how various neighborhood informants (child welfare or social services workers) working with families in Los Angeles and San Diego county neighborhoods perceived those neighborhoods to affect child maltreatment and its reporting. Neighborhood informants in Finno-Velasquez et al.'s (2017) study suggested that having more dwelling space was protective against maltreatment because it lessened intra-household conflict. Informants also hypothesized that the absence of built space outside of the home for families to interact with one another (e.g., parks) promoted social isolation and, in turn, child maltreatment. Such findings suggest that the experience of confined space, either through too-small dwellings or lack of outside built space, may strain family dynamics by contributing to family members' feelings of restricted agency, constituting what we term a *pressure cooker* effect.

Though the work of Finno-Velasquez et al. (2017) importantly advances our understanding of the perceived roles of built space in child maltreatment, the relationship between the neighborhood built environment and child maltreatment remains under-researched. Moreover, the voices of neighborhood caregivers themselves have been less visible in the literature. This article addresses these gaps by investigating caregivers' own understandings of the mechanisms by which the built environment may impact child maltreatment. Specifically, we explore the ways in which participants linked potential child maltreatment to particular aspects of the built environment, to include the presence, accessibility, or condition of institutional infrastructure; green space such as parks; recreational outlets; and population density, and household crowding.

3. Method

The data presented derive from the Neighborhood Factors and Child Maltreatment: A Mixed Methods Study (NIH grant R01HD077002), which investigated neighborhood-level factors associated with child maltreatment by using quantitative and qualitative interview data with community caregivers and child welfare workers as well as census-level administrative data. This study focuses exclusively on the qualitative data from the community resident interviews.

3.1 Sample

The analytic sample included 400 adult residents who cared for at least one child in 20 Cleveland, Ohio neighborhoods (census tracts) selected in a similar investigation 20 years

prior via stratified random sampling to represent various levels of structural characteristics previously linked to child maltreatment (Coulton et al., 1995). All streets within each census tract were randomly ordered, and then an address was randomly chosen on each street as a starting point. All households on that street were visited before proceeding to the next randomly-ordered street. Research team members made an initial attempt to contact each domicile, leaving a study flyer if no one was home. Three additional visits were made before excluding a household. Participants were included if they met the following criteria: 18 years of age or older; parent or guardian of at least one child under the age of 18 years; ability to understand English. All individuals provided written informed consent before participating, completed two 45-minute interviews, and were compensated for their time. The study was approved by Case Western Reserve University's Institutional Review Board.

The average age of caregivers enrolled in the study was 37.6 years. Most participants were female (82.4%) and self-identified as African-American (60.4%), followed by White (23.8%). A smaller percentage of research participants identified a racial category other than African-American or White (15.8%), and the majority of participants identified themselves as non-Hispanic (92.5%). Most of the sample (60.2%) lived below the poverty line, which was higher than the citywide average of 36% (U.S. Census Bureau, 2017). No statistically significant differences in neighborhood poverty level, as measured by census tract-level three-year averages (2013 – 2015) of percentages of children receiving Supplemental Nutrition Assistance Program benefits, were found between caregivers who discussed the relevance of the neighborhood built environment (see Results) compared to those who did not. Further, caregivers who discussed the built environment did not statistically differ from those who did not across their sex, gender, the number of children they were caring for, nor the total number of occupants living in their households.

3.2 Study Setting

Though it is the second largest city in Ohio with 396,043 residents, Cleveland's population has substantially declined from a peak of over 900,000 in the 1950s. In 2015, the year during which this study's interview data were collected, 9% of the city's residential structures were vacant (Ford, 2016). Cleveland's declining population, high poverty, and vacant housing rates make it similar to many northern industrial cities.

3.3. Procedure

Interviews with study participants included scale items as well as closed and open-ended questions regarding neighborhood conditions, neighbor relations, and perspectives on child maltreatment. Here, we examine caregivers' responses to two open-ended questions focused on the role that neighborhood characteristics might play in child maltreatment: "Are there certain things or characteristics about a neighborhood that make it more likely for child abuse and neglect to happen?" This question was followed by: "Are there certain things or characteristics about a neighborhood that make it *less* likely for child abuse and neglect to happen?"

All interviews were digitally recorded with audio recorders and transcribed verbatim by university-level research assistants. Participants' responses to the two aforementioned

interview questions were qualitatively analyzed in Dedoose analysis software (Dedoose Version 7.0.23). The coding and qualitative analysis comprised several steps. First, each respective transcript portion was thoroughly reviewed to identify those participants who described features of the built environment as influencing child maltreatment, resulting in our study subsample (n=83). Second, using a grounded theory approach, the respective transcript portions of the subsample who identified the built environment as a neighborhood-level factor in child maltreatment were independently open-coded by three separate doctoral or post-doctoral level researchers. Researchers reported that code saturation was reached within the analyses of 15 interviews. Coding focused on indexing quotations from these 83 participants in which they identified various perceived pathways linking the built environment and child maltreatment. After a complete wave of open coding of all subsample participant responses, each researcher then organized open codes by similarity into axial categories in order to generate a preliminary code tree describing data patterns. Fourth, all three researchers then convened and compared both open codes and code schemes for similarity and consistency. The axial and thematic structures of all three code trees were reconciled and combined into a final codebook, representing the common themes of subsample participants' responses to the two focal interview questions. Finally, the researchers recoded the subsample participants' responses using the unified codebook, generating the thematic results we report in this article.

4. Results

Nearly 80% of participants (N = 318) reported that some aspect of a neighborhood could influence the likelihood of child abuse and neglect. These characteristics were not mutually exclusive and included poverty, unemployment, drug activity, neighbor relations, mental health problems, and aspects of the built environment. Caregiver responses that underscore neighborhood-level drivers of *neglect* predominantly focused on socio-economic deprivation, unemployment, and drug use. We focus here on caregivers who referred specifically to aspects of the neighborhood built environment (n = 83). Our analysis revealed three pathways through which caregivers linked neighborhood built environments to the risk for child maltreatment, with a focus on abuse: housing crowding and density, built environment as influencing family dynamics, and the internalization of the surrounding built environment.

4.1. Housing Density

Thirty-four caregivers reported two primary pathways through which neighborhood housing density could potentially decrease the likelihood of child maltreatment. First, dense housing was thought to promote a natural surveillance mechanism through residents' visibility to and frequent interactions with each other that could act as a deterrent to maltreatment. Second, the close physical proximity of neighbors in dense housing was thought to promote social connectedness that could buffer some of the strains of child care.

First, caregivers described the visibility, close proximity, and interactions they associated with housing density as possible deterrents against acts of child maltreatment going unnoticed:

> *When you livin' down the way in the projects, the walls are so thin. And people don't mind knockin' on your door [asking] "Hey, is everything okay over there?" You know, versus livin' in a house, and neighbors don't wanna be so nosey.* [36 year-old African American female caregiver of two]

In contrast to their urban experience, caregivers offered that maltreatment may be more hidden in suburban or rural areas, where greater physical space between family dwellings may afford greater privacy and less involvement in one another's lives.

> *I think it [child maltreatment] is more covered up in the suburbs because there's money, people live farther apart…and the houses aren't so close. If you're out on a farm getting beat every day, you know, who's gonna tell unless you go tell? And if you don't have anybody coming around, there's no one around to hear the abuse…* [44 year-old female African-American caregiver of one]

Second, in addition to visibility, caregivers suggested that families' physical proximity in dense housing could potentially promote social interactions valuable to mitigating some struggles associated with caring for children:

> *I think really isolated people in the suburbs can have the same struggles and hardships [that] lead to child abuse. But if maybe people or family were in the city and[they] had a network and supportive neighbors and things to help them thrive, they wouldn't necessarily abuse their children.* [25 year-old White female caregiver of one]

4.2. Built Environment as Influencing Family Dynamics

Thirty-seven caregivers expressed that neighborhood built environment shaped social and familial dynamics, with potential implications for reducing the risk of maltreatment.

4.2.1. Accessible Recreational Outlets for Children—Caregivers explained that neighborhood built spaces such as recreation centers, playgrounds, or libraries could reduce the likelihood for maltreatment by providing an opportunity to physically separate from their children, thus affording parents a temporary reprieve from the stress of caregiving:

> *[If] the parent is getting stressed out or something, [they] need somewhere for the kids to be for a little bit. You know. An opportunity for them to go do something, you know, give [the parent] a little break.* [63 year-old male African American caregiver of two]

> *[C]ommunity centers, playgrounds, libraries…[t]hings that the children can do that are positive, so parents can kind of get that reprieve…[or] maybe be at home prepping dinner or just having a moment to relax.* [37 year-old female African American caregiver of two]

> *They've got [to have] a place to go to…Like a computer room for the kids… swimming … Have something to do...[s]o they won't be all in their [parent's] face and hair all the time about every little thing. It can be aggravating…It really can be.* [26 year-old female multiracial caregiver of one]

In these situations, caregivers who are stressed were understood to be potential catalysts of maltreatment. Indeed, caregivers in our study traced this link:

> *[If] some kid's parent might be stressed out…it's just building up and they can take their frustrations out on the kid* [23 year-old female White caregiver of four]

> *[Parenting] there's a lot of stress…and so if the kid gets on your nerves and your stress level is already up, you're more likely to explode on them.* [49 year-old female White caregiver of one]

Thus, features of the neighborhood built environment were seen as potentially mediating maltreatment risk by facilitating caregiver-child separation and thereby attenuating one potential catalyst: caregiver stress. In addition to offering a reprieve from parenting, caregivers also suggested that features of the built environment could mitigate stress by providing youth with positive outlets for their time and energy:

> *Neighborhoods that probably give the kids more [recreational spaces], versus nothing to do and getting into things and maybe causing a reaction with the parents or whoever is doing the abusing...if they had more activities in some areas… different outlets that they [children] can use versus doing something that they don't have no business doing and then that has to get a reaction out of the parent...They be disciplining them, and sometimes discipline them a little bit too much.* [34 year-old female African American caregiver of one]

> *I think the neighborhoods that have more recreation centers and places that the kids can go to get away from being out on the streets and wanting to be around the violence, I think that possibly could help [reduce child maltreatment]. I'm pretty sure that a mom would rather see her kid in a center playing basketball before she would like to see him out on a corner smoking…so maybe if they're doing good, then they won't put stress on [caregivers] and then they won't make [caregivers] wanna go crazy.* [23 year-old female White caregiver of four]

Moreover, accessible, neighborhood recreational spaces were understood to reduce child maltreatment risk by providing a space where caregivers and children could spend time together outside of the home. As one caregiver described:

> *[T]hings in the community, [like] parks…just getting out and walking with your kids, jogging, different things like ice cream [shops], a lot of things that are just outlets for, you know, mentally going crazy. So, you just gotta keep yourself occupied and you know, also keep your kids on the same level.* [24 year-old male African American caregiver of two]

Here, elements of the neighborhood built environment inform what participants described, colloquially, as their mental health. Another caregiver described how the absence of accessible recreation sites outside of the home shaped her emotional state and familial dynamics:

> *You know, like if there was more parks or more places to take them [kids], 'cause, like, just me personally, sitting in the house, I get so stir crazy. You know, I'd like to take them places because it just helps a lot. You know, I get aggravated just sitting*

in the house all day long. And then they can start getting on my nerves so I just want to, like, take them out, go to the park, go to, you know, the play place or whatever there is. [21 year-old female White caregiver of two]

Conversely, positive aspects of the built environment could potentially buoy familial relations in ways that could mitigate the risk of child maltreatment, as hypothesized by a caregiver living in a busy, newly-gentrified neighborhood:

I honestly think that neighborhoods that have like, a wooded surrounding, so nature, like, places near the [National] Park, I think that it just seems to bring happier, kinder people. Um, living in a city is so different than living in a suburb and I think that that definitely influences children and parents and how they mesh together. [24 year-old female White caregiver of one]

Yet, it was not only the absence of such neighborhood youth spaces in the built environment that kept children home. Aspects of the existing neighborhood environment such as abandoned houses were seen as restricting children's mobility because of safety concerns. Abandoned neighborhood houses were regarded as places in which illicit activities such as drug sales and use and crimes including assault or murder occurred. Families living in proximity to abandoned dwellings elaborated on how those spaces, and their associated dangers, restricted children's everyday mobility by curtailing parents' willingness to let their children navigate independently outside of the family home.

I mean, you're afraid for your child to go outside and play because most abandoned houses can be filled with animals, wild animals, or people doing drugs or homeless people. [60 year-old female African-American caregiver of one]

In these contexts, then, concerns about the existence of a recreation center or playground were rendered moot. Dangers external to the home—whether in the form of community violence or abandoned houses—restricted children's ability to freely navigate their neighborhoods.

[I]t's like there's really nowhere around here for kids to go, where you can say, 'Sure you guys can go to the rec [recreation center] or go here or there,' and, you know, you're not worried about them becoming a victim of a drive-by shooting. [41 year-old female African American caregiver of three]

Constrained mobility was seen as restricting caregivers' sense of agency, shaping familial dynamics, and, in turn, increasing the risk of maltreatment:

Lot of kids can't go outside and play…they have to stay in the house all the time because the parents are afraid to let them go out but then they get frustrated because they're in the house all the time, [then] one of the major reasons [that child abuse and neglect occurs] is the living conditions, which brings out a lot of frustration. Parents and families in general and even if you have pre-teens or teenagers they get frustrated, too, you know, so, it's just a big ball of frustration…it's like they're in this little box. [41 year-old female African-American caregiver of two]

Whereas caregivers primarily reported that neighborhood recreational spaces could inhibit maltreatment by decreasing caregiver stress that could lead to physical abuse, the link

between the neighborhood built environment and potential child neglect was also raised. For example, one caregiver noted:

> *When there just ain't nothing down here. Nothing in the neighborhood for [kids] to do…if it ain't nothing out here for the kids to do, you know, they either stuck in the house or, you know, "Just get on out here, go on outside. Find something to do." You know, so that's neglect.* [40 year-old female African American caregiver of one]

In this scenario, caregiver-child separation in the absence of accessible neighborhood recreational spaces could constitute an act of neglect.

4.2.2. The Role of the Built Environment in Shaping Social Dynamics and Behaviors—

Caregivers described ways in which features of the built environment, such as parks and churches, could promote social relations that could reduce maltreatment risk. For example, one caregiver cited the existence of a neighborhood park as a factor reducing the likelihood of child maltreatment by fostering helpful interactions with other caregivers:

> *(B)ecause, well, you meet other parents [at the park]...and then you can finally, like, you, you can ask a parent, 'Well, do you have that same problem?' And they can be like, 'Yeah'. And [then you could ask] 'Well, how do you handle it?'* [41 year-old female White caregiver of one]

Churches were also described as an example of a built space offering neighborhood caregivers opportunities for social connection that promoted both tangible (e.g., economic) and less-tangible (e.g., social and emotional support) resource sharing among neighbors that could attenuate caregiving burden.

> *[A church] helps support individuals' emotional needs. And even economic needs, so you don't feel as stressed and can make better decisions. So, churches could be a nice place for people to go so they have community. There's different groups for adults to connect with…I don't think it has to be religious, I just think that's kind of the default as far as adults connecting with each other in the physical space are religious organizations…Umm, so they can be more connected, umm, and have outlets when they're overwhelmed, so they can provide for their families.* [38 year-old female White caregiver of five]

4.3 Internalizing the Physical Neighborhood

A smaller subset of caregivers ($n = 12$) described an internalization or embodiment of the built environment in ways that shaped overall well-being and sense of self:

> *(W)ell, if you, if you live in a neighborhood that's kind of run-down, boarded-up houses, not clean. You kind of are what your environment is…(I) kind of think, if you don't feel good about yourself, then you just, I think everything just goes down from there.* [39 yearold White female caregiver of two]

> *[The] decay or destruction of a neighborhood…if you go outside, and all you see is boarded up houses and weeds...I think that could be a little, uh, a little, could lower*

your self-esteem a little bit, you know. [43 year-old African American male caregiver of one]

The impact of failing infrastructure or poorly attended yards on one's sense of self and wellbeing was seen, in turn, as influencing maltreating behavior:

[It]'s more or less, like, the type of area that you stay in, and so your kids grow up in [an] environment where the windows is broken, the trash is on the street. It's just like, you're becoming a product of your environment, and in those type of areas more people whoop than down here because that's the environment that they're in. Like, if all the lawns are all well-kept and everything's clean and all that stuff, I think there'd be less chance of child abuse there, as opposed to me going through a place where nothing's kept up, they don't take care of anything, they're not taking care of their living areas, who's to say they're taking care of their kids. [34 year-old female African American caregiver of three]

5. Discussion

This study builds on literature surrounding the relevance of the neighborhood environment to child maltreatment by focusing specifically on how aspects of the neighborhood built environment may link to child maltreatment. We have focused on key aspects of the neighborhood built environment, including housing, vacant homes, and recreational spaces. To our knowledge, this study is one of only a few to present caregivers ' own voices explicating these potential associations. Although we describe the ways through which caregivers link the neighborhood built environment to maltreatment, we also argue that these identified, hypothesized mechanisms are not discrete pathways but rather are overlapping puzzle pieces of a more complex landscape of risk. When examined collectively, these potential mechanisms may reveal larger, shared insights about the relationship between the built environment and maltreatment. For example, many of the mechanisms discussed in this article underscore how aspects of the built environment—the absence of a recreational center or park, crowded living conditions, exposure to deteriorating infrastructure—contribute to a sense of restricted agency, which may erode caregivers' internal resources and, in turn, increase the risk of child maltreatment.

Evans (2003) has argued that one way the built environment influences mental health is through its effects on people's sense of personal control. Individuals who perceive control over their environment and their ability to maneuver within it experience more robust mental health. Conversely, when opportunities for control over their environment are thwarted or restricted, mental health may be attenuated through feelings of helplessness or hopelessness. Our research participants' narratives likewise articulated a possible link between the built environment and child maltreatment via the alteration of caregivers' feelings of personal control and sense of agency. Yet, if many aspects of the neighborhood built environment could be linked to a sense of constrained agency, other aspects may catalyze social relations and facilitate activities that could serve to mitigate the risk of child maltreatment.

5.1. Pathways between housing and child maltreatment

Caregivers' discussions of the role of housing present a notable distinction between dynamics deriving from housing density and housing crowding. Caregivers speculated that increased housing density could reduce child maltreatment via the close proximity and visibility of neighbors, while children living in close quarters or unable to expend energy elsewhere could potentially catalyze maltreatment via parents' mounting stress and frustration within the household. Thus, housing dynamics could be a possible risk or protective factor based on whether caregivers saw crowded living conditions as engendering chaos or housing density as facilitating neighbor surveillance of child well-being.

Caregivers' reporting of close quarters as a contributor to overall household stress is consistent with literature on the built environment and child development that suggests that overcrowding increases psychological distress in children and parents, exacerbating intra-familial conflict (Evans, 2003, 2006; Diez Roux and Mair, 2010). This dimension is part of what we term a *pressure cooker* effect: It evokes caregivers' descriptions of crowded homes and a restrictive environment that hinders movement and restricts agency. The pressure cooker effect we discussed in this article may be reduced by lower housing crowding, whereby sufficient living space may help to diffuse instances of conflict.

A less-expected finding in our study was caregivers' narratives asserting housing density as a factor in potentially mitigating child maltreatment via increased visibility and oversight. In these narratives, housing density was discussed as a possible deterrent to child maltreatment not only because of the social connectedness engendered by housing density, but because residents were certain that cases would be reported. Participants perceived that in less residentially-dense suburban or rural areas, reporting of child maltreatment may be less likely due to cases going unnoticed.

On the other hand, caregivers hypothesized the presence of abandoned housing as a consistent risk factor for maltreatment because such housing facilitates illicit activities perceived to create a less-safe neighborhood environment for children. Here, caregivers described an indirect pathway to possible maltreatment: because of the dangers associated with abandoned houses, caregivers felt uncomfortable letting their children outside in neighborhoods where abandoned houses were numerous. In turn, as noted by caregivers, children confined to the home could potentially provoke intrafamilial stress and conflict between caregiver and child. In this way, the presence of abandoned buildings outside the home could contribute to making the home itself a more tense environment and increase the likeliness of child maltreatment. While research has examined the relationship between housing insecurity and child maltreatment (e.g., Warren and Font, 2015), to our knowledge, these findings are the first to articulate a perceived pathway between abandoned houses in the built environment and child maltreatment. More broadly, if abandoned housing is associated with lower socioeconomic environments, our findings may add to scholarly discussions aimed at better understanding the complexities of the relationship between socioeconomic status and family relationships (Conger, Conger, and Martin 2010), by considering how the features of the built environment may shape family dynamics.

5.2. Pathways linking the built environment, the social environment, and child maltreatment

Caregivers communicated how aspects of the neighborhood built environment could shape familial and social dynamics in ways that had implications for the risk of child maltreatment. Caregivers elaborated the ways in which built neighborhood resources such as playgrounds, parks, or recreation centers could help mitigate maltreatment by entertaining children and thus provide parents temporary reprieve from the strains of childrearing; they may also allow children a safe and positive outlet for their energy, thus making them less inclined to engage in perceived negative behaviors or "bug" caregivers at home. Consistent with other research linking, for example, the availability and use of green space to children's development and social interaction (Coley et al., 1997; Evans, 2003; Maas et al., 2009), our findings reveal that aspects of the built neighborhood environment could play multiple roles and are meaningful to caregivers in differing ways.

Our findings corroborate those of other research findings linking together constrained dwelling space, intra-household conflict, and child maltreatment (Finno-Velasquez et al., 2017). Our findings build upon those of Finno-Velasquez et al. (2017) by illustrating through caregivers' voices, how those links may operate: namely, a broader child-friendly neighborhood built environment literally expands space for children to expend energy and time outside of the home, potentially lessening pressure within the dwelling space. Conversely, limited built recreational space promotes social isolation, which may facilitate maltreatment. The absence of these built spaces for children can restrict mobility of caregivers and children and may contribute to what we conceptualize as a "pressure cooker" effect within dwelling spaces. Other literature has underscored the role of cumulative risk in child maltreatment, demonstrating the interactions between multiple pathways in a broader risk environment (Evans et al., 2013; Cicchetti et al., 1997; Molnar et al., 2016). In addition, similar to those who have posited social contacts as a mechanism behind the relation between green space and health (e.g., Maas et al., 2009; Sawyer et al., 2018), our findings suggest that social interaction and relationships may constitute another pathway between certain aspects of the built neighborhood environment—recreation centers, playgrounds, parks—and child maltreatment. These findings add an important dimension to research that has demonstrated the link between the built environment and social capital (Cohen, Inagami, and Finch, 2008; Leyden, 2009).

Finally, caregivers in our study described an enveloping effect of the neighborhood built environment around parents' everyday lives such that an adverse environment affected the family milieu and could compound the risk of children being maltreated. This mechanism of internalizing or embodying one's physical surroundings – "you are what your environment is"— highlights a diffuse, yet powerful, way in which the neighborhood built environment could inform both intra- and interpersonal relations. The quality of the built environment was seen as reciprocally shaping individual and social behavior (Sawyer et al., 2018). The caregiver who suggested that the presence of nature improves parent-child relationships indeed echoed findings from research on the restorative qualities of green spaces (Coley et al., 1997; Faber Taylor and Kuo 2011; Wells, 2000). Understandably, environments with physical "eyesores" such as abandoned buildings, graffiti, boarded houses, and deteriorating

infrastructure could evoke feelings of lower self-worth or depression in residents, as the narratives presented here express.

Our findings suggest that aspects of the built environment are not only stressors themselves but may also critically alter the threshold for dealing with other everyday stressors, consistent with cumulative risk models that have historically demonstrated the additive effects of risk factors across the life course (Evans et al., 2013). Caregivers in our study framed neighborhood-level factors of the built environment as impinging upon or circumscribing the threshold to abuse or neglect, where limitations in opportunity and resource in the neighborhood ecology were seen as critically linked to one's caregiving capacity and behavior in the family ecology.

5.3. Study Limitations

Our sample focused explicitly on urban-dwelling adults who were caregivers of children under the age of 18 years. Our sample also reported a higher level of poverty than the city-wide average. Thus, findings may not be transferable to suburban or rural settings or to parents of higher socioeconomic status. Moreover, only a subset of the sample specifically identified a connection or pathway between neighborhood built environment and child maltreatment. However, the relevance of the neighborhood built environment was not explicitly posed as a survey question; rather, in this study we only analyze instances where this topic surfaced from participants themselves as they responded to a more general question about the effect of neighborhoods on maltreatment. Additionally, data on neighborhood population density were unavailable in the current study and thus we could not explore how comments on the built environment from caregivers residing in more dense neighborhoods may differ from those in less dense areas; as such, our findings may be biased due to the omission of this important construct. Nevertheless, our findings warrant important consideration for their presentation of perspectives that have not been previously highlighted in academic literature on child maltreatment. We hope that the findings presented here encourage further research on this topic.

6. Implications and Conclusions

Theoretically, pathways identified by our study participants offer actionable, concrete points of intervention whereby aspects of the neighborhood built environment may help insulate children and families from higher risk of maltreatment. Other research has supported the notion that when parents are provided opportunities to connect with one another, they are able to exchange valuable formal or informal childrearing information regarding ways to cope with challenging caregiving situations or information about recreation or education services (Delany-Brumsey et al., 2014; Kao, 2004; Kim, 2008). Thus, infusing neighborhoods with built spaces that engender social interactions—or supporting those that already exist—may be crucial to facilitating social support among caregivers that promotes child and family well-being and, thus, lower likelihood of maltreatment. While solutions to inhibiting maltreatment certainly do not hinge solely on the bolstering of, for example, neighborhood parks or recreational spaces or the revitalization of deteriorated neighborhood infrastructure, our participants' perspectives suggest that further attention is warranted to the

ways in which the neighborhood built environment may be designed or manipulated to attenuate (i.e., offer support for and reprieve from) some strains of childrearing.

Child welfare research links poverty to maltreatment, but the mechanisms that account for this association are less clear. Our findings suggest that in addition to poverty being linked to financial stress and to a lack of neighborhood resources, aspects of the built neighborhood ecology may be worthy of exploration as relevant intervening factors. For example, dense or crowded housing was perceived as facilitating more surveillance within the neighborhood, thus promoting reporting of suspected maltreatment. Taken with other related perceived stressors such as abandoned infrastructure and vacant houses, our findings suggest an accumulating pressure exerted on households that may ultimately impact a caregiver's self-concept in deleterious ways. These findings suggest that additional research, both qualitative and quantitative, is warranted in order to disentangle pathways from neighborhood to child maltreatment. Specifically, future inquiry may examine differences in the role of built environment characteristics in child maltreatment both within and across various neighborhoods. Such research would not only build and test models of these perceived pathways but also examine the relevance of neighborhood variation in characteristics such as poverty, population density, or household crowding.

Further, while previous research has examined neighborhood-level structural variables (e.g., concentrated disadvantage) as indirectly affecting child maltreatment through social processes (e.g., social cohesion, collective efficacy) via hierarchical linear modeling approaches (e.g., Coulton et al., 1995), future research might use multilevel structural equation modeling techniques in order to measure whether individual-level, caregiver-perceived variables (i.e., the mechanism constructs we outline in our data) specifically mediate links between physical neighborhood-level factors and child maltreatment. Moreover, additional mixed-methods neighborhood study designs are integral to further inductively build, with qualitative inquiry, and deductively test, with quantitative modeling, the separate but related mechanisms by which the neighborhood built environment affects child maltreatment.

The findings of this study also suggest that future empirical and conceptual research consider multiple relevant factors in tandem. For example, a neighborhood park may both provide parents a temporary break from immediate caregiving stressors, and serve as a site for information exchange; however, such processes may not occur if other aspects of the built environment are constraining the ability of families to access that space. The need to walk past abandoned infrastructure that may house illicit activities, for instance, may make caregivers less likely to allow children to go to the park in the first place. Future research should also consider how these findings on the built environment are linked to racial and class dimensions of child maltreatment statistics—namely, the disproportional reporting of child abuse and neglect in lowincome African-American neighborhoods (Knott and Donovan, 2010; Miller, Cahn, and Orellana, 2014), in addition to current policy debates surrounding "free-range parenting" (Pimental, 2012).

Moreover, our findings regarding the paradoxical role of housing crowding vs. housing density, as well as the multiple meanings that aspects of the built environment, such as parks

and playgrounds, hold for caregivers underscore the importance of recognizing the contextual and fluid meaning of particular research variables. The issue of how to identify "risk factors" in cumulative risk models demands more attention as certain factors cannot be assumed to be inherently risky or protective (Evans et al., 2013). Likewise, Weisner (2010: 217) insists that while chaos—defined as "factors that interfere with the project of sustaining a meaningful routine of life"—is a universal threat to well-being, what constitutes "chaos" is subjective and culturally-contingent. Thus, what may be understood and experienced as chaos in one context may be a pathway for healthy development in another. By drawing on caregivers' own perceptions of factors that facilitate or mitigate against child maltreatment, our findings reveal that aspects of the neighborhood built environment hold multiple, and sometimes conflicting, meanings for community members, and that these have implications for understanding child maltreatment more broadly.

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Research Highlights

- Qualitative interview data analysis on child maltreatment and neighborhood ecologies.
- Explores caregivers' perceptions of how built environment affects child maltreatment.
- Built environment shapes familial dynamics to impact risk for child maltreatment.
- Aspects of the built environment can be risk and protective factors at the same time.