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Perceived Neighborhood Characteristics and Parental Role in Physical Activity of African American Youth

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Perceived Neighborhood Characteristics and Parental Role in Physical Activity of African American Youth

Abstract

Introduction: Lack of physical activity (PA) serves as one of the contributing factors to pediatric obesity in African American (AA) youth.

Objective: Further examination of the Social Ecological Model [SEM] influences on PA in AA youth is vital. The purpose of this pilot study is to explore environmental factors, built environment (BE) and parental role, in PA promotion.

Methods: Using mixed method data collection, a convenience sample of 28 AA parents/caregivers of school-aged children (6-12 years) enrolled in Chicago Youth Programs (CYP) completed an online survey. Parents/caregivers along with their child participated in focus group sessions (n=18 parent/child dyads). Parent/child dyads (n=3) wore monitors (i.e. accelerometer and Global Positioning System [GPS] tracking device) to obtain preliminary PA/GPS data. Kruskal-Wallis, Kendall tau and Spearman's rank correlation, and systematic analysis were used for quantitative data and content analysis for qualitative data.

Results: In addition to a significant positive correlation between parent's PA and child's PA, ($r=0.76$, $p<.05$), parent's perceived BE had a significant effect on parent's self-reported PA (parent's PA and their child's PA) [$p < 0.05$]. Major themes: *PA Practices, PA Importance, Role Models, Neighborhood Characteristics, and Cons and Areas of Improvement for PA* emerged.

Conclusions: Although PA barriers exist, parents emphasized the importance of CYP in promoting PA among AA youth. Working with community-based programs, like CYP, in the development of PA interventions to reduce pediatric obesity is recommended. Future research with an experimental approach can confirm the relationship of BE and parental role on child's PA in AAs.

Keywords: African American, family health, physical activity, built environment, Global Positioning System

Introduction

Regular physical activity (PA) is one of the ways to reduce risk to chronic diseases and improves the cognitive function of children, specifically school-aged (5 to 13 years) (U.S. Department of Health and Human Services, 2018). Children and adolescents (aged 6 to 17 years) should engage in 60 minutes or more of moderate-to-vigorous PA daily which entails aerobic, muscle-strengthening, and bone-strengthening activities (U.S. Department of Health and Human Services, 2018). African Americans (AA) are not engaging in recommended PA guidelines (CDC, 2017a). Childhood obesity is prevalent in AA girls at 21% and 21% for AA boys when compared to non-Hispanic white girls (14%) and non-Hispanic boys (13%) (CDC, 2017b). With the many benefits associated with regular PA, attention is needed in promoting PA participation in AA youth to in turn reduce childhood obesity (Taylor et al., 2017).

Increasing PA in youth requires parental support (Duncan et al., 2015; Hasson, 2018; Liszewska et al., 2018; Yao & Rhodes, 2015), general encouragement (Liszewska et al., 2018), role modeling [i.e., being active themselves], and material support [i.e., financial, logistic, co-participation] (Garriguet et al., 2017). Access to recreation facilities, neighborhood aesthetics (favorable/unfavorable), and neighborhood safety (i.e., crime and traffic) are some of the attributes of built environment (BE) related to PA (Sallis et al., 2012). Features of the BE are associated with PA in adults (McCormack & Shiell, 2011). In AA adults and youth, there are many individual (e.g., cultural and self-efficacy) and environmental factors (e.g., lack of access to parks and recreation/fitness facilities and neighborhood characteristics) that influence PA (Alexander et al., 2015; Authors, 2016; Barr-Anderson et al., 2017).

An ecological perspective helps identify the environmental factors on PA (Sallis et al., 2012). SEM (Social Ecological Model) is a theoretical framework that enables a better

understanding of the various factors [biological, environmental, and political] on behavior (Stokols, 2000; Stokols, 2004). Using SEM as a guide, the multiple levels of influence such as intrapersonal (biological and personal factors), interpersonal (relationships and social networks); community (neighborhood); and the social/political (Stokols, 2000; Stokols, 2004) on the PA of AA youth can be explored. There are few effective interventions addressing the multiple levels of influence on PA. Effective interventions addressing childhood obesity in AA youth should be culturally-tailored (Jones et al., 2014; Lofton et al., 2016) and family-based (Jones et al., 2014). It is necessary to examine parental role on child's PA and determine how child's PA is associated with the BE, to better inform interventions promoting PA in AA youth. The primary aims are 1) to determine how the parent's PA habits are associated with child's PA habits; 2) describe how the parent's perceived BE is associated with parent's and child's PA; and 3) explore the association of BE and PA participation using objective measures. This will enable us to pinpoint the environmental factors (parent's PA, parental support of PA, and BE) that influence the school-aged child's PA through a SEM perspective. We believe that using a mixed method approach will lead to rich, comprehensive data (Wisdom et al., 2012) on the environmental factors such as BE and parental support for the development of effective culturally-tailored PA interventions in AA youth.

Methods

Sample and Setting

AA parents/caregivers enrolled in Chicago Youth Programs (CYP) with children ages 6-12 years were eligible this study. CYP, founded in 1984, improves the health and life opportunities of at-risk youth residing in Chicago's poorest neighborhoods (CYP, 2016). Eligible parents/caregivers enrolled in CYP were recruited through 1) an information session

(i.e., study overview) held by the first two authors before data collection, 2) study information (i.e., flyers) distributed, and 3) support from CYP. CYP provided space to conduct information session and conduct focus group sessions.

Parents/caregivers received access to the online survey through the link provided on flyer. For focus group sessions, interested parents/caregivers contacted the primary investigator (PI) via telephone and completed a telephone screening conducted by the PI. The PI scheduled parents/caregivers that were able to attend a focus group session with their child. The university's institutional review board approved all study procedures. Using mixed method data collection, a pilot study was conducted from June 2018 through October 2018.

Quantitative and Qualitative Data Collection

Online survey. Parents/legal guardians received access to an online survey via Qualtrics by clicking on a link provided on the flyer. The online survey via Qualtrics took approximately 15-20 minutes to complete consisting of the following measures: demographics (eight items), four items from Family Eating and Activity Habits Questionnaire-Revised [FEAQ-R] (Golan, 2012) and 67 items of the Neighborhood Environment Walkability Scale-Youth [NEWS-Y Parent Version] (Rosenberg et al., 2009).

The FEAQ-R Leisure Time Activity subscale assesses participation in physical and sedentary activities by determining the frequency of parents and their child engaging in physical and sedentary activity (Golan, 1998). The score of this subscale is obtained by summing the specific numbers (i.e., frequency scores) (Golan et al., 2012). Golan and colleagues evaluated the psychometric properties in a randomized control trial and in a naturalistic, community-based among families with children 6–12 years of age from different ethnic populations. Reliability/internal consistency of the items was estimated using Cronbach's alpha for activity

level ($\alpha = 0.82$) (Golan et al., 2012). The Leisure Time Activity subscale of the FEAQ-R for this study appeared to have good internal consistency ($\alpha = 0.93$).

The NEWS-Y Parent Version consists of items that measure perception of neighborhood design features that may be related to physical activity in youth. NEWS-Y consists of the following subscales: Land-use mix – diversity, Neighborhood recreation facilities, Residential density, Land-use mix – access, Street connectivity, Walking/cycling facilities, and Neighborhood aesthetics; Pedestrian and automobile traffic safety and Crime safety (Rosenberg et al., 2009). Participants score items on a four-point scale ranging from 1 (Strongly disagree) to 4 (Strongly agree) for most of the subscales. Higher score on subscales: Land-use mix – diversity, Neighborhood recreation facilities, Residential density, Land-use mix – access, Street connectivity, Walking/cycling facilities, and Neighborhood aesthetics denote higher walkability. Higher score on subscales: Pedestrian and automobile traffic safety and Crime safety denotes lower walkability (Rosenberg et al., 2009). Rosenberg and colleagues used test-retest Intraclass Correlation Coefficient (ICC) to assess inter-rater reliability which ranged from 0.56 to 0.87. Scoring for the NEWS-Y can be found on <http://www.midss.org/sites/default/files/news-y-scoring.pdf>. Cronbach's alpha was used to measure reliability of NEWS-Y subscales in this study, which was 0.86 indicating acceptable internal consistency. Each parent or legal guardian was given a gift card following completion of the online survey.

Focus group session. The principal investigator (PI) screened all potential participants (parents/legal guardians) by telephone to determine eligibility. Participants provided verbal consent during the telephone screening that took approximately 10 minutes to complete. Each parent/child dyad were scheduled to attend one evening focus group session held at one of CYP's sites (i.e., Washington Park and Uptown Youth Programs). A total of seven audio-

recorded focus group sessions were held. Parents completed a paper-based questionnaire with on pre-GPS feasibility survey items (Duncan et al., 2014) and demographics at the beginning of the focus group session. Each session consisted of eight or less participants (four parent/child dyads). The PI that racially and ethnically matched study participants facilitated all session. Sessions lasting 60 to 90 minutes. Two members of the research team discussed confidentiality, the format of the session, and obtained informed consent (written informed consent and assent). Focus group questions were developed on the basis of literature review, specific aims of the study, and the SEM. Focus group questions addressed PA behaviors and neighborhood characteristics (BE) in which sample questions are in the Appendix. Each parent/child dyad was given a \$20 gift card following completion of the focus group session.

Physical activity and location monitoring. A subset of the overall study, (four parent/child dyads) were recruited to test the feasibility of collecting joint PA and location of PA. One parent/child dyad from each focus group participated in wearing an accelerometer-based activity monitor and Global Positioning System (GPS) tracking device for seven days, five weekdays/two weekend days. The selection was strictly based on the parent/legal guardian's expression of interest in participating with no concerns about tracking their activity and location of PA. A pendant style tri-axial accelerometer (PAMSys Biosensics LLC., Mass., USA) and GPS monitor (QStarz BT-Q1000XT) owned by research team members were used. Each parent/child dyad were instructed on using and recharging the accelerometer and GPS monitor. Each parent/legal guardian provided written informed consent for themselves and parental permission for their child and their child provided written assent prior to receiving the accelerometer and GPS device. Each parent/child dyad was given gift card upon return of monitors.

Statistical Analysis

Data manipulation and statistical analyses were performed using R software and Statistical Analysis System [SAS] (Version 9.4 SAS Institute Inc). The average values and standard deviations of the outcome variables were calculated for the numerical variables. Percentages and frequency distribution tables were created for the categorical variables. Items with more than 10% missing data and those with limited response distributions were eliminated. All the non-demographic variables were ordinal and our sample size was not large enough, resulting in inability for normality assumption to be satisfied. As a result, we performed a nonparametric one-way ANOVA using Kruskal-Wallis to test the association between environmental factors and PA of AA parent/child dyads. The measures of correlation using Kendall's tau and Spearman's rho was performed to delineate the relationships between various measures with a significance level of 0.05. Specifically, Kendall's tau enabled a non-parametric measurement of the association between the qualitative variables. Reliability analysis of FEAQ-R Leisure Time Activity subscale consisting of four items and NEWS-Y Parent version questionnaire were performed using Cronbach's alpha. All testing was two-sided with p values <.05 considered statistically significant. No adjustment was made for multiple comparisons.

The PA/GPS data (wearing monitors) was analyzed to determine characteristics of the BE the activity space of the parent and their child. PA/GPS data was examined to determine an association between child's PA and parent's PA and PA location. This analysis collected latitude and longitude data at a given time interval, which was mapped once the monitors was returned. Raw accelerometer data was processed to detect postural events such as walking, standing, lying and sitting (Hwang et al., 2018). GPS data was processing using a developed algorithm (Hwang et al., 2017) in which the duration of weight bearing activities (combination of standing and walking time) was extracted for analysis.

Content analysis was conducted for data retrieved from focus group sessions involving three research team members. Content analysis entails a systematic analysis to look for common themes or patterns in the data (Trochim & Donnelly, 2008). The focus group audio recordings were transcribed verbatim and initially coded individually by two members of the research team, organizing data into themes. The two research team members finalized themes via consensus discussion. The notes taken during each focus group session were typed out by one of the research team members and merged to supplement transcripts.

Results

Only participants with less than 10% missing data (28 parents/legal guardians) were included in this study and provided an electronic informed consent. Demographic data for the parents/legal guardians and their child are included in Table 1. Of the 28 participants (parents/legal guardians), 18 participated in a focus group session with their child. These participants were majority female ($n=26$), with an educational level of high-school completion or its equivalent ($n=15$, 53%) to some college courses no degree ($n=7$, 25%). Most of the participants were single ($n=23$, 82%), and employed either full-time ($n=10$, 36%) or part-time ($n=10$, 36%), earning a household income of less than \$35,000 ($n=27$, 96%) annually.

Quantitative Findings

The first aim was to describe the association between the parent's and child's PA habits. Spearman correlation analysis revealed a strong linear relationship between parent's PA (*number of hours parent engage in physical and sedentary activities*) and child's PA (*number of hours child engage in physical and sedentary activities*) ($r = 0.76$, $p < .05$). In addition, for the focus group, Kendall's Tau analysis revealed a positive relationship between parent's PA and child's PA ($r = 0.67$, $p < .05$).

The second aim was to describe the association of the perceptions of neighborhood design (BE) with PA participation among parent/child dyads. Parents reported PA for themselves and their children (i.e., FEAQ-R subscale) and neighborhood design features (NEWS-Y items). Table 2 displays mean scores for selected FEAQ-R subscale items and NEWS-Y items. The descriptive statistics (FEAQ-R) in Table 2 show that parents reported more time engaging in sedentary behavior (i.e., watching television or playing games) than in activities related to PA (i.e., tennis, gymnastics, dancing, walking, cycling, and attending classes).

Parents self-reported on NEWS-Y Neighborhood safety or presence of crime items. A fitted model using the NEWS-Y items pertaining to parents' concerns regarding their child's outdoor play (e.g., within neighborhood such as local streets or parks) alone or with friends as independent variables, had a significant effect on parents' and children's PA [FEAQ-R subscale] ($p < 0.05$).

The third aim was to gain an understanding of the association between parent/child dyads' BEs and PA participation through joint PA/GPS data. Four parent/child dyads were recruited from the 18 parent/child dyads that participated in the focus group sessions. Approximately, three parent/child dyads (three parents and three children) agreed to participate in wearing monitors [an accelerometer for PA monitoring and GPS device for location monitoring]. Among the three parent/child dyads that wore the monitors, their responses to pre-feasibility of GPS questions show comfortability with PA (accelerometer) and PA location tracking (GPS data). However, the participants (parent and their child) did not wear the accelerometer and GPS device for seven days of consecutive use. All of the three children in the three parent-child dyads failed to wear either the monitors [PAMSys monitor or GPS loggers] for more than three hours after the first day of receiving them making it infeasible to synchronize PA

data with GPS data in a reliable manner. Instead, objective PA data and GPS-based location data were analyzed separately. To assess PA in a fair way, only the first day wear time detected was included in analysis. Processing of the three parents' GPS data allowed us to determine features of the BE in the three parents' experienced activity spaces. For analysis purpose, 'experienced' activity spaces were defined as 660 feet buffer (i.e., approximately a three minute walk) of locations with direct exposure (i.e., places a participant stayed for over five minutes for any activities and routes a participant took on foot). Primary activity spaces of Parent 1 and Parent 2 are the South Side of Chicago, whereas those of Parent 3 are the North and West Side of Chicago.

Experienced activity spaces were overlaid with the BE variables available from the 2006-2013 Walkability Index dataset by Environmental Protection Agency [EPA] Geographic Information Systems [GIS] application (EPA, 2018). BE variables for each parent is calculated as the weighted average of BE. BE variables within experienced activity spaces are weighted differently depending on the duration of stay (or trip). The longer the duration, the more weight is given. Table 3 shows values of BE variables in comparison to the mean of Chicago for the three parents. This reveals that the activity space of Parent 3 has more diverse land use mix than those of other participants. Intersection density was highest in the activity space of Parent 1. The distance to the nearest transit was farthest (at 231 meters) for Parent 2, compared to 192 meters for other participants. It can be generalized that Parent 1 is exposed to the most walkable and safest places and Parent 2 is exposed to the least walkable and most unsafe places.

Parents (n=18) reported on neighborhood characteristics related to PA in focus group sessions, which correlated with BE variables calculated. For instance, Parent 2 and Parent 3 reported safety concerns (i.e., crime). GPS/GIS analysis for these parents showed that density of

violent crime in activity spaces of these two participants were much higher than city average. Moreover, Parent 2 stated “nothing to do”, GPS/GIS reflected low land use mix (no non-residential places nearby). Conversely, GIS data often differed from parents’ responses on perceived BE (NEWS-Y items). For example, Parent 1 responded that the nearest public park from home was over 31 minutes away whereas GIS analysis revealed a small park was within a three-minute walk and a large park was within 10 minutes. Parent 3 responded that the nearest grocery store was 21-30 minutes away, while GIS analysis show a grocery store (Jewel-Osco) was within 10 minute walk.

Given that data collected from only two parent/child dyads (Dyad 2--Parent 2/Child 2 and Dyad 3--Parent 3/Child3) were usable and these two dyads were compliant with activity monitor for the first day of usage, only that portion of the data was analyzed. Figure 1 shows the weight bearing activity (i.e., standing and walking) for parent/child dyads. For the rest of the six-day period, either the parent or the child was non-compliant with wearing the monitors making it challenging for any comparison of activity between parents and children. Although the data is limited, parents’ PA pattern seems to be correlated positively with that of the child. Parent 2 has the higher level of PA than Parent 3 while activity spaces of the former was less walkable and less safe than those of the latter. The relationship between PA and BE appears to be the opposite of what was hypothesized (the more walkable/safe, the more PA). It should be, however, noted that both participants (Parents 2 and 3) live, work, and play in places where walkability and safety is below the average of Chicago.

Qualitative Focus Groups

Parents (n=18) that completed the online survey participated in a focus group session with their school-aged child (n=18, 10 males and 8 females). AA parent/child dyads (n=18)

responded to interview questions guided by SEM (see Appendix). Findings from seven total focus group sessions (a total of 18 parent/child dyads) are summarized under the following major themes in relation to their neighborhood: 1) PA practices, 2) PA importance, 3) Role models, 4) Neighborhood characteristics, and 5) Cons and Areas of improvement for PA. These themes are described below and representative quotes collectively decided upon by the researchers are found in Table 4. Parents discussed their neighborhood in regards to safety and encouraging PA: limited access to places for PA in their current neighborhood, decreased outdoor play and restrictions (increased indoor play and front porch or backyard area) as a result of neighborhood being violent or crimes occurring (i.e., rape, child abduction, fighting, and shooting). Parents also shared how CYP encourages PA for themselves and children offered ability to engage in PA.

Discussion

The purpose of this study was to examine how parental perceptions of the neighborhood, and parent's PA are related to PA of AA youth. We describe PA habits and BE of a convenience sample of AA parents/caregivers and their school-aged child. The findings from this pilot study identifies PA correlates (BE and parental role) in AA youth.

The significant positive correlation between parent's PA and children's PA in our study suggest the importance of parents in regards to PA among AA youth, which is consistent with others. Parental support was associated with AA girls' PA (Adkins et al., 2004 ;Alhassan et al., 2018) and AA youth's PA (Barr-Anderson et al., 2017). Parental support (joint parent-youth interventions) is necessary in reducing pediatric obesity in AA youth (Lofton et al., 2016).

Parents in our study reported engaging in screen time (two hours or more watching television or playing computer games) than PA related-activities for themselves and child (i.e., FEAQ-R Leisure Time Activity for parent and child), which is consistent with others. AA youth

aged 4-11 years spend over two hours of screen time when compared to Hispanic and non-Hispanic white youth (Anderson et al., 2008) whereas AA parents reported that their children spent more time playing computer/video games (Jones et al., 2017). Given the importance of engaging in regular PA and less screen time in reducing obesity in youth (Brown et al., 2015; Taylor et al., 2017) and AA adults (Shuval et al., 2013), family-based PA interventions should target sedentary behavior such as screen time use, parent's perceptions of neighborhood safety, neighborhood conditions, and accessibility to PA (Nesbit et al., 2014).

The data show a positive association between parents' perceived neighborhood characteristics (e.g., NEWS-Y) and PA (FEAQ-R). The parents/caregivers' mean scores on the NEWS-Y items (i.e., perceived neighborhood safety features such as traffic and presence of crime) had a significant effect on parent's and child's PA [FEAQ-R] in our study. The parents in this sample, majority female (93%) with full-time or part-time employment and household annual income of \$35,000 or less, reported unsafe neighborhoods. This finding is consistent with Adamus-Leach et al. (2012) where low income AA women (n=388) perceived their neighborhood as unsafe due to crime and traffic. Neighborhood safety is a barrier to engaging in PA among AA youth (Ding et al., 2011, CYP, 2016). In comparison, the association of perceived neighborhood safety and PA in our study also supports the importance of the parental role (home environment) and BE on the school-aged child's PA. In our study, findings through qualitative data collection show the role of BE (i.e., perceived environmental factors) in the PA of AA mothers (n=17) and their child, which is consistent with previous literature. Neighborhood conditions served as a barrier or facilitator to PA among AA women (Goethe & Kendall, 2016; Sebastião et al., 2014; Pham et al., 2014; Kosma & Buchman, 2017; Powell-Wiley et al., 2017) and AAs in general (Kosma & Buchman, 2017, Knapp et al., 2019, Pham et al., 2014, McDaniel

et al., 2015; Ray, 2017). There is a need to target the multiple influences on PA participation among AAs in general.

The theme, *Cons and Areas of Improvement for PA*, emerged among the 18 AA parent/child dyads in our study. Among the parent/child dyads, there was an overlap in the neighborhood characteristics that served as a barrier or facilitator to PA. Longer distances to parks or stores contributed to lack of PA participation while presence of parks within shorter distances were a facilitator to PA. Parents felt they were unsafe or needed improvement. Lack of access to PA (gyms) was identified as a barrier to PA participation in this study. Improving access to safe parks with adequate resources and gyms (i.e., facilities with PA equipment) can promote PA. Improving local parks (closer in distance) PA in AA youth may address PA barriers.

We were unsuccessful in collecting joint PA/GPS data in AA parent/child dyads. We attempted to obtain joint PA/GPS data from four parent/child dyads. Three parent/child dyads that agreed to participate were non-compliant with wearing the monitors (accelerometer and GPS device) in our study. Interestingly, the three AA mothers (female participants) reported comfortability with tracking PA/PA location and that GPS data made the study more interesting. This finding is in contrast to Zenk et al. (2012) where AAs reported lower levels of comfort with PA tracking. Offering a shorter duration time (three consecutive days) of wearing monitors coupled with access to more monitors (accelerometers and GPS devices) could have increased participation to address non-compliance and low participation rates in our study. However, the objective measurement of PA/GPS data helped uncover gaps in online survey and focus group data. Among the three parent/child dyads that wore the monitors and online survey, self-reported BE (NEWS-Y items) and GIS analysis differed. A collection of data with wide range of values in

walkability (neighborhood design features) and safety is necessary to draw conclusions about the relationship between BE and PA. In our study, parents (n=18) completed pre-feasibility of GPS questions. In determining the feasibility of PA/GPS monitoring in AA parent-child dyads, pre- and post-feasibility data collection using a larger sample of AA parents is needed.

The involvement of CYP and mixed method data collection approach guided by SEM are strengths in this study. In addition to CYP sharing study information to potential parents/caregivers, CYP provided space to conduct study procedures (i.e., information session and focus group sessions) in which community involvement in conducting future research is recommended. Moreover, community involvement may possibly Our findings provide a description of the perceived BE in AA parents (qualitative/quantitative data collection) and their child (qualitative data collection). The qualitative data enabled us to gain an understanding of the neighborhood features/characteristics associated with PA of AA parents and their school-aged child that the perceived BE (NEWS-Y) may have not have identified. SEM-guided questions were used in the focus group sessions offering insight on the multiple influences on PA in the AA school-aged child. Community involvement may possibly have the most effect on increasing PA in AA families. Overcoming neighborhood safety barriers through community programs such as CYP for low-income AA families may have a lasting impact on pediatric obesity among AAs.

Qualitative data collection did not include individual quotes for each participant (parent and child). However, selected quotes representing the major themes that emerged for each parent/child dyad are provided. As a result of non-compliance, we were unsuccessful in obtaining joint PA/GPS data among the parent/child dyads. The provision of a different incentive for participation could have yielded a greater response from participants in wearing monitors. Accessibility to additional monitors could have possibly led to the recruitment of more parents.

The small convenient sample limits generalizability while cross-sectional design limits causal inferences. Prospective studies using a different research approach are warranted to aid in the development effective PA interventions for AA youth. An experimental approach (i.e., quasi-experimental) enables examination of the effect of BE on PA (McCormack & Shiell, 2011) and confirmation of associations between BE and PA (Sallis et al., 2012). Furthermore, the multiple influences across the levels of SEM on PA can be examined using a longitudinal design to a more in-depth exploration (Barr-Anderson et al., 2017).

Conclusions

The findings support previous literature but highlights the need for continued efforts in addressing pediatric obesity in AAs. BE and parental role such as PA practices, importance of PA, and role modeling influence PA in AA youth. Community-based programs like CYP offer opportunities to engage in PA and PA adherence for AA youth. Nurses and advanced practice nurses can use findings to guide the development of community-based interventions targeting pediatric obesity in AAs. An experimental approach to establish causation between BE and PA using a larger sample is the next step towards the development of culturally-tailored PA interventions that encourage PA in AA parents/child dyads. Current health promotion efforts should entail community involvement to overcome the PA barriers as it relates to neighborhood design (i.e., walkability characteristics or places within close proximity that promote PA) in AA youth.

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Conflict of Interest

The authors declare there is no conflict of interest.

Author Contributions

KWR conceived the topic and had primary responsibility for drafting the manuscript. EM, SJH, DH, and SY critically reviewed the manuscript, and guided the organization of the content.

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Appendix

Social Ecological Model Based Study Measures

Built Environment and Physical Activity Measures	Social Ecological Model [SEM] Level of Influences	Selected Questions Used in Focus Group Sessions among Parent/Child Dyads
Focus Group Sample Questions (FGSQ)* and Family Eating and Activity Habits Questionnaire-Revised [FEAQ-R] Leisure Time Activity items	Intrapersonal (Individual)	<ul style="list-style-type: none"> • What types of activities do you do that cause you to move your body, breathe faster, and sweat? • How important is engaging in activities that cause you to breathe faster and sweat? • How often do you engage in activities that cause you to breathe faster and sweat in your neighborhood? • How much time do you watch television, videos, movies, use the computer, play video games, etc. each weekday and weekend day?
FGSQ*	Interpersonal	<ul style="list-style-type: none"> • Who do you engage in those activities with? • Are role models or someone for support important to you in participating in those activities? • How has your parent’s involvement in activities that cause you to breathe faster and sweat affect you?
FGSQ* and Neighborhood Environment Walkability Scale-Youth [NEWS-Y] items	Community Level	<ul style="list-style-type: none"> • How would you describe the neighborhood in terms of promoting physical activity e.g., activities involving body movement that cause one to breathe faster and sweat for children and adults? • How does your neighborhood encourage you to engage in activities that cause you to breathe faster and sweat? • How does your neighborhood prevent you from engaging in activities that cause you to breathe faster and sweat?

Note. *Adapted from Literature (King et al., 2002; Sallis et al., 2012; Wright et al., 2010).

Table 1

Characteristics of Parent/Caregivers and School-Aged Child

Characteristic	N	%
Parent/Caregivers' Gender		
Male	2	7
Female	26	93
Age		
22 to 29	6	21
30 to 39	10	36
40 to 49	7	25
50 to 64	5	18
Marital Status		
Single (never-married)	23	82
Separated	1	4
Married, or in a domestic partnership	2	7
Divorced	1	4
Prefer Not to Answer	1	4
Single (never-married)	23	82
Separated	1	4
Employment status		
Student	1	4
Unemployed and currently looking for work	7	25
Self-employed	1	4
Employed part time (up to 39 hours per week)	9	32
Employed full time (40 or more hours per week)	10	36
Highest level of Education		
Less than high school diploma	4	14
High school degree or equivalent (e.g. GED)	11	39
Some college, no degree	7	25
Associate degree (e.g. AA, AS)	4	14

Bachelor's degree (e.g. BA, BS)	2	7
Household Income		
Less than \$20000	20	71
\$20000 to \$34999	7	25
\$35000 to \$45000	1	4
Child's Gender		
Male	10	56
Female	8	44
Age		
6 to 7	4	22
8 to 10	10	56
11 to 12	4	22

Note. *Due to rounding, percentages may total more than 100.

Table 2

Descriptive Statistics of Study Measures (N=28)

FEAQ-R				
Items	Parents/Caregivers Self-Report	Mean	Standard Deviation	Interquartile Range
Hours per day on average spent watching television or playing computer games?	Parent	2.9	2.5	1,2.5
	Child	2.4	1.4	2.5,2.5
Hours per week spent riding bicycles?	Parent	1	1.6	0,1
	Child	1.7	1.3	1,2
Hours per week spent taking a walk?	Parent	2.4	1.2	1.5,4
	Child	2.5	1.2	2,4
Hours per week spent on dancing?	Parent	1.6	1.6	0,3
	Child	1.9	1.4	1,3
Hours per week spent on swimming?	Parent	0.5	1.4	0,0
	Child	1.4	1.5	0.5,1.5
Hours per week spent doing gymnastics?	Parent	0.7	1.4	0,1
	Child	1.5	1.5	0.5, 2
	Parent	0.6	1.4	0, 0.3

Hours per week spent playing tennis?	Child	0.9	1.6	0,1
Hours per week spent doing other activities?	Parent	4.9	7.99	0, 6.9
	Child	7.5	6.99	3, 10.9
Number of hours per week attending classes performing physical activities (or 60 minutes or more of continuous movement)?	Parent	1.8	1.0	1,2
	Child	3.1	1.6	2, 3.5
When alone and not busy, do you get bored?***	Parent	1.6	0.9	2,2
	Child	1.9	1.3	2,2
NEWS-Y*				
Types of homes in your neighborhood***	Parent	2.43	1.0	2,3
Access to services****	Parent	2.85	1.4	1,4
Streets in my neighborhood, Places for walking, Neighborhood surroundings****	Parent	2.96	1.1	2,4
Neighborhood safety, Crime safety****	Parent	2.81	1.1	2,4

Note. *Descriptive statistics for selected items; ** Scale range 0(Never) to 4(Always); *** Scale range 1(A few) to 5(All the residences are apartment or condo buildings); ****Scale range 1(Strongly disagree) to 4(Strongly agree).

Table 3

Features of the Built Environment Near Frequented Places Measured by GPS and GIS (n=3 parents)

Participant ID	Built Environment					
	emphs_lumix*	emp8_lumix*	int_dens*	dist_transit*	Walkindex*	Crimedens*
Parent 1	0.28	0.24	120.04	192.04	13.87	17.76069
Parent 2	0.22	0.20	48.99	231.01	11.15	66.79565
Parent 3	0.37	0.35	75.96	192.60	12.64	49.42106
Chicago Mean	0.38	0.36	93.9	241.10	13.53	21.70

Note. GPS= Global Positioning System, GIS= Geographic Information Systems

*emphs_lumix= Land use mix between employment and household (the higher, the more diverse land use); emp8_lumix=Land use mix among eight different types of employment (the higher, the more diverse); int_dens=Density of pedestrian oriented street intersection (number of intersections per square mile); dist_transit=Distance to the nearest transit with fixed guideway (in meters); walkindex=calculated as the weighted sum of ranked score of four variables above, range from 1 to 20; the higher the more walkable; crimeden=Density of violent crimes (calculated as kernel density in # incidents per square mile).

Table 4

Themes, Findings, and Selected Quotes of Focus Group Sessions (n=18 parent/child dyads)

Major Themes	Findings	Sample Quotes from Parent/Child Dyads
PA Practices: Types of PA and PA Engagement, Amount of PA, and Sedentary Activities	Participants (parent/child dyads) as household tasks, dancing, jumping rope, playing basketball, walking around in a store, riding a bike, physical education class in school, going to the gym, running around, swimming, and school activities (i.e., gym and recess).	<p><i>“work encourages one to move” or “I work and there’s not enough time to exercise” or “no time, I work a lot”. (P)</i></p> <p><i>“walk to perform daily activities”, “walk for transportation: to gas station, grocery store, library, and church”; “walk up and down stairs”; or “Going up and down stairs in home after grocery shopping and doing laundry”. (P)</i></p> <p><i>“have to walk fast, pace walking for safety”. (P)</i></p> <p><i>“important to run for safety”. (parent/child dyads)</i></p> <p><i>“TV watching, listening to music, social media use, or talking on the phone”. (parent/child dyads)</i></p>
PA Importance	Participants (parent/child dyads) were asked about the importance of PA. Some participants (children) discussed that they preferred engaging in PA outdoors instead of engaging in PA indoors because it is boring.	<p><i>“overweight part kicks in and problems with health without PA and Stay healthy”. (P)</i></p> <p><i>“eliminate health problems” and “Lose weight”, or “Lose weight “, or “Major key to life”. (P)</i></p> <p><i>“The president was talking yesterday in a favorable manner</i></p>

		<p><i>for being active, it is important to be healthy and strong and participate in meditation”. (P)</i></p> <p><i>“It is important to have someone to do activities with”. (parent/child dyads)</i></p>
<p>Role Models for PA</p>	<p>Among participants (parents), role models were self, family (e.g., children, siblings, and cousins), and friends. Many participants (children) identified mother or grandmother as a role model to engage in PA. Parent/child dyads expressed the importance of someone such as a siblings, father, or family in general and friends to engage in PA.</p>	<p><i>“Kids help with parent being active”. (P)</i></p> <p><i>“Kids want to get out the house”. (P)</i></p> <p><i>“if daughter doesn’t encourage then would stay on couch”. (P)</i></p> <p><i>“my daughter pushes me to do PA”. (P)</i></p> <p><i>“Chicago Youth Programs is a motivator to be active”. (P)</i></p>
<p>Neighborhood Characteristics</p>	<p>Parents discussed the following:</p> <ul style="list-style-type: none"> • Physical features: Limited access to places for PA in their current neighborhood • Safety: Limited outdoor play and restricted to front porch area or backyard as a result of neighborhood being violent or crimes occurring (i.e., rape, child abduction, fighting, and shooting). • Strengths: CYP encourages PA for children and membership through 	<p><i>“neighborhood has changed and is less predictable”. (P)</i></p> <p><i>“raggedy and not up to par” , “things are too far of a walk to get to”, “not enough lighting”, “nothing to do” (parent/child dyads)</i></p> <p><i>“more lighting, less noise (i.e., loud music, sirens, and heavy traffic), and less littering within their neighborhoods.” (parent/child dyads)</i></p> <p><i>“Certain blocks are safer“. (P)</i></p> <p><i>“Eliminate violence like child abduction, have to take taxi to get things or a safer place” (P)</i></p>

	<p>CYP offered ability to engage in PA.</p>	<p><i>People have to take their kids to the suburbs for a safe environment”(P)</i></p> <p><i>“police are circling around every night” (P)</i></p> <p><i>“violence happens, life goes on” (P)</i></p> <p><i>“need to stay in house” (P)</i></p> <p><i>“Can’t go too much anywhere because of violence” “What else can mothers do for activity?”.(P)</i></p> <p><i>“I try to want in the areas that are not dark; You have to make a detour or take different blocks based on some areas being more dangerous than others” (P)</i></p> <p><i>“Always been the same. Daughter has been in Chicago Youth Programs all of her life”. (P)</i></p> <p><i>“A park is available and need to get up to use it”. (P)</i></p> <p><i>“Need to be alert to what’s going in news and newspaper” (P)</i></p>
<p>Cons and Areas of Improvement for PA</p>	<p>Participants (parent/child dyads) expressed how engaging in PA for health is needed within their neighborhood through access to better parks. Many participants (parents) discussed the need for free programs or</p>	<p><i>“Safety, make police come faster” (P)</i></p> <p><i>“Have to go to another park outside neighborhood because they have more stuff do”.(P)</i></p> <p><i>“Parks need bigger playground and basketball court; things for</i></p>

	<p>activities that encourage PA in their neighborhood with several verbalizing the need for the same PA resources found in higher income or affluent neighborhoods in low-income neighborhoods.</p>	<p><i>adults to participate in with kids</i>".(P)</p> <p><i>"less loitering in parks"</i>. (P)</p> <p><i>"There are people drinking and standing around"</i>.(P)</p> <p><i>" We need places to swim and run "</i>.(P)</p> <p><i>"Church can serve as an opportunity to add things to the neighborhood for kids to be active"</i>(P)</p> <p><i>Spread the word about accessing the programs in the neighborhood (e.g., dancing, karate, etc.) and information on how to access them"</i>. (P)</p> <p><i>"Eliminate Liquor Stores/ Gas stations"</i>.(P)</p> <p><i>"Need more things to do, to move away from smartphones"</i>. (P)</p> <p><i>"More things and options (e.g., not a lot of variety as the suburbs; YMCA; activities with youth involvement"</i>. (P)</p> <p><i>" Same activities in upper class neighborhoods, options that are affordable that encourage being active"</i>(P)</p> <p><i>"places for the whole family to do activities are needed"</i>. (P)</p> <p><i>"Why aren't there a lot of activities available to eliminate being overweight and promote health through PA?"</i> (P)</p>
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Note. PA=Physical Activity, P=Parents; TV=television