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# Barriers and motivators to reducing secondhand smoke exposure in African American families of head start children: a qualitative study

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## Abstract

**Objective:** To identify barriers and motivators for reducing secondhand smoke exposure (SHSe) for families of African-American, low-income, urban children. **Method:** Audiotaped intervention sessions of 52 African-American caregivers of Head Start children who reported being a smoker and/or had at least one smoker in the home were randomly sampled from a larger trial examining the effectiveness of a motivational-interviewing intervention in reducing child's SHSe. Counseling sessions were qualitatively coded to identify barriers and motivators to implementing a home smoking ban or quitting smoking.

**Results:** African-American families identified several themes that were either or both barriers and motivators for SHSe reduction, including: asking others not to smoke, other family living in the home, neighborhood safety, absence of childcare, cost/availability of cessation tools, physician support and prevention of health problems. **Discussion:** Urban, low-income African-American families face numerous barriers to reducing SHSe. Families were able to identify many motivators for reducing SHSe, suggesting an awareness of the importance for SHSe reduction but uncertainty in their confidence to change behaviors. Counseling should include tailoring to be most effective in supporting health behavior

change. Greater emphasis on motivators is needed, such as low-cost/free cessation tools, engagement from physicians and greater involvement of extended family members.

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## Introduction

Secondhand smoke exposure (SHSe) poses a significant health risk for children in the United States. Pediatric SHSe has been shown to exacerbate asthma symptoms [1, 2], and is associated with increased risk of bronchitis, pneumonia and other respiratory infections [3], sudden infant death syndrome [4, 5], middle ear disease [6], atopic dermatitis [7], attention deficit hyperactivity disorder [8], externalizing behavior problems [9] and cognitive development delays [10, 11]. Despite declines in US smoking prevalence, ~50% of US children are routinely exposed to secondhand smoke [12], and over 30% of US children live in homes where a resident or visitor smokes [13]. African-American children living in urban, low-income areas are at particular risk of SHSe [14]. Estimates have shown that over 50% of inner-city, predominantly African-American children live with at least one smoker [15]. Recent data from the National Health and Nutrition Examination Survey reveal that, during 2011–12, among children aged 3–11 years, 67.9% of non-Hispanic African Americans were exposed to SHS compared with 37.2% of non-Hispanic

whites and 29.9% of Mexican Americans [16]. Young children are especially vulnerable to the impact of in-home SHSe, due to their inability to control their exposure levels and their percentage of time spent inside the home [17].

Given the increased health risks, interventions to reduce young children's SHSe are vitally important. According to Rosen *et al.*'s [18] recent review, interventions to promote smoking cessation for parents of young children are efficacious at encouraging some parents to quit; however, more than 50% of parents do not quit smoking even after intervention. Interventions to reduce SHSe via complete home smoking bans (HSBs) (i.e. where no smoking is allowed inside the home or vehicle at any time) have been found to be an effective alternative to cessation in reducing SHSe for some families [19–22], including among African Americans [23]. However, there are still many families who do not implement HSBs. In order to enhance the efficacy of SHSe reduction interventions, it is important to understand why some families are less likely to have a HSB.

In general, African-American smoking families are much less likely to implement HSBs. In 2007, only 32.8% of African-American smoking households reported having HSBs, as compared with 65% of Hispanic and Asian/Pacific Islander smoking families, and 48.0% of non-Hispanic white families [24]. Caregivers of low-income and minority children may experience a unique set of barriers to reducing smoking due to living in urban areas [25]. Some previous researchers have quantitatively explored factors relating to HSB implementation among African Americans; for example, Warren and colleagues found African-American light smokers were more likely to place home smoking restrictions if they were young, female, reported high confidence to quit smoking, and lived with a non-smoker [26]. In another quantitative study, African-American parents were found to be less likely to implement home smoking restrictions if they were living below the poverty line, but more likely to implement HSBs if they received recommendations from their child's healthcare providers [27]. However, it is unknown if there were other barriers or motivators for implementing HSBs that were not

measured among low-income African-American families of preschool children.

Some studies have qualitatively explored barriers and motivators to HSBs among various populations, including disadvantaged caregivers in the United Kingdom [28], and rural African-Americans and White Americans [29]. They have found common themes regarding protecting children's health, physician recommendations to protect children, family disagreements regarding HSBs, social network/relationships, and physical appearance of homes. However, this work has not focused specifically on urban African-Americans. It is important to identify barriers and motivators to implementing HSBs among urban African-American families in order to tailor interventions to address this unique population. This study specifically utilizes qualitative methods to identify of barriers and motivators to reducing SHSe among urban, low-income African-American families.

The purpose of this qualitative study was to identify barriers and motivators to implementing a complete HSB reported by urban, low-income African-American families during counseling sessions for SHSe. The sessions were conducted as part of a randomized-controlled trial [30] that utilized Motivational Interviewing (MI) to promote secondhand smoke reduction. The results of the overall study demonstrated that MI combined with an education program was effective in reducing objectively measured household air nicotine levels, increasing the proportion of families with complete HSBs, and helping caregivers quit smoking compared with an education program alone. However, complete HSBs were adopted in only 39% of families who participated in the intervention. Therefore, a better understanding of the unique challenges of low-income urban families is necessary in order to improve the effectiveness of interventions to reduce SHSe.

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## Method

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### Participants

Participants were caregivers of young children (age 6 months to 6 years) enrolled in Head Start programs

who reported that there was a smoker living in the home and/or who smoked in Baltimore MD. The larger clinical trial enrolled 350 out of 676 eligible families. One hundred and sixty families were randomized to the MI condition and were offered 5 sessions of MI combined with a Head-Start based educational awareness program to reduce children's SHSe [30]. Exclusion criteria included inability to fluently read/speak English and current participation in another respiratory disease study. A subset of 60 participants (38%) were selected using a random number generator to be included in this qualitative analysis; 8 non-African-American participants were excluded to ensure a homogenous sample, resulting in a final subsample of 52 participants from the total sample of  $n = 160$  (33%).

### **Procedures**

All study activities were conducted in compliance with the rules and regulations set forth by the Johns Hopkins University Institutional Review Board, and all participants provided informed consent. MI intervention sessions were conducted by phone or in the home with participants who were randomized to receive the counseling intervention. Data were collected between 2009 and 2013. The counseling sessions were held within the first 3 months after initial recruitment.

### *Intervention description*

The focus of the sessions was to help caregivers reduce child SHSe through the implementation of a HSB; however, many caregivers wanted to discuss smoking cessation as well. MI intervention sessions 1 and 2 were each 20–30 min and MI sessions 3–5 were each 10 min in duration. Structured MI activities were conducted including: feedback on child SHSe using cotinine data, pros and cons regarding implementation of HSB, motivation and confidence to implement HSB, and problem solving regarding barriers to reducing SHSe. The sessions concluded with goal setting to reduce SHSe or quit smoking (if participants were ready) and discussions regarding what would help them achieve their goals or barriers to goal achievement. All of

the counseling was done with a structured treatment manual which served as the interview guide for these analyses.

### *Questions regarding barriers and facilitators*

Specific questions were asked regarding participants' perceived barriers and facilitators to implementing a HSB and reducing their child's SHSe. These questions included: 'What are the good things about setting up a home or car smoking ban? Or quitting smoking?' 'What are the not so good things about setting up a HSB? Or quitting smoking?' 'What would help you in setting up a HSB? Or quitting smoking?' 'What would get in the way of you setting up a HSB? Or quitting smoking?' 'What benefits would you see for yourself or your child if you set up a HSB? Or quitting smoking?'

Each intervention session was audio-taped and then randomly selected participant sessions were transcribed verbatim. A total of 52 participant transcripts were transcribed. Thirteen participants were each selected from sessions 1 and 2 since they were longer and contained a greater number of intervention components, and 8–9 participants were selected from sessions 3–5. The coding of 52 tapes demonstrated saturation of themes; thus, no other transcripts were coded.

### **Analyses**

Transcripts were independently reviewed by the investigators for common barriers to reducing SHSe, motivators to implement a HSB (or maintenance of HSBs if already implemented), and barriers and facilitators of smoking cessation. Codes were determined using an inductive constant comparative approach, with group consensus determining the final code book. Using the established code book, each transcript was coded using nVIVO version 10 software. To determine coding reliability, the double coded transcripts were compared using percent agreement and kappa coefficient. Since a comparison of the double coding by two independent reviewers showed a mean percent agreement of 99.4% and a kappa of  $0.83 \pm 0.37$ , demonstrating

**Table I.** Demographic and Baseline SHSe variables ( $n=52$ )

Characteristics	Overall	
	<i>n</i>	(%)
Child characteristics		
Age, mean (SD)	4.3	(0.7)
African-American	52	(100.0)
Female	20	(38.5)
Diagnosis of asthma	19	(36.5)
Caregiver characteristics		
Age, mean (SD)	35.4	(9.4)
African-American	52	(100.0)
Relationship to child		
Mother	35	(67.3)
Father	7	(13.5)
Grandmother	7	(13.5)
Other	3	(5.8)
Caregiver Education		
Did not complete high school	14	(26.9)
High school	20	(38.5)
Some college or trade school	16	(30.8)
Missing	2	(3.8)
Household income		
<\$10 000/y	14	(26.9)
10–20 k	18	(34.6)
20–30 k	6	(11.5)
>30 k	14	(26.9)
Smoking characteristics		
More than 1 smoker in the home	28	(53.8)
Caregiver is a smoker	37	(71.2)
Household smoking ban at baseline	9	(17.6)

strong inter-rater reliability, only a subset of transcripts (38%,  $n=20$ ) were double coded.

## Results

Participant demographic characteristics are presented in Table I. Similar to the full sample of the randomized controlled trial [30], intervention sessions were most often conducted with the mother ( $n=35$ ; 67%). The median interview length was 15.53 min ( $M=20.34$ ,  $SD=15.11$ , range 2.98–74.50). Approximately 71% of caregivers were smokers themselves and 54% had more than one smoker living in the home. Given that families were identified from Head Start programs, the majority of families were low-income and living in Baltimore

City, MD. Baltimore frequently leads the nation in homicide and violent crime rates compared with other urban areas [31, 32].

## Qualitative themes

Analyses identified several themes from participants' stated barriers and motivators to reducing their child's SHSe. Some themes were identified as helpful for some participants and hindering for others, i.e. they were identified as both motivators and barriers depending on the individual participant. Coders divided themes into two activities related to SHSe reduction: HSBs and smoking cessation. Table II displays themes that were described as barriers for HSB implementation, while Table III displays themes that were described as barriers for cessation. Table IV displays themes that were seen as motivators for implementation of HSB, and Table V displays motivators for smoking cessation.

## Themes reported as barriers to HSB implementation

### *Asking others not to smoke in the home*

Participants were mixed about their ability to ask other people to not smoke in their home; some participants did not feel confident in their abilities to ask others not to smoke and perceived asking others to not smoke as a barrier to implementing HSBs. Many cited concerns over disregarding others' personal agency. Participants believed they could not tell others what to do, or that it would be discourteous to tell a guest to smoke outside.

### *Extended family living in the home*

Many participants indicated that family members who smoked were barriers to implementing HSBs. Participants expressed concerns about asking extended family members to not smoke indoors, particularly individuals from older generations, such as parents or aunts/uncles. Participants felt they had less power to convince older generations to change, especially if these family members owned the home.

**Table II.** *Barriers for implementing a HSB*

Theme	Exemplar quotations	Age and relation to child	Frequency <sup>a</sup>
<b>Asking others not to smoke in the home</b>	How do you bring company to your house and then tell them that they can't smoke in the house?	26; Birth mother	20
	I really don't have no powers, She's my mother, and can't tell her nothing, so let her do what she wants.	33; Birth mother A	
	My mother smokes in her room, and this is her house. I ain't gonna throw my mother out.	33; Birth mother B	
<b>Extended family living in home</b>	It's three smokers [in the house]: my brother, my boyfriend, my father and me.	41; Birth mother	19
	My dad is a smoker. It's pissing me off because I don't smoke, but yet I'm not home and he's [the child] still being exposed to it.	24; Birth mother	
	I wished my uncle would [stop] but I know that's not the case. I still smell smoke coming out of his room.	41; Birth father	
<b>Social network</b>	When I have company over, there is probably going to be smoker because I have quite a few people that I know that smoke.	30; Birth mother	15
	I'm trying to do so much now. I don't have family members around [to help].	39; Birth mother	
<b>Weather</b>	I'm talking snow all over the place where they can't go outside and really smoke.	39; Birth mother	13
	It's getting colder so we do more smoking in the house just because of the weather.	29; Birth mother	
<b>Childcare</b>	I'm still smoking in the house...I don't have anybody to watch her so I can go outside.	39; Birth mother	8
	When I'm standing outside [to smoke] she'll come out there at the door.	43; Birth mother	
	If my dad goes out to smoke then (the child) is right there next to him and he's probably inhaling all of that.	24; Birth mother	
<b>Neighbor-hood safety</b>	I prefer not to be outside. Whatever they doing I just don't want to be a part of it. I just don't like to see all what's going on out there.	41; Birth mother	4
	I'm trying to find a job, so I can move, so I can have a safe home for her.	43; Birth mother	
	The people next door sit out there and roll joints and smoke [marijuana] all day. When I have company, you can't sit out front because they're smoking at the next stoop.	49; Grandmother	
<b>Police Involvement</b>	I see the police riding, they'll come walk their beat, ask questions, I don't want to get involved so I just basically stay in the house.	41; Birth mother	2
	When I bring my company here we stay inside because where I live, if the police see a lot of people in the front, then they bother us, so I'd rather keep my company inside where they won't have to be harassed.	26; Birth mother	

<sup>a</sup>Indicates number of participants who endorsed this theme ( $n = 52$ ).

**Table III.** *Barriers for smoking cessation*

Theme	Exemplar quotations	Age and relation to child	Frequency <sup>a</sup>
<b>Social network</b>	If a person smokes they get a lot of attention and love. And if a person don't smoke it be like this person don't like to have fun.	26; Step-father	11
	I want to quit, [but] it's just so hard to sit down with my uncle and family and say, 'I need your support'.	25; Birth mother A	
	The majority of my workers smoke...out of 11 of us, it's only about 3 that don't.	41 Birth mother	
<b>Cessation treatment options</b>	I didn't like the way the pills made me feel...the pills made me jittery.	41; Birth mother	11
	If I had the money I would try to see if I could get that patch.	25; Step-father	
	I wonder what the side effects of this stuff. I wonder does it really work.	19; Birth mother	
	My mom tried a gum before when she was trying to stop. She said that it was nasty.	34; Step-mother	
<b>Money</b>	I've been under a lot of stress trying to keep up with my bills...it's been very stressful.	49; Grand-mother	7
	Medical assistance don't cover [cessation tools]?	25; Birth mother	
	The patches are high...with cigarettes, you don't pay for them all at one time.	41; Birth mother A	

<sup>a</sup>Indicates number of participants who endorsed this theme ( $n = 52$ ).

### *Social network*

Another common theme was the participant's social network; several identified a lack of social support from their network as a barrier to implementing smoking changes at home. Some participants felt too stressed by their lack of support to make changes. Some also believed that friends and coworkers who smoked would expect to smoke when visiting the home.

### *Weather*

Cold weather was frequently cited as a barrier to smoking outside, since participants were reluctant to go outside in the cold. They also voiced concerns about asking others to smoke outside in cold weather.

### *Childcare*

Concerns regarding childcare were a particular barrier for participants who tried to implement a HSB. Participants who smoked described feeling like they were unable to leave their young child in the home alone to smoke outside, because they did not want to leave their child unattended. For participants who did go outside to smoke, the child would sometimes follow them, thus negating the intent of the HSB to limit child SHSe. Even participants who did not smoke expressed concerns about other caretakers who smoked in the presence of the child. They described feeling limited about affordable options for childcare; they felt leaving their child with a caretaker who smoked was the only feasible option.

**Table IV.** *Motivators for implementing a HSB*

Theme	Exemplar quotations	Age and relation to child	Frequency <sup>a</sup>
<b>Health</b>	I didn't know that the cigarettes really made [the kids] sick. That's my motivation.	31; Birth mother	42
	Better health for my son is most definitely worth it.	28; Birth mother	
<b>Social Network</b>	Hopefully if people don't see me smoking in the house, they wouldn't come over and smoke in the house.	19; Birth mother	22
	We'e smoking outside. I got everybody used to the idea and everybody knows they smoke outside now.	49; Grand-mother	
<b>Asking others not to smoke in the home</b>	I think that's just a common courtesy thing for anyone's home. . . gotta respect their space.	39; Birth mother	19
	It's just a habit now; everybody comes in, [and if] they smoke they have to go out.	60; Great grand-mother	
<b>Cleanliness of home or car</b>	[After HSB] The walls are not yellowish looking. When I wipe the mirrors, they're not getting that yellow or brown looking soot off of it	49; Grandmother	13
	You don't have to worry about washing down walls, because I can tell a difference. Even her toys [before the HSB] would be full of smoke.	41; Birth mother	
<b>Extended Family living in home</b>	Me and my uncle and my grandfather come together and make an agreement to not to smoke in the house.	25; Birth mother	11
	Everybody in the house smokes outside most days. We made an agreement because [the child] wound up going to the hospital.	34; Step-mother	
<b>Weather</b>	I go outside more and smoke because the weather is warm.	36; Birth mother	5
	It's starting to get warm so people don't want to be in the house anyway	36; Birth mother B	

<sup>a</sup>Indicates number of participants who endorsed this theme ( $n = 52$ ).

### *Neighborhood safety and police involvement/harassment*

A few participants did not feel comfortable smoking outside due to concerns about safety in their neighborhood. Participants stated they 'didn't want to be a part of' whatever was happening outside their home. Some indicated concerns for themselves—i.e. they did not want to be perceived as being a part of illegal/suspicious activities. Others did not want to expose their guests to unsafe neighborhood activities by asking them to smoke outside.

Two participants described fears about potential negative interactions with police as a barrier to spending time outdoors. One indicated that she noticed

police consistently walking or driving through her neighborhood and asking questions; 'I don't want to get involved so I basically just stay in the house'. Another indicated that, in her neighborhood, police unnecessarily 'bother' large groups of people standing outside their homes, so she would avoid going outside to smoke for fear of police harassment.

### **Themes reported as barriers to smoking cessation**

#### *Social network*

Like HSBs, social network was frequently cited as either a motivator or barrier to smoking cessation. Participants who perceived their social network as a

**Table V.** *Motivators for smoking cessation*

Theme	Exemplar quotations	Age and relation to child	Frequency <sup>a</sup>
<b>Cessation treatment options</b>	If I talked to a counselor, it [would] make me feel good talking to somebody to see where I go here from here.	25; Birth mother	16
	It feels good because you got a lot of product out here that can help you stop smoking.	26; Birth mother	
	I would definitely need some sort of aid to help me along.	39; Birth father	
<b>Social network</b>	It will be better off if you stop because a lot of people say it's good if a person don't smoke. People say you can be happy without smoking	25; Birth mother	13
	I have a sponsor and I have to go to NA and, I have my church. I don't have to go through what I go through alone.	48; Birth father	
	My aunt said she wants to stop smoking too, so I said maybe we can do it together.	41; Birth mother	
<b>Money</b>	I save more money and that money can go to other things than what I spent on cigarettes.	41; Birth mother B	12
	I've been spending money on the kids more, so I haven't had money to buy cigarettes.	26; Birth mother	
<b>Physician support</b>	I'm talking to my doctor now, we in the process [of getting] my weight and health to a point where I can start the weaning [off cigarettes]	41; Birth mother	7
	My doctor put me on the patch [...] I couldn't do this without the patch and I was a nonsmoker for 3 years.	41; Grandmother	
<b>Do not want my child to smoke</b>	He's better off for me to try to stop [smoking] right now so he don't see Daddy give 'the okay', like [smoking] is cool.	26; Stepfather	7
	I don't want my kids to grow up to smoke because I know it's not good...I feel like whatever they see me do, they gonna do.	26; Birth mother	

<sup>a</sup>Indicates number of participants who endorsed this theme ( $n = 52$ ).

barrier described having multiple people in their social circles who smoke, and reported that smoking imparts an elevated social status. They described others' attitudes regarding smoking as fatalistic ('most people said you going to die when you're supposed to die so it don't matter'). Some also felt uncomfortable asking others to provide support for cessation.

#### *Cessation treatment options*

Participants were also mixed in their perception of smoking cessation treatment options (e.g. nicotine replacement therapy, medications, counseling).

Some cessation aids were cited as barriers because some participants had unsuccessfully tried them in the past or heard from friends or family about unsuccessful quit attempts using aids. Others expressed concerns about cost of cessation treatment options. Some participants were not aware of available low-cost aids (free patches, counseling sessions etc.), and others did not know how to access cessation aids.

#### *Money*

Some participants cited monetary concerns as a barrier to cessation. Some indicated that financial



stressors (such as bills) made it difficult for participants to focus on smoking cessation. Others cited concerns regarding the cost of cessation aids. Some participants perceived aids to be more expensive than cigarettes because cessation tools need to be purchased all at once; these participants engaged in 'loosie' purchase behavior (i.e. buying only a few cigarettes per day from another individual or neighborhood store). Thus they perceived their smoking habit to be less expensive than purchasing cessation aids.

### **Themes reported as motivators to HSB implementation**

#### *Health*

When asked why participants were motivated to reduce their child's SHSe, their most common motivator was the health of their child and other family members. Participants who implemented HSBs often cited their child's health as their main reason; 'that's the motivation right there', one parent stated, 'any parent wants their child to be healthy'. They also identified their own health (either specific or general health concerns) as a unique motivator. They frequently mentioned how reducing SHSe would improve not only their child's and their own health, but also the health of other family members.

#### *Social network*

The next most commonly cited motivator for HSBs was the participant's social network, with many participants indicating that their social network provided support for the HSB. These participants often described other environments (church, work) or homes that were smoke-free, which increased caregiver confidence to implement a HSB.

#### *Asking others not to smoke in the home*

Although some participants perceived asking others to smoke outside as a barrier, other participants expressed confidence in their abilities to ask others to not smoke in the home. Some stated that it was their right as the homeowner to dictate rules, and

indicated visitors would become accustomed to these rules.

#### *Cleanliness of home/car*

Participants also cited appearance of homes and cars as common motivators to implementing HSBs. Some participants noticed their homes were cleaner and smelled better once they implemented HSBs. These participants talked about the newfound cleanliness of their homes and car, stating that they no longer had to clean as much or their curtains did not smell.

#### *Extended family living in the home*

Extended family members who smoked were sometimes cited as facilitators to implementing HSBs. These participants described how relatives who smoked outside encouraged the participant to also smoke outside. Some participants indicated that they were able to make an agreement with other resident smokers to always smoke outside.

#### *Weather*

Warm weather was cited as a facilitator to HSBs, since participants and their friends/family were already more likely to be outside. One participant noted that cold weather facilitated decreased smoking, because she did not want to go outside.

### **Themes reported as motivators to smoking cessation**

#### *Cessation treatment options*

Although some participants viewed aids as unhelpful in cessation attempts, others viewed aids more positively. Participants described feelings of encouragement and optimism due to the availability of multiple cessation aids. Others expressed beliefs they could not quit without the help of aids.

#### *Social network*

Like HSBs, some participants indicated that their social network was a source of support for cessation. They described family members or friends who were also trying to quit and how individuals or

community groups could provide support for cessation.

### *Money*

Several participants mentioned the monetary benefits of cessation as a motivator. Some participants looked forward to spending the money saved from not smoking on other priorities, and others indicated that they had reduced smoking due to lack of funds.

### *Physician support*

Another motivator for smoking cessation was physician support. Some stated they could not quit cigarettes on their own, and felt it was necessary to seek their doctor's opinion before initiating cessation. Others indicated that they felt motivated to stop smoking because their doctors had already spoken to them or other family members who smoked ('And then my doctor's on my back'; 'Her doctor told her she has to stop [smoking]'). Some cited supportive physicians as a primary reason for feeling ready to quit.

### *Do not want my child to smoke*

Another motivator was the potential influence of their smoking behaviors on their children, explicitly stating that they did not want their children to smoke. Some emphasized their child's lack of agency, and some voiced fears that they were modeling smoking behaviors as acceptable for their children.

tools, and money. Additional barriers included neighborhood safety and childcare restrictions; additional motivators included prevention of health problems, physician support, cleanliness, and prevention of child smoking.

Some of the above barriers and motivators named are often identified in other populations, and some seem more unique to an urban, low-income population. For example, a study of barriers to HSBs for rural White and African-American adults found similar emphasis on social network and other smokers inside the home [29]. Social network and finances have also been previously cited as both barriers and motivators for cessation among urban smokers in New Haven, Connecticut [33], and concerns regarding the physical appearance of homes have been cited as a potential motivator for HSBs in disadvantaged caregivers in the United Kingdom [28]. Health has also been highlighted; in a study of barriers to cessation in mostly White adult smokers in Tennessee, the most commonly identified motivator of cessation was the improvement of the smoker's general health [34]. However, some of the identified barriers and motivators seem to be more common to an urban population of African-American caregivers of young children (though this conclusion must be tempered because we did not conduct a qualitative analysis of non-urban smokers as a comparison). Caregivers in the current study described childcare concerns as a common barrier, particularly for HSB implementation; caregivers did not feel safe leaving young children alone in the home while they smoked outside, and many did not have the resources to find nonsmoking babysitters. Obtaining affordable, smoke-free childcare was particularly challenging for low-income caregivers whose social network was mostly made up of individuals who also smoked. Caregivers also reported concerns about neighborhood safety, making it more difficult for these caregivers to ask visitors to smoke outside. This lack of resources for childcare aligns with previous findings that African-Americans are less likely to implement a HSB if they are living below the poverty line [29]. These families may not perceive themselves to have

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## **Discussion**

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The purpose of this qualitative study was to identify barriers and motivators to implementing a HSB and reducing SHSe in urban, low-income African-American families of Head Start children. Despite the increased risk of SHSe, African-American families are less likely to adopt HSBs [24]. Many themes were identified as both barriers and motivators, including asking others not to smoke in the home, extended family members living in the home, the caregiver's social network, weather, cessation

adequate financial resources to support a HSB while maintaining childcare and other needs.

The smoker's social network has been cited as an important barrier/motivator in other studies [26, 29, 33], and several caregivers in this study also cited their social network as a barrier. Some caregivers indicated that smoking was common in their social circle, which made it challenging to reduce SHSe; this aligns with previous research that African-American smokers perceive smoking as normative among other African-Americans [35]. Caregivers struggled with asking other people not to smoke in their home, particularly older family members living in the home. There was a high frequency of cohabitation with adult family members. This presented some unique barriers for participants living with members of older generations who smoked in the home; many participants were unwilling or unable to ask older family members to change their smoking behaviors. This finding also aligns with previous research regarding the importance of extended kin relationships in African-American families; African-American families frequently include a single parent and at least one non-marital 'coparent' who is the child's grandmother or another extended family member [36–40]. These families often emphasize shared childrearing responsibility and intergenerational support, which may impact parents' ability to ask for change in their coparents' smoking behavior [36, 38, 40, 41]. Given previous findings that African-American caregivers are less likely to have adopted HSBs if they are older [26], these older generations may be an especial target for interventions. Future interventions could be targeted to be more family-based and inclusive of caregivers' larger social circle. In addition, social network interventions have been effective in substance use [42], HIV prevention [43] and other health interventions [44] and may also be appropriate for tobacco cessation for this population.

The cost of cessation is also a particularly important consideration. Many of the families reported positive outcome expectancies for cessation treatment options, but did not have direct experience with them. This could lead to increased barriers if they have difficulty accessing aids or are not

successful with them when they do try them. Many participants also believed that the price of aids would be higher than maintaining their smoking habit. Though this barrier has been found in other populations [34], it is particularly salient for urban, low-income populations. Buying 'loosies' (i.e. single cigarettes) is common among low-income urban populations [45–49] even though it is illegal. Many individuals believe they are able to spend significantly less money per day maintaining their habit when compared with the cost of purchasing cessation aids, because of the perceived large sum of money needed all at once to pay for these aids [49]. This poses a significant barrier to cessation initiation and SHSe reduction and needs to be addressed as a public policy level to increase access to low cost cessation aids [48, 49]. There are several free cessation treatment options available, including free quit hotlines, but most participants were unaware of them; public awareness needs to be raised regarding the availability of these options.

Of particular interest is the finding that physician support is perceived as particularly effective as a facilitator to quit smoking. Several participants expressed the need to speak with their physician to obtain low cost cessation aids or prescriptions as a necessary initial step prior to cessation. Previous research has shown that the more the physicians discuss smoking cessation, the more likely the patient will quit smoking [50–52], which influenced the development and dissemination of the 5 A's to prompt physicians to counsel patients about smoking [53]. However, there is less focus on the importance of physician counseling to reduce SHSe, especially in the pediatric setting [54–56]. Previous research has found that pediatric physician recommendations have been associated with increased HSB implementation among African-Americans [27]. This study supports the importance of physician support in reducing SHSe, and highlights the need for increased engagement by pediatric healthcare providers to assess and counsel patients about the importance of SHSe reduction in the home.

Previous research has shown that MI is effective in promoting health behavior change in minority populations [57–61]. The results from the larger

randomized trial indicate that MI was effective in reducing SHSe [30]. However, our findings also highlight the need for additional tailoring of interventions targeted toward unique cultural groups and settings. Some research has shown that interventions can be successfully tailored to promote greater acceptability among ethnic minority groups [62–68], including interventions targeting smoking behaviors among African-American and other minority populations [63–65], and MI interventions [67, 68]. For example, Orleans and colleagues [64] tailored a SHSe reduction intervention for African-American smokers by including information about specific obstacles more often faced by African-American smokers, including stronger smoking norms, higher rates of stress, lack of information about harmful effects of smoking, and low daily rate of smoking; the tailored intervention was associated with more quit attempts than standard counseling. There is evidence that tailored cessation interventions are more preferred and appealing to African-American smokers [66] and more successful than standard practice at increasing short-term likelihood of cessation [65]. Additional tailoring to address unique challenges could also improve the overall efficacy of HSB interventions. This study's MI intervention was tailored for an urban, low-income population, but further tailoring—such as greater emphasis on shared childrearing, intergenerational households, and the cost/availability of cessation aids—could improve interventions for this population. These findings also support the need for multi-level interventions to reduce SHSe. Given the important influence of interpersonal factors (i.e. caregiver's social network, advice from physicians and medical providers) and policy (i.e. availability and access to cessation supports) on caregiver's abilities to reduce SHSe, multi-level interventions seem vital to reducing disparities in SHSe. Ultimately, improved interventions can be used to reduce disparities between low-income urban populations and other groups regarding children's exposure to secondhand smoke.

This study has some limitations that should be noted, the majority of which are inherent to qualitative research studies. One limitation is that the

current study was conducted within the context of manualized intervention sessions. Thus, the sessions have ecological validity, but because they were not designed to fully describe all possible barriers/motivators, some barriers/motivators may be under-identified. Also, since the primary target of the intervention was to reduce children's SHSe through encouraging a smoking ban in the home, barriers to smoking cessation may not be as deeply articulated as those for HSB implementation. Second, all participants were low-income, African-American, and living in a single urban city, so findings may not generalize to other settings. However, this may be a study strength since the population is a particularly vulnerable to risk of SHSe and may benefit from more targeted interventions and research to address health inequalities. Despite these limitations, qualitative research offers the opportunity to identify novel information that may not be captured by traditional research methodologies, particularly on the difficulty of SHSe reduction among urban low-income populations. Future research should focus on the impact these barriers and facilitators have on treatment efficacy as well as differences between smoker and non-smoker families in larger samples.

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## Conclusions

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This study highlights barriers and motivators to SHSe reduction, which can then inform the development or refinement of counseling interventions to reduce SHSe in an urban population. When designing counseling interventions, interventionists should be informed by the target population's culture and environment. This intervention was designed based on principles of MI, which is typically patient-centered. However, more tailored training is still needed for expected responses within that specific cultural framework and setting. Tailored interventions could help African-American caregivers better navigate unique barriers which may help increase engagement and efficacy.

This study's findings highlight a need for increased availability, dissemination and

awareness-building of low-cost or free cessation aids, such as free ‘quitlines’ (i.e. free hotlines that provide support for cessation). Similarly, engaging health care providers to assess and counsel caregivers about SHSe reduction is important since they are seen as a major source of support for caregivers in making health behavior change. The results also highlight the importance of considering the child’s developmental stage when providing messages to parents who smoke. Parents of preschoolers face particular challenges with regard to childcare when attempting to implement a HSB, since they are unable to leave their child unattended in the home to smoke outside, and are limited in options for low-cost, high-quality childcare. Quitting smoking may be a better option for these parents. In general, practitioners should take care to tailor counseling interventions based on the target population’s culture and environment. This research contributes to the public health importance of reducing disparities in SHSe by highlighting the particular challenges and facilitating factors that urban, low-income, predominantly African-American caregivers can face when attempting to reduce their child’s SHSe.

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### Conflict of interest statement

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None declared.

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