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Parental and community level correlates of participation in out-of-school activities among children living in low income neighborhoods ☆

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ABSTRACT

Participation in organized activities outside of school can prevent poor outcomes in at-risk children and youth. In low income neighborhoods, though, there may be barriers to involving children and youth in these activities. This study examined the degree to which parental community involvement and neighborhood safety and disadvantage affected participation in out-of-school activities. Using data from probability samples drawn in 128 low income census tracts in 10 cities that were part of Annie E. Casey Foundation's Making Connections Initiative, hierarchical generalized linear models (HGLM) were estimated. Results show that children whose parents were involved in community volunteering and action were more likely to participate in out-of-school activities. Neighborhood safety ratings also had a positive effect on participation. Cross-level interactions showed that unsafe conditions were less of a barrier if parents volunteered in the community and that participation among African Americans and Hispanics was less inhibited by unsafe conditions than was participation for Whites and other ethnic groups. The implications are that out-of-school programs will have better attendance if they are part of a context in which adults involve themselves in the community and that programs should include provisions for keeping children safe in neighborhoods where safety is perceived as problematic.

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1. Introduction

Participation in organized activities outside of school can improve developmental outcomes among at-risk children and youth. Among other things, out-of-school activities foster children's relations with peers and adults, add to their knowledge and skills, and provide supervision for children when school is not in session (Bartko, 2005). Moreover, involvement in such activities may contribute to the formation of social and cultural capital for the family and community as social network connections are established. However, the degree to which out-of-school activities can have these positive effects depends on enough children taking part with sufficient regularity so that they and their communities can benefit (Borden, Perkins, Villarruel, & Stone, 2005). Indeed, a number of concerns have been raised about low levels of participation in programs that have been targeted to at-risk children (Lauver, Little, & Weiss, 2004). Especially in low income communities, there may be barriers to engaging at-risk children and youth in out-of-school programs at the requisite levels.

Attraction into organized out-of-school activities may be influenced by whether parents and children generally feel comfortable involving themselves in the community in which they live. Whereas school attendance is required, participation in organized activities out-of-school is voluntary and typically requires that parents or children make some effort to seek out, enroll in, or otherwise engage with formal or informal networks or organizations. Parents that are socially connected within their communities may be more aware of community activities and may have developed greater trust in local organizations and groups than families that are socially isolated. The degree to which the neighborhood is viewed as a safe and orderly place may also affect attendance in out-of-school activities because individuals usually must leave their homes and walk, bike, or travel on public transit or a private automobile within or through their neighborhood. This is not to say that all out-of-school activities occur within the so called neighborhood, but unsafe conditions within the space surrounding the residence may discourage participation in any activities outside the home or make it more difficult to travel even if the activities are in another neighborhood.

Although a number of studies have demonstrated that distressed neighborhoods can have a negative effect on children's health and academic achievement (Leventhal & Brooks-Gunn, 2000; Leventhal & Brooks-Gunn, 2004), little is known about how conditions in these neighborhoods may hinder participation in out-of-school activities. Nevertheless, correlations have been established between academic success and time spent in out-of-school activities (Eccles, Barber, Stone, & Hunt, 2003; Mahoney, 2000), suggesting that neighborhood factors affecting participation in out-of-school activities may have

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indirect effects on educational attainment and other aspects of development. If conditions in distressed neighborhoods interfere with children's engagement in out-of-school activities, this may be an additional source of disparities in educational attainment for poor children.

In this study, we examine how neighborhood safety and disorder and families' social integration into their neighborhoods affect children's participation in out-of-school activities. Specifically, we estimate a multilevel model in which neighborhood safety and socioeconomic characteristics are hypothesized to affect children's level of involvement in out-of-school activities. The model also estimates the effect of parents' community involvement on their children's engagement in out-of-school activities. Since the study takes place in a diverse set of low income neighborhoods, we are able to determine whether various racial and ethnic groups respond differently to their neighborhood settings in terms of children's participation in out-of-school activities. The study findings identify barriers that can potentially be addressed at the neighborhood level in order to increase engagement of a larger proportion of children in out-of-school activities.

2. Background

2.1. Participation in organized out-of-school activities

There is growing evidence that how children spend their time when they are not in school can affect aspects of their development (Eccles et al., 2003; Little & Harris, 2003). Although there is also evidence that low income children in particular benefit (Brown & Evans, 2002; Mahoney, 2000; Posner & Vandell, 1999), studies show that these children are less likely to regularly attend organized out-of-school activities than more affluent children (Lugalia, 2003; Pedersen, 2005; Wimer et al., 2006). Moreover, drop-out rates from after school programs are highest among at-risk youth from disorganized neighborhoods (Weisman & Gottfredson, 2001).

There are also racial and ethnic differences in participation in out-of-school activities, raising further concern that those children who might benefit most are not being reached. Nationally, rates of participation are highest for Whites and lower for African American and Hispanic children. Enrollment in before and after school child care is an exception to this pattern since African American children have the highest rates of attendance in these programs (Wimer et al., 2006). However, the relationship between race or ethnicity and participation in organized out-of-school activities is probably more complex than simple comparisons reveal. African American children, for example, are more likely to be poor and to live in neighborhoods with high crime rates and fewer resources (Posner & Vandell, 1999). The possibility that race and ethnicity are confounded with neighborhood ecology is suggested by a study comparing participation in organized out-of-school activities in two communities, one White and one African American. In addition to differing racially, these communities diverged in numerous other economic and social conditions that seemed to affect participation in out-of-school activities (Simpkins, Ripke, Huston, & Eccles, 2005). Nevertheless, few studies of out-of-school activities have included sufficient numbers of racially and ethnically diverse neighborhoods to investigate these possibilities.

2.2. Neighborhood context

The neighborhood context may be an important factor determining the degree to which children participate in organized out-of-school activities. While there is growing evidence that neighborhoods affect family functioning and child development, there is considerable debate about what the important factors and mechanisms are that may be responsible for the effects (Leventhal & Brooks-Gunn, 2000; Sampson, Morenoff, & Gannon-Rowley, 2002). Indeed, the potentially important contextual factors probably differ depending on what aspect of family and child life is being considered. With respect to out-of-school activities, the aspects of the neighborhood that may be most important relate to the degree to which the family and child have ties to and relationships within their community and the extent to which they feel safe and comfortable in their neighborhood surroundings.

Families that are involved in their community through civic action, volunteer work, or memberships in associations and organizations seem to have higher levels of social trust and access to resources than those who lack such connections (Paxton, 1999; Putnam, 2000). This type of social capital may contribute to their children's levels of involvement in out-of-school activities. Indeed, individuals who participate in civic affairs, volunteer work, and community associations have been shown to have more positive attitudes toward working with youth in their communities (Scales et al., 2001). Additionally, social involvement in the community has shown positive effects on parenting, especially for African American mothers (Hill & Herman-Stahl, 2002). Yet, there is concern that the rate of participation in civic affairs and community associations are lower for African Americans and other ethnic groups than for Whites (Stoll, 2001). However, in this instance race or ethnicity may be confounded with the social ecology of the neighborhood, as evidenced by the fact that when neighborhood poverty is held constant, community participation rates are actually higher for African Americans than for Whites (Stoll, 2001).

Another factor affecting community ties where children are concerned is the degree to which parents are acquainted with their children's friends and their families. Neighborhoods with higher residential stability (e.g., fewer rental homes) have been shown to foster parental support and monitoring of their children (Cantillon, 2006). When combined with the length of time an individual family has lived there, low residential turnover may help families to feel comfortable that they know the children with whom their child may be interacting (Aneshensel & Sucoff, 1996; Cantillon, 2006).

The amount of poverty, crime, and disorder are important features of the neighborhood that may affect whether parents encourage their children to get involved in out-of-school activities and whether children feel comfortable in participating. Safety is of particular concern in poor neighborhoods where there are high rates of violence and incivilities, in part due to weak social ties and controls within the community (Sampson, Raudenbush, & Earls, 1997). Perceptions of neighborhood safety have been shown to influence parenting strategies. Mothers who perceived their neighborhoods as less safe have been shown to engage in more hostile forms of control over their children (Hill & Herman-Stahl, 2002) and to set more limits on their activities (Furstenberg, 2001; Jarret, 1995). In the Moving to Opportunity experiment, mothers who moved to safer neighborhoods gradually reduced their intense monitoring of their children and allowed them more freedom to move throughout the neighborhood (Kling, Liebman, & Katz, 2005). There is some evidence that youth also take safety into account in deciding whether to involve themselves in out-of-school activities. In a qualitative study of a neighborhood youth program in Chicago, participants valued the program because it was a safe place to be with peers in what was otherwise a relatively dangerous neighborhood (Halpern, Barker, & Mollard, 2000).

There may be racial and ethnic differences in how neighborhood conditions are interpreted and linked to behavior. Sampson and Raudenbush (2004) found that African Americans in Chicago had a higher tolerance than Whites for neighborhood problems indicative of disorder such as graffiti, vacant houses, and disruptive teenagers. Moreover, they found that neighborhoods with a predominately African American population were perceived as having more disorder than predominantly White neighborhoods, even after controlling for objective signs of disorder. This is consistent with other studies that have found that Whites have a tendency to overstate the level of problems in neighborhoods especially if the population includes non-

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Whites (Charles, 2000), while African Americans tend to view these neighborhoods more favorably (Krysan, 2002). Moreover, studies have shown that Whites and African Americans have different comfort levels with respect to the racial mix of neighborhoods, with Whites favoring neighborhoods that are predominately White and African Americans inclined toward neighborhoods with a more equal distribution of African American and White residents (Charles, 2000; Krysan, 2002).

Variations in the responses of racial or ethnic groups to their neighborhood surroundings may also reflect their past experiences. For example, after finding that neighborhood instability predicted negative child outcomes in White but not African American neighborhoods, a qualitative study found that residents of the White neighborhood viewed the residential turnover as an unwelcome invasion of outsiders. Conversely, in the African American neighborhood, the new residents were believed to be mainly adult children of current or former residents who were moving back to the city, reflecting a positive trajectory for the neighborhood (Korbin, Coulton, Chard, Platt-Houston, & Su, 1998). Neighborhood stability was found to protect against psychological distress in affluent neighborhoods but to have the opposite affect in poor neighborhoods due to feeling powerless to escape from the dangerous and deteriorated surroundings in poor but stable neighborhoods (Ross, Reynolds, & Geis, 2000). Ethnic variation in responses to neighborhood conditions can also be seen in the finding that many African American women were resilient in the face of social disorder in their community because they could draw on their personal resources (Cutrona, Russell, Hessling, Brown, & Murry, 2000).

This suggests that the neighborhood context may exert complicated and possibly offsetting influences on parents and their children with respect to their participation in organized out-of-school activities. In a qualitative study on how parenting strategies influenced children's use of leisure time in one isolated neighborhood Outley and Floyd (2002) found that some parents resorted to severely restricting their children's activities to the home or nearby locations which the parent could readily supervise. Other parents aggressively sought out programs that offered a sense of safety despite the poor conditions in their immediate surroundings. Others relied on their social connections and networks in the community for assistance.

This diversity of responses, all conditioned to some degree on adverse neighborhood circumstances, suggests that neighborhood effects on participation in organized out-of-school activities will differ depending on the social resources of the family, their appraisal of their surroundings, and how they view themselves relative to the social structure of the neighborhood. Given the racial and ethnic segregation and stratification in this society, any of these factors may be correlated with race.

3. Methods

3.1. Data and sample

Data for this study come from household surveys conducted as part of the Annie E. Casey Foundation Making Connections (MC) project. Making Connections is a community change initiative involving a 10-year commitment from the Foundation and partners in low income neighborhoods in 10 cities (Denver, Des Moines, Hartford, Indianapolis, Louisville, Milwaukee, Oakland, Providence, San Antonio, and Seattle/White Center). Data in these cities were collected jointly by the National Opinion Research Corporation (NORC) at the University of Chicago and the Urban Institute.

Local stakeholder and foundation partners defined the Making Connections sites in each city. These decisions were guided by the goals of the MC Initiative, which include working to improve outcomes for families and children living in disadvantaged areas where a large proportion of the population face barriers in connecting with the social and economic opportunities and other resources in the region. Households in this study represent probability samples in the selected neighborhoods. A total of 7496 households were interviewed. The average sample was approximately 750 (697 to 821) in each city and the response rate was 69%. In each household, a focus child was selected at random and the adult in the household knowing the most about the focus child completed the interview. The interviews were conducted in-person in residents' homes in English, Spanish, and additional languages that were prevalent in the particular site. For the purposes of these analyses, the sample was restricted to the 2456 households with children of school age (age 5 to 17). Of these, 11% contained data missing at random and were deleted listwise, bringing the final analysis dataset to 2192 households.

Census tracts were chosen as proxies for neighborhoods in this study because they had sufficient density of respondents and adequate reliability for the neighborhood measures (Coulton, Cook, & Irwin, 2004). Although census tracts do not necessarily comport with resident definitions of their neighborhoods, they are commonly used in this type of research (Coulton, Korbin, Chan, & Su, 2001). The study households were distributed among 128 census tracts. The mean number of households per census tract was 58, with a range of 3 to 237. Only 3 of the tracts had fewer than 10 households and we choose to retain all 128 census tracts in the study to enhance statistical power (Snijders, 2005).

3.2. Measures of dependent variables

The dependent variable for this study is *participation in organized out-of-school activities*. Survey respondents were asked if the focus child, "…participated in organized activities outside of school hours or on weekends during the past year, including sports teams, music, dance, or language classes, youth groups, clubs, etc." If they answered "yes," they were then asked how often (daily, 2–3 times per week, weekly, monthly, a few times a year, or seasonally). The responses to these questions were used to craft two measures of *participation in organized out-of-school activities*. First, because most published studies have relied on a dichotomous measure of out-of-school activities (Simpkins, Little, & Weiss, 2004), we created a measure where 1 = participation at least weekly, and 0 = participation less than weekly. Second, because there is some evidence to suggest that children who participate in out-of-school activities more frequently demonstrate greater benefits (Lauver et al., 2004), we created a multiple category variable where the categories were never, occasionally, weekly, 2–3 times per week, and daily.

3.3. Measures of individual and household level independent variables

The degree of community involvement of the household was hypothesized to affect participation in organized out-of-school activities. Four variables were available in the survey to represent this concept. *Years in the neighborhood,* was a continuous measure of length of time the respondent has lived in the community. Whether the respondent had *taken action to improve the neighborhood* was made up of three survey questions which asked if, in the last 12 months, the respondent or any member of their household had: 1) spoken with a local political official about a neighborhood problem or improvement, 2) spoken with a local religious leader or minister about a neighborhood problem or improvement, or 3) gotten together with neighbors to do something about a neighborhood problem or to organize neighborhood improvement. If the respondent answered "yes" to any one of those, the variable was coded "1," otherwise it was coded "0." *Volunteers in neighborhood,* was measured with the following survey question, "Over the past 12 months, have you volunteered or helped out with activities in your community?" *Satisfaction with child's school* was measured on a 5-point scale where 1 = very dissatisfied and 5 = very satisfied.

The racial or ethnic group identity of the child and household was an additional important factor of interest in this study because it may

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have either a direct effect on participation or may influence the perception of neighborhood process or structure. Because the survey did not include a direct measure of child race or ethnicity, respondent race was used as a proxy for child race. For measures of *race/ethnicity*, all respondents were asked to self-identify their racial or ethnic backgrounds. Respondents were first categorized as Hispanic or non-Hispanic. For non-Hispanics, they were then categorized as: White, African American, Asian/Pacific Islander, or other. We later collapsed Asian and other into a single category because of small group sizes. The race/ethnicity categories were then dummy coded and White was used as the reference group.

Additionally, a number of child and household characteristics that may be related to participation in organized out-of-school activities were included as control variables. *Child sex* was a dichotomous measure where 1=male and 0=female. Previous research suggests that *child age* is correlated with out-of-school activities, with participation rates being highest with younger (grade school) children, and rates of participation falling off in middle and high school (Lauver et al., 2004). We therefore grouped child age into three categories: 5–10, 11–13, and 14–17 to be consistent with grade, middle, and high school. Respondent perception of *child health* was measured using a 5-point scale where 1=poor, 2=fair, 3=good, 4=very good, and 5=excellent. *Household income* was grouped into three categories and dummy coded: income less than $15,000 per year, income between $15,000 and $30,000 per year, and income over $30,000 per year. *Home ownership* was included in the analysis; the variable was coded "1" if the child's family owns or is in the process of buying the home, and "0" otherwise. Respondents were asked the highest level of *education* they had completed. Responses were collapsed and dummy coded in the following categories: less than high school, high school or GED, and more than high school.

3.4. Measures of neighborhood level independent variables

Two types of neighborhood measures were used in this study. Neighborhood perceptions were measured using an aggregation of survey responses from the entire household survey (N=7496) within census tracts (N=128). Neighborhood structural measures were made using Census data.

The perception measure used in this study was the average neighborhood *safety rating.* A neighborhood safety scale was created using six items on the Making Connections survey. Respondents were asked to rate on a five-point scale (1=strongly agree and 5=strongly disagree), the following six items: "My neighborhood is a safe place for children," "I feel safe at home at night," "I feel safe being out alone in my neighborhood during the day," "If someone where to stop me at night to ask directions, I would speak with them," "On Halloween, most children go trick-or-treating," and "Most criminal activity going on here is committed by people outside of the neighborhood." The coefficient alpha for the neighborhood safety score was .70 (Coulton et al., 2004). The mean neighborhood (i.e. census tract) safety was 4.55 (SD=0.37), with a range of 3.38 to 5.44.

All other neighborhood level variables were measures of neighborhood structure and were taken from the 2000 US Census. The measures chosen for this study where those identified in previous research as correlated with levels of social disorganization and control in neighborhoods (Sampson et al., 2002) and expected to influence participation in out-of-school activities. Measures include: *poverty rate* (percent of the population in households with income below the federal poverty threshold), *racial/ethnic composition* (percent of the population that is Non-Hispanic White, Non-Hispanic African American, and Hispanic), and the percent of households in the neighborhood that moved in the last 5 years (percent moved in last 5 years). There was a time lag between the 2000 Census based measures and the survey data collection, which occurred in 2002–2004.

3.5. Analyses

In this study, we were interested in understanding the influence of both individual/household and neighborhood factors on children's participation in out-of-school activities. Because our dependent variable is categorical and children in our sample are nested within neighborhoods, we used hierarchical generalized linear models (HGLM). Hierarchical linear models have been developed to deal with issues specific to nested or multilevel data including aggregation bias, misestimation of errors, and the unit of analysis problem (Raudenbush & Bryk, 2002). They allow modeling of the variation between and within neighborhoods using factors at the individual and neighborhood level, as well as for examination of neighborhood factors independent of individual factors. Factors hypothesized to explain differences among individuals were modeled at level one. Factors hypothesized to explain variation among neighborhoods were modeled at level two.

Our main approach to the analysis was to build a multi-level logistic (Bernoulli) model estimating the log odds that a child living in a given neighborhood will participate in out-of-school activities. We did this in stages, beginning with a null model with no predictors to estimate the over-all between neighborhood variance in weekly out-of-school participation and to provide a baseline for comparison with later models. Second, we estimated the level 1 model with individual predictors (shown in Table 2, Model 1). In this and all subsequent models, we centered all of the continuous individual level predictors on the grand mean and left all the remaining (dummy) variables uncentered. This controls for differences in children and households between neighborhoods, allowing the intercept to provide an estimate of the expected neighborhood outcome for the "typical" child in each neighborhood. At this stage, three level one variables (child sex, family income, and home ownership) were found to not be statistically significant and were dropped from further analysis. Third, we estimated a series of models to test whether there was variation in the regression coefficients (i.e. slopes) across neighborhoods. None of the individual level variables had a significant estimated parameter variance and the slopes were, therefore, fixed in all subsequent analysis. The next step in our model building was to add neighborhood level predictors to our model (shown in Table 2, Model 2). At this stage, one of the neighborhood level variables (percent moved in the last five years) was found to not be statistically significant and was dropped from further analysis. Also, since the effect of racial/ethnic composition was mainly represented by the percentage White and non-White, the set of race and ethnicity categories was simplified by substituting the variable *percent non-White* as a level two variable. Next, we tested a number of cross-level interactions to examine the extent to which certain neighborhood conditions might differ in their impact on participation in out-of-school activities depending on the race/ethnicity of the respondent and the measures of parental involvement in the neighborhood. To avoid problems with small cell sizes and multicollinearity, models with significant cross-level interaction are shown separately for interactions with neighborhood safety (Table 2, Model 3), interactions with neighborhood poverty (Table 2, Model 4) and interactions with neighborhood race/ethnicity (Table 2, Model 5). Finally, to test the sensitivity of the results to the specification of the dependent variable we estimate a model with five out-of-school participation categories: daily, 2–3 times per week, weekly, occasionally, never. This was first specified as an ordinal logistic model, but did not meet the proportional odds assumption. Therefore, we used a multinomial logistic model.

4. Results

4.1. Descriptive statistics

Descriptive statistics for the study variables at the individual/household and neighborhood levels are presented in Table 1. Many

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children in the sample do not participate at all in out-of-school activities (38.5%), while a larger group (48.6%) participates at least weekly. Nearly equal proportions of males and females are represented in the sample. The largest proportion of children in the sample were between ages 5 and 10 (45.6%), 24.2% were between 11 and 13, and 30.2% were between 14 and 17. The mean perceived child health score was 4.07 (SD = 0.98) in a scale ranging from one to five, indicating that respondents felt the focus child was healthy. The respondents were categorized by race and ethnicity: 14.1% were White, 39.0% were African American, 33.1% were Hispanic, 8.6% were Asian/Pacific Islander, and 5.2% were of another racial or ethnic group. In term of education, respondents were split fairly equally between those with less than high school (33.5%), with a high school education or GED (35.3%), and with more than high school (31.2%). The proportion of households with income below 15,000 (in 2002 dollars) was high (41.1%) and only 26.2% of the sample had household incomes over $30,000. Less than one-third (31.8%) of the sample households owned their own home. The average length of time respondents had lived in the neighborhood was 9.29 years (SD = 10.06). On average, respondents reported satisfaction with the focus child's school: The mean satisfaction score was 4.15 (SD = 1.02) on a scale ranging from 1 to 5. With respect to neighborhood involvement, 39.7% had taken action to improve their neighborhood and 32.3% had volunteered in their community.

With respect to neighborhood characteristics (presented in Table 1), the mean safety rating of the neighborhoods was 4.55 on a 6 point scale. On average, the neighborhoods were 22.5% Non-Hispanic White, 32.0% African American, 36.3% Hispanic with the remainder identifying as Asian or another race. Just fewer than 30% of the residents in the average neighborhood were in households below the Federal poverty threshold, and the average percentage of residents who had moved in the last five years was 49.7%.

Table 1
Percentages, means, and standard deviations of individual/household and neighborhood predictors

Individual level predictors	
	%/*M* (SD)
Participation in out-of-school activities	
Daily	11.4
2–3 time per week	20.3
Weekly	16.9
Occasionally	12.9
Never	38.5
Child sex	
Boy	51.2
Girl	48.8
Child age	
5 to 10	45.6
11 to 13	24.2
14 to 17	30.2
Child health	4.07 (0.98)
Race/ethnicity	
White	14.1
African American	39.0
Hispanic	33.1
Asian/Pacific Islander	8.6
Other	5.2
Education level of respondent	
More than high school	31.2
High school grad or GED	35.3
Less than high school	33.5
Household income	
More than $30,000	26.2
$15,000 to $30,000	32.7
Less than $15,000	41.1
Home ownership	31.8
Years in neighborhood	9.29 (10.06)
Satisfaction with child's school	4.15 (1.02)
Taken action to improve neighborhood	39.7
Volunteers in neighborhood	32.3
Neighborhood level predictors	
Safety rating	4.55 (0.37)
Poverty rate	29.58 (12.87)
Racial/ethnic composition	
Percent White	22.48 (28.85)
Percent African American	32.04 (32.24)
Percent Hispanic	36.31 (35.32)
Percent moved last 5 yrs.	49.67 (11.88)

4.2. Level 1 model of individual/household influence on weekly or more participation

The first step in our analysis involved estimating an unconditional model without any individual or neighborhood predictors. The intercept, or average log odds of participating in weekly out-of-school time activities across the census tracts was −0.0692 (SE = 0.05). Assuming the tract log odds of weekly activity to be approximately normally distributed, we would expect about 95% of tracts to have values between −0.5234 and 0.3851. Converted to probabilities, 95% of neighborhoods are estimated to have participation rates between 0.37 and 0.60 in at least weekly out-of-school activities. This suggests considerable variation between neighborhoods in term of children's participation in weekly out-of-school activities. However, these differences not only reflect factors in the neighborhoods, but also may reflect differences in the children or families that reside in them. In order to account for these within neighborhood differences, we estimated a conditional model with random intercept that includes individual and household characteristics. The results are displayed in Table 2, Model 1.

Compared to children age 14 through 17, younger children (ages 5–10) were less likely to participate in out-of-school activities (OR = 0.67) and middle school age children (age 11–13) were more likely to participate (OR = 1.38). Health was positively related to participation in out-of-school activities, for each unit increase in respondent perceived child health, the odds of participation increased by 1.26. In terms of race and ethnicity, African American children were significantly more likely to participate (OR = 1.54) in out-of-school activities than were White children. There were no significant differences in rates of participation between Hispanic or Asian/Other children and White children. Children in households where respondents had less then a high school education were less likely to participate in out-of-school activities compared to households where respondents has more than high school (OR = 0.66). There was a small but significant positive effect on participation by years the respondent had lived in the neighborhood. Satisfaction with the child's school was positively correlated with out-of-school activities (OR = 1.13), as was respondents volunteering in the neighborhood and taking action to improve their neighborhood, which increased the odds of participation in out-of-school activities by 76% and 35% respectively.

4.3. Level 2 model with neighborhood level predictors

At this stage, we added neighborhood level variables to the model already containing the significant individual/household variables. As shown in Table 2, Model 2, neighborhood safety has a significant, positive effect on participation in at least weekly out-of-school activities. For each unit increase in the neighborhood safety rating, the odds of weekly participation in out-of-school activities increased by almost 40%. Neither neighborhood poverty rate nor the dichotomous race/ethnicity indicator (i.e. percent not White) were statistically significant in this model. Coefficients for the individual level variables did not markedly change with the addition of the neighborhood level variables.

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Table 2
Final estimates for logistic (Bernoulli) models predicting weekly out-of-school activities

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coef	OR	(95% Cl)	Coef	OR	(95% Cl)	Coef	OR	(95% Cl)	Coef	OR	(95% Cl)	Coef	OR	(95% Cl)
Intercept	−0.249	0.78	(0.56, 1.08)	−0.169	0.84	(0.60, 1.20)	−0.264	0.77	(0.53, 1.11)	−0.353*	0.70	(0.48, 1.03)	−0.498***	0.61	(0.40, 0.92)
Individual/household level variables															
Age 5–10[a]	−0.399***	0.67	(0.54, 0.83)	−0.394***	0.68	(0.55, 0.83)	−0.381***	0.68	(0.55, 0.84)	−0.382***	0.68	(0.55, 0.84)	−0.386***	0.68	(0.55, 0.84)
Age 11–13	0.325***	1.38	(1.09, 1.77)	0.322***	1.38	(1.08, 1.76)	0.326***	1.39	(1.09, 1.77)	0.334***	1.40	(1.09, 1.78)	0.337***	1.40	(1.10, 1.79)
Child health	0.228***	1.26	(1.15, 1.38)	0.228***	1.26	(1.15, 1.38)	0.226***	1.25	(1.14, 1.38)	0.228***	1.26	(1.14, 1.38)	0.229***	1.26	(1.15, 1.38)
African American [b]	0.432***	1.54	(1.16, 2.05)	0.342**	1.41	(1.02, 1.95)	0.421	1.52	(1.09, 2.14)	0.468	1.60	(1.12, 2.27)	0.625***	1.87	(1.27, 2.75)
Hispanic[b]	−0.040	0.96	(0.72, 1.29)	−0.139	0.87	(0.62, 1.22)	−0.047	0.95	(0.67, 1.35)	0.023	1.02	(0.71, 1.47)	0.182	1.20	(1.81, 1.78)
Asian/Other[b]	0.232	1.26	(0.89, 1.78)	0.168	1.18	(0.82, 1.71)	0.294*	1.34	(0.91, 1.97)	0.335*	1.40	(0.94, 2.08)	0.499***	1.65	(1.07, 2.53)
Less than high school[c]	−0.414***	0.66	(0.52, 0.83)	−0.419***	0.66	(0.52, 0.83)	−0.421***	0.66	(0.52, 0.83)	−0.415***	0.66	(0.52, 0.83)	−0.430***	0.65	(0.52, 0.82)
High School/GED[c]	−0.190*	0.83	(0.66, 1.03)	−0.193*	0.83	(0.66, 1.03)	−0.198*	0.82	(1.00, 1.02)	−0.189*	0.83	(0.66, 1.03)	−0.215*	0.81	(0.65, 1.01)
Years in neighborhood	0.008*	1.01	(1.00, 1.02)	0.007*	1.01	(1.00, 1.02)	0.008*	1.01	(1.00, 1.02)	0.007*	1.13	(1.00, 1.02)	0.008*	1.01	(1.00, 1.02)
Satisfaction with child's school	0.126***	1.13	(1.04, 1.24)	0.125***	1.13	(1.04, 1.24)	0.126***	1.14	(1.04, 1.24)	0.124**	1.13	(1.04, 1.24)	0.128***	1.14	(1.04, 1.24)
Taken action to improve Neighborhood	0.299***	1.35	(1.11, 1.64)	0.300***	1.35	(1.11, 1.64)	0.299***	1.35	(1.11, 1.64)	0.313***	1.37	(1.12, 1.66)	0.302***	1.25	(1.11, 1.65)
Volunteers in neighborhood	0.566***	1.76	(1.44, 2.16)	0.568***	1.77	(1.44, 2.16)	0.536***	1.71	(1.39, 2.10)	0.569***	1.77	(1.44, 2.16)	0.573***	1.77	(1.45, 2.17)
Neighborhood level variables															
Safety rating				0.334*	1.40	(0.97, 2.00)	1.482***	4.40	(1.74, 11.15)	0.361*	1.44	(1.00, 2.06)	0.392*	1.48	(1.03, 2.13)
Poverty rate				0.005	1.01	(1.00, 1.02)	0.005	1.01	(1.00, 1.02)	−0.017	0.98	(0.96, 1.00)	0.005	1.01	(1.00, 1.02)
Percent non-White				0.003	1.00	(1.00, 1.01)	0.003	1.00	(1.00, 1.01)	0.004	1.00	(1.00, 1.01)	−0.007*	0.99	(0.98, 1.00)
Cross-level interactions															
African American×Safety							−1.133**	0.32	(0.12, 0.86)						
Hispanic×Safety							−1.013*	0.36	(0.13, 0.98)						
Asian/Other×Safety							−0.624	0.54	(0.16, 1.78)						
Volunteer×Safety							−0.747***	0.47	(0.27, 0.85)						
African American×Poverty										0.029**	1.03	(1.01, 1.05)			
Hispanic×Poverty										0.021**	1.02	(1.00, 1.05)			
Asian/Other×Poverty										0.024**	1.03	(1.00, 1.05)			
African American×non-White													0.02***	1.02	(1.01, 1.03)
Hispanic×non-White													0.01**	1.01	(1.00, 1.03)
Asian/Other×Non-White													0.01*	1.01	(1.00, 1.03)
Yrs. in neigh.×non-White													−0.0003**	0.990	(0.99, 1.00)

*$p<0.10$, **$p<0.05$, ***$p<0.01$.
[a] Age 14–17 is the reference category.
[b] White is the reference category.
[c] Some college is the reference category.

4.4. Models with cross-level interactions

The next step in model building was to test a series of cross-level interactions between neighborhood characteristics and individual/household variables. Those that were statistically significant appear in Table 2, Models 3, 4, and 5.

Table 2, Model 3 shows several significant cross-level interactions between household level variables and neighborhood safety. First, there is a significant interaction between the race/ethnicity of the household and neighborhood safety, such that perceived safety has a stronger influence on whether White children participate in out-of-school activities than for other racial/ethnic groups. In fact, for White children, their odds of participation increase more than four fold for each unit increase in the mean neighborhood safety scale. However, in comparison to Whites, the relationship between safety and participation in out of school activities is less strong among African American

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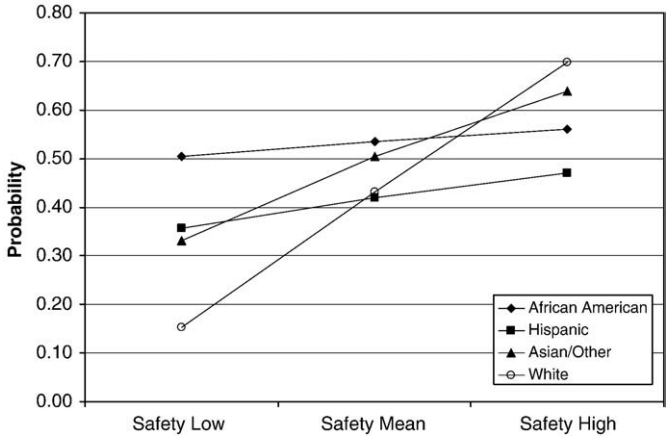

Fig. 1. Predicted probability of participation in weekly out-of-school activities by race and neighborhood safety.

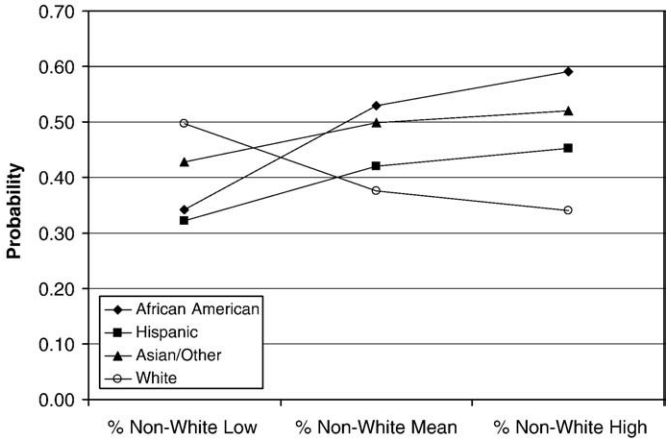

Fig. 3. Predicted probability of participation in weekly out-of-school activities by household and neighborhood race.

and Hispanic children, and there is no significant difference between the effect of safety on Whites as compared to Asians/others (see Fig. 1). Second, Table 2, Model 3 shows a significant cross-level interaction between safety and volunteering in the neighborhood. For families that volunteer, safety problems in the neighborhood are less likely to impede children's participation in out-of-school activities.

In Table 2, Model 4, cross-level interaction effects with neighborhood poverty are displayed. As compared to Whites, all of the other race and ethnic groups are less likely to be affected by neighborhood poverty. In fact, African American, Hispanic, and Asian/other children participated in out-of-school activities at slightly higher rates if their neighborhood poverty rate was higher. This pattern is graphically represented in Fig. 2.

Finally, Table 2, Model 5 demonstrates that there are several statistically significant cross-level interactions between household characteristics and the racial/ethnic composition of the neighborhood. First, the effect of the dichotomous neighborhood racial/ethnic composition indicator (i.e. percent not White) on participation in out of school activities is negative for White children, but positive for children in the other racial and ethnic groups studied here (this is shown graphically in Fig. 3). Second, the cross-level interaction (shown in Table 2, Model 5) between percent of the neighborhood that is non-White and years in the neighborhood suggests that the influence of racial and ethnic make up of the neighborhood is slightly more likely to reduce participation in out of school activities among longer term residents.

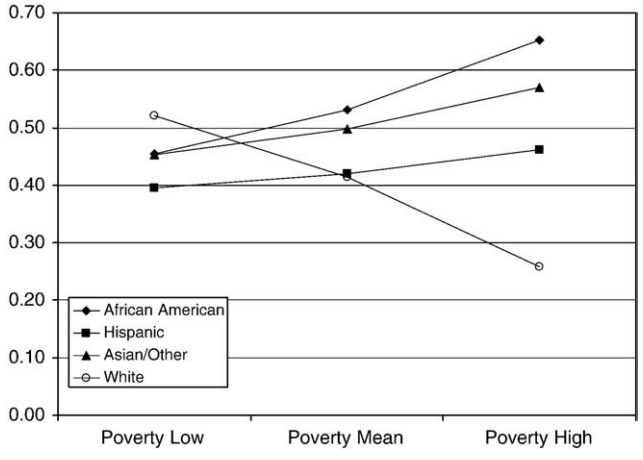

Fig. 2. Predicted probability of participation in weekly out-of-school activities by race and neighborhood poverty.

4.5. Multinomial models

The previous HGLM models used a dichotomous measure of participation, comparing the group that participated at least weekly in out-of-school activities with those who never or occasionally participated. In order to determine whether our results were sensitive to this particular specification of the dependent variable, we explored using five categories of participation in a multinomial model. The results of these analyses (not shown) were quite similar to the logistic specification suggesting that the findings are robust to various ways of categorizing the dependent variable. However, the effect of the race/ethnicity variable does differ depending on the frequency of participation category. Specifically, African American children have a higher probability of participating in daily activities, while Hispanic and Asian/other children have a higher chance of participating in weekly activities. Additionally, all independent variables were poorer predictors of occasional participation than the other categories of frequency.

5. Discussion

The neighborhoods included in this study were the types of settings where organized programs for out-of-school activities are thought to be needed. The residents in these areas were predominately low income and represented ethnic and racial groups that are often underserved by organized programs. However, within these neighborhoods the factors we found to be related to participation, if taken into account, might help expand the reach of these programs to a larger group of children and youth.

The study found that children and youth were more likely to participate in organized out-of-school activities if their parents were involved in the neighborhood. Length of residence in the neighborhood, which is assumed to be related to having more neighborhood ties, was predictive of participation. Moreover, children from households in which the adults were active in community volunteering or had taken action to improve their neighborhood were more likely to engage in organized out-of-school activities. Additionally, the adults' satisfaction with the local schools, which may be related to their school involvement, was associated with participation in out-of-school activities. This suggests that families that are connected with networks, institutions, and associations in their community are more willing and able to assist their children in accessing organized out-of-school activities and in attending on a more frequent basis.

Neighborhood safety concerns were found to be a barrier to participation in organized out-of-school activities. African Americans and Hispanics, though, as compared to Whites were less inhibited in

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their participation due to lack of safety. This is consistent with the literature discussed in the background section documenting that there are racial and ethnic differences in how neighborhood problems are perceived and evaluated (Sampson & Raudenbush, 2004; Charles, 2000). For Whites, safety concerns may be perceived as quite threatening and prevent them from allowing their children to leave home to engage in activities. African Americans and Hispanics may view neighborhood problems as less serious or be more able to seek out activities that offer a sense of security even though the immediate neighborhood presents some unsafe conditions. This possibility is supported by research showing that many African American parents go to great lengths to access resources for their children despite limitations that exist in their neighborhoods, often through seeking the assistance of family and friends in other locales (Jarret, 1995).

Neighborhood poverty, a factor associated with social disorder in other studies (e.g. Sampson et al., 1997), did not deter participation in organized out-of-school activities for any race or ethnic group with the exception of Whites. This pattern of greater neighborhood impact on Whites is similar to our finding regarding the influence of safety and could either be due to differential appraisal of poverty in Whites as compared to the other groups, or in greater resourcefulness of the other groups in the face of the adversity resulting from neighborhood poverty. An additional explanation, which could not be investigated with the data in this study, is that specially targeted out-of-school programs were more available in poorer neighborhoods and were differentially able to attract participants depending on their race or ethnicity.

The differential sensitivity of residents to the racial and ethnic composition of their neighborhood is also suggested by this study. Whites participated in out-of-school activities at higher rates when the neighborhood had a higher proportion of White residents. The opposite was true for all other racial and ethnic groups in the study who participated at higher rates when a higher proportion of residents were African American, Hispanic, Asian, or of other races. Due to limited numbers of each ethnic and racial group in many of the study neighborhoods, we were not able to determine the degree to which higher participation was fostered by being of the same race or ethnicity as the majority of residents or whether simply having some members of the community of one's own grouping was adequate. Nevertheless, the positive effect of diversity was particularly apparent for African American children's participation in out-of-school programs. Again, we were unable to determine whether targeted programs may have been more available in the neighborhoods characterized by diversity.

5.1. Limitations

This study has several limitations. The first is that we do not have any measure of the quality of the organized out-of-school activities in which the children participated. The youth development field has begun to identify features of programs that are more or less successful in promoting positive development in at-risk youth, such as structure, adult supervision, and types of activities. In fact, not all programs are even helpful as evidenced by the finding that some unstructured recreation programs attract youth who have antisocial tendencies, making the atmosphere within these programs more conducive to further behavioral problems (Mahoney, Stattin, & Lord, 2004).

A second limitation is that we were not able to control for the types of activities that were available in or near the neighborhoods in this study. However, it is possible that this differed across the neighborhoods and that availability was correlated with some of the other variables in the study. For example, a study in one Midwestern state found a relationship between youth participation in organized out-of-school activities, their perceptions of the opportunities available, and the extent to which the community was perceived as socially cohesive (Morrissey & Werner-Wilson, 2005).

Another limitation of this study is that we were not able to control for selection of families into neighborhoods. In other words, an alternative explanation for neighborhood differences in participation in out-of-school activities is that families and children predisposed to participate end up in neighborhoods with particular characteristics. Selection bias is probably the biggest challenge facing neighborhood effects research in general (Sampson et al., 2002). A related problem, though, is the possibility that several household characteristics, which were controlled for in the level one model, were also affected by the neighborhood characteristics. This would have the effect of attributing to individuals that which is due to neighborhoods (Bingenheimer & Raudenbush, 2004). For instance, neighborhood safety may have influenced parent's willingness to volunteer in their neighborhoods. In a cross-sectional, non-experimental study such as this, it is not possible to conclusively separate individual/household and neighborhood effects.

The issue of neighborhood selection further complicates any interpretations in this study regarding the influence of race and ethnicity. For example, this study showed that neighborhood contextual factors, such as safety and poverty, seemed to have relatively weak effects on African American and Hispanic residents. Yet we know that racial and economic segregation often limit the degree to which families are able to freely move throughout their metropolitan areas and to select neighborhoods that are safer or more affluent. As such race/ethnicity are inextricably tied to neighborhood conditions and are difficult to disentangle statistically.

A final limitation has to do with the causal direction of effects, especially in the relationship between household community participation and child participation in out-of-school activities. Although the statistical model was one-directional, these types of involvement are probably mutually reinforcing. Children who are engaged with activities in the community are often the impetus for parental involvement, and attendance at children's events may foster connections within the neighborhood that would not otherwise have developed. Moreover, parental community participation may result in more opportunities for out-of-school activities being available in particular neighborhoods.

5.2. Implications

Out-of-school programs will achieve greater success if they have an understanding of the neighborhood context in which they operate. Programs need to be mindful of safety in the surrounding communities and whether families and children feel secure when they are out and about. Moreover, it is important to consider the possibility that various racial and ethnic groups residing in the neighborhood may respond differently to neighborhood conditions and may be influenced in the participations rates by their relative numbers in the neighborhood population. It is important for programs to reach out more deliberately to children whose race or ethnicity makes them or their families feel isolated within the neighborhood. Moreover, even though a neighborhood may be low income, programs should recognize that there may be differences in socio economic status of the families within the community that will affect their children's participation in the programs.

Out-of-school activities cannot be viewed in isolation, but must be seen as part of a larger context in which adults are also encouraged to become involved in the community. In fact, efforts to raise parent involvement in out-of-school activity programs could foster both their own increased connectedness to the neighborhood and their children's attendance in the programs. Additionally, out-of-school programs need to include provisions for keeping children safe in neighborhoods where lack of safety is a problem. Even though unsafe conditions take less of a toll on participation rates for African American and Hispanic children than for Whites and Asians and other races, there are probably other consequences of traversing

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unsafe environments that were not studied here but deserve further investigation. Moreover, if children have to leave unsafe neighborhoods to seek their out-of-school activities elsewhere, this can place additional burden on their families and does little to contribute to social ties within the community. Such social network connections can be vital for improving social control and engaging residents in actions that are beneficial for the community.

The findings of this study support the idea that children benefit when their families are engaged with and have social ties in their communities and when their neighborhoods are relatively safe. In the future, it will be useful to study whether efforts to increase social connectedness and community safety lead to higher participation in out-of-school activities. Additionally, it will be important to determine the degree to which children's involvement in activities is helpful in increasing the engagement of their parents in the community. Finally, there is the possibility of a threshold effect, such that it requires a sufficient number of the community's children to be regularly involved in organized out-of-school activities to produce the requisite increase in social organization so that there is a positive spillover that benefits all residents. Such studies would help to inform questions of the provision of out-of-school programs within a community context and the potential benefits of community participation and involvement in these programs.

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