Secondhand Smoke Exposure, Awareness, and Prevention Among African-Born Women

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Background: Little research exists on exposure to the health risks of secondhand smoke among women and children in African immigrant communities.

Purpose: This exploratory study aims to understand the prevalence of secondhand smoke exposure; assess levels of awareness of the dangers of secondhand smoke; and identify strategies for building increased awareness of these issues in African immigrant communities in Minnesota.

Methods: Key informant interviews with ten African women community leaders, focus groups with 29 female African youth, and surveys of 223 African women were conducted between August 2008 and March 2009. The focus groups and key informant interviews were in English, and the surveys were in English, French, Oromo, and Somali.

Results: Over one quarter of African women reported daily exposure to cigarette smoke, and one in ten women reported daily exposure to smoke from shisha (fruit-flavored tobacco smoked in a hookah or waterpipe). Many respondents had general awareness of the health impacts of tobacco smoke, but some were unsure. The majority felt that increased awareness was badly needed in their communities. Awareness of the health impacts of shisha smoking was particularly low. Strategies for increasing awareness include: using media and visual images, attending large gatherings, and appealing to community members' priorities, including protecting their children.

Conclusions: Exposure to secondhand smoke among women and children in African immigrant communities in Minnesota is substantial. Awareness about the health impacts of secondhand smoke exposure in these communities needs to be increased. Disseminating visual information at existing community gatherings or appealing to individual priorities may be the best approaches to increase awareness and motivate change.

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Introduction

The WHO predicted that by 2030 tobacco use would cause more deaths worldwide among people from developing nations than AIDS, malaria, tuberculosis, maternal mortality, motor vehicle accidents, homicides, and suicides combined.[1] In 2006, the U.S. Surgeon General reported, based on 20 years of scientific research, that there is no risk-free level of exposure to secondhand smoke.[2]

Recent surveys have found that many African people are not aware of the negative health effects associated with smoking.[3–5] A 2007 ClearWay Minnesota[SM] study of West African smokers found that study participants reported general awareness of smokers' health risks, but much less knowledge about the impacts of secondhand smoke exposure. Of the 136 West African immigrant smokers interviewed, a high percentage reported that their smoking increased after settling in the U.S. The prevalence of smoking increased particularly for West African men.[6] A number of studies have found that African-born men are much more likely to smoke than African-born women.[3,6–8]

Higher smoking prevalence among men is often linked to higher levels of secondhand smoke exposure among nonsmoking women and children living in the smoker's household.[9] Women have been found to impose restrictions on smoking behavior in specific spaces within the home in an attempt to create a smokefree environment for their children, but these restrictions are often limited by the physical environment of their homes.[10]

The dangers of secondhand smoke exposure, combined with increased tobacco use and limited awareness of health impacts among African immigrants, indicate a strong need for additional information to be gathered from and disseminated back to African communities.

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The goals of this study were to:

1. understand the prevalence and contexts of secondhand smoke exposure among African women and girls in Minnesota;
2. assess levels of awareness of the dangers of secondhand smoke in African women and their broader communities; and,
3. identify strategies for building increased awareness of the risks associated with secondhand smoke exposure in African immigrant communities in Minnesota.

Methods

The research methods used in the project included: key informant interviews with African women leaders in the community, focus groups with African adolescent girls, and a survey of African women. All methods were reviewed and approved by the Minnesota Department of Health IRB. Methods for each are described below.

Key informant interviews were conducted with ten community leaders during July and August 2008. Community leaders were nominated by members of a diverse African advisory board based on their connectedness, status, and leadership roles within their communities. All interviews were conducted in English because of participants' proficiency and comfort with the language. Informed consent was collected from all participants. The interview asked the leaders specifically if smoking tobacco is perceived as an important health problem, if people understand what secondhand smoke means, and what would motivate people to address secondhand smoke. All of the key informant interviews were digitally recorded and transcribed. The interview data were analyzed using Atlas TI to microcode qualitative responses into themes.

The female leaders interviewed represented the following countries: Cameroon ($n=2$), Congo ($n=1$), Ethiopia ($n=2$), Liberia ($n=2$), Somalia ($n=2$), and Togo ($n=1$). Each woman is native to the country she represents and serves in an advocate role within her specific community in Minnesota.

Focus groups with African adolescent girls were conducted in November 2008. The participants were recruited through their participation in African youth groups within their communities, and the focus groups were conducted at the youth group meeting sites. In order for youth to participate, parents were required to provide written consent, and youth were required to provide written assent. Many of the participants represented different language groups, particularly Somali; however, they felt comfortable with the groups being conducted in English. The focus group questions asked the adolescents about their knowledge of the health impacts of secondhand smoke, any rules regarding smoking in their homes, their exposure to smoking, and how smoking is discussed in their communities. All of the focus groups were digitally recorded, transcribed, and analyzed with thematic coding. Each focus-group participant received a $25 cash incentive.

The adolescent girls were aged 15–18 (M=16) years. The size of the four groups ranged from six to nine participants, with two groups having seven participants. The youth identified themselves as Somali ($n=14$), Liberian ($n=11$), and Nigerian ($n=5$). One participant identified herself as both Liberian and Nigerian.

Surveys with African women specifically asked women about their exposure to secondhand smoke; if they ever asked someone who was smoking to stop; their knowledge about the negative effects of smoking and secondhand smoke; and information about tobacco and its health effects that is needed in their community. Subthemes from the focus groups and interviews were used to develop survey questions and response categories for the 43-item self-administered survey. The survey was translated into French, Oromo, and Somali. An initial sampling frame of 148 women was developed by tapping into existing African social networks to identify women aged ≥18 years. Snowball sampling then took place from the initial sampling frame, which increased the sampling frame by approximately 194 women. Women completed the survey in February and March 2009 in a variety of settings including community events, day cares, churches, and respondents' homes. All participating women were required to provide written consent. Surveys and consent forms were read aloud in French, Oromo, Somali, and English for those participants who could not read proficiently. As an incentive, all participants were entered into a lottery to win a $10, $20, or $50 prize.

From the expanded sampling frame of approximately 342 women, a total of 223 completed the survey for a response of roughly 65%. Most of the women were from Somalia (67%), although 11 other countries were represented as well. The over-representation of Somali participants in this study is not surprising given that they are the largest African immigrant group in Minnesota.[11]

Most of the women were originally from Africa (88%) and have lived in the U.S. from 1 to 47 years (M=9 years). The majority of the surveys were completed in English (75%), followed by Somali (21%), French, and Oromo (2% each), although most of the women who took the survey said that they do not usually speak English at home (58%). Of the women who do not usually speak English at home, the most common language spoken was Somali (53%). The women who completed the survey ranged in age from 18 to 81 (M=35, median=25) years. Over one third of the women have children aged <18 years living in their home. Homes with children had one child on average, although women reported having up to seven children living with them.

Results

Exposure to Secondhand Smoke

Questions about personal experiences with exposure to smoke in multiple contexts were asked in the survey of African women (Table 1) and the focus groups of African female youth.

In the surveys, nearly one third of women reported exposure to smoke in the past month, and over one quarter reported exposure in the past day; however, the locations of this exposure varied. In the focus groups, the youth identified four primary situations in which they are exposed to secondhand smoke: with family or friends, passing by neighbors, at school, and in public. Many of the young women identified smoke entering their living space due to neighbors smoking, a lack of discipline for smoking in school, and exposure in public areas, such as streets and bus stops, both of which they felt unable to avoid.

Rules and Regulations

Over three quarters of survey participants reported that they impose restrictions on smoking behaviors in an at-

Table 1. Survey data related to exposure to secondhand smoke by location (n=223)

Location of exposure	Exposure to cigarettes or small cigars (%)		Exposure to shisha[a] (%)	
	Past 24 hours	Past 30 days	Past 24 hours	Past 30 days
Visiting friends	11	7	6	3
Community event	9	13	4	2
Party	9	9	4	3
Home	7	5	2	3
Car	7	5	1	<1
Visiting relatives	7	7	1	2
Work	7	8	<1	2
Club or cafe	7	8	<1	2
Any location	27	31	11	9

[a]Shisha is fruit-flavored tobacco smoked out of a hookah or waterpipe.

tempt to create a smokefree environment. They did this by having universal rules about smoking in their homes (80%) and around vulnerable people, such as children (79%), pregnant women (78%), and the elderly (76%).

Focus-group participants also reported that their families had rules in place, most of which ban anyone from smoking in the home. Many of these rules were flexible and applied to only certain individuals, such as immediate family members or youth, or certain situations, including smoking only in certain rooms or only when guests are not present.

Strategies for Avoiding Secondhand Smoke

About two thirds of the women surveyed (68%) reported that in the past 6 months they asked someone not to smoke around them. The people they tended to ask were extended family, friends, acquaintances, or strangers, but not immediate family or co-workers. When asked why they requested others to not smoke around them, over half of the women said they did so because of concerns about their own health. Other common reasons for asking someone not to smoke included: smoke bothering their eyes or breathing, not liking the smell of smoke, concerns about the health of a child, and concerns about the smoker's health.

Community leaders reported that the avoidance of secondhand smoke exposure is pervasive within their communities, particularly if it is near them or their children. However, some community leaders reported that barriers such as fear of infringing on peoples' rights and social taboos prevent them from talking about smoking (Table 2).

The young women participating in the focus groups had even greater ambivalence about asking someone not to smoke around them. Some young women were comfortable asking anyone to stop smoking because they felt

Table 2. Sample focus-group and interview quotations describing comfort in using secondhand smoke–avoidance strategies

Comfortable with secondhand smoke–avoidance strategies
"The women in my community that I know, if somebody is smoking where their kids are sitting, they are the first people that say you need to leave here now."[a]
"Me, I don't care. If you are smoking in front of me and I don't like it, I will tell you to stop smoking in front of me."[b]
"I am very comfortable. I tell my brothers all the time that that is just wrong and they should not smoke near me or around the house."[b]
Conditionally comfortable with secondhand smoke–avoidance strategies
"If the person who is smoking is not someone I know, I won't say anything. But if it's like my friend or somebody close to me, I will tell them to stop or I will go somewhere else."[b]
"What I do when like somebody is smoking, I can't like tell the person to stop. If the smoke is affecting me, I will start doing some things, like I will start coughing a lot, so that the person knows that I am affected by it."[b]
Uncomfortable with secondhand smoke–avoidance strategies
"In my culture, because of the dominance of the male, it is quite hard for a woman to address [smoking]."[a]
"If I am waiting at the bus stop and a guy is smoking, I can't go to him and say "stop smoking." I can do it in Africa . . . but can I do that here, no. It is his right, so I can only walk away from there."[a]
"I am not comfortable, especially if it is an adult, I feel like it is not my place to say anything."[b]

[a]Quotations from key informant interviews with female African leaders
[b]Quotations from focus groups with female African youth

Table 3. Survey questions about exposure to smoke knowledge (n=223)

Survey question	Correct response (%)	Incorrect response (%)	"Don't know" (%)
Only smokers have to worry about health risks from tobacco smoke. (A: False)	85	5	10
If a baby has a parent that smokes, she is more likely to end up in the hospital. (A: True)	85	3	12
If someone is smoking in the house, their smoke will not hurt you as long as you are in a different room. (A: False)	84	4	12
Children can get asthma from breathing an adult's cigarette smoke. (A: True)	81	8	11
As long as a pregnant woman does not smoke tobacco herself, her baby cannot be hurt by other people smoking in the home. (A: False)	72	6	22
Smoking tobacco relieves stress. (A: False)	62	9	29
If a person only smokes 5 cigarettes a day, their risk of getting cancer is about the same as someone who does not smoke at all. (A: False)	47	9	44
Light cigarettes are safer than regular cigarettes. (A: False)	42	3	55
Nonsmokers can get heart disease from someone else's cigarette. (A: True)	36	26	38
Menthol cigarettes are safer than regular cigarettes. (A: False)	32	4	64
Using smokeless tobacco like snuff or chew tobacco is safer than smoking cigarettes or little cigars. (A: False)	31	8	61
The smoke from a shisha pipe is safer than smoke from cigarettes. (A: False)	28	10	62
The only kind of cancer caused by tobacco smoke is lung cancer. (A: False)	28	42	30

that they were entitled to be free of secondhand smoke. Others were comfortable only in specific circumstances or indirectly communicating this message. Finally, some of the young women said they were not at all comfortable asking someone to stop smoking near them due to social constraints (Table 2).

Awareness of the Health Impacts of Smoke

The survey and focus-group participants demonstrated a high level of personal awareness of the health impacts of tobacco smoke. However, this awareness was often couched in uncertainty.

Of the 14 knowledge-related survey questions about the health impacts of tobacco smoke, respondents answered from 0 to 13 correct (M=7 correct). Many gaps in knowledge were seen, particularly in regard to whether different types of tobacco products (e.g., menthol cigarettes, light cigarettes, shisha, smokeless tobacco) were safer than regular cigarettes (Table 3).

The adolescents who participated in the focus groups demonstrated a general awareness of the negative impacts of smoking on health, appearance, and life. The young women also had a great deal of awareness of the dangers of secondhand smoke exposure. However, some of the awareness they demonstrated was not especially accurate or certain.

Both community leaders and focus-group participants expressed a great deal of ambivalence around whether or not members of their communities were aware of the health risks associated with tobacco smoke (Table 4). Many youth and adults believed that members of their community do not know about these risks. However, some community leaders argued that it is difficult to be unaware in the U.S., where health messages are so prevalent, and that there is simply a general denial or lack of concern about the dangers of smoking. Focus-group participants echoed this lack of concern among community members.

An unanticipated theme that emerged was related to awareness of the risks associated with shisha smoke. Shisha is fruit-flavored tobacco smoked through a hookah or waterpipe. In the interviews and focus groups, respondents expressed some confusion around whether shisha counts as tobacco, with one respondent stating that some people were trying to connect shisha to fruit because of the fruit-flavored varieties. There was also a common impression that shisha is safer than other tobacco products because of the flavor, smell, and presence of water.

Strategies for Building Awareness

In order to continue to help community members learn more or care more about the health impacts of secondhand smoke, this study explored strategies for building awareness in African communities.

Table 4. Sample focus-group and interview quotations describing community awareness of tobacco smoke dangers

Community members are unaware
"If they knew that the secondhand smoking would have that kind of effect on their kids, I don't think they will smoke. I don't think they are aware."[a]
"People are smoking 30, 40 years and nothing has happened to them, you know, outward. Therefore they believe that people cannot get sick. But you know it is affecting them from the inside. Therefore they don't understand and it is hard for them to understand that."[a]
"I just heard about secondhand smoke. I didn't know it existed. I just thought that a person who smoked was the only one affected and others were not. So if I didn't know, I don't think my parents know either."[b]
Community members are aware
"In this country, it is very, very easy to know that it does, when you hear all the promotions on nicotine and the addiction to nicotine and quitting and all that, so people know."[a]
"You can't imagine how much they know about bad things about cigarettes . . . . They know what damage it does to them, they hear it everywhere. They get their information from the Internet, from their schools, from their community, wherever."[a]
Community members are aware, but do not care
"They are aware of all the bad effects of smoking. Even the smokers make comments like, 'I know this will kill me one day.' So they know, but they can't quit. They are aware of this."[a]
"I pretty much think they know [smoking] is not good. But it is like part of the culture."[a]
"I don't think they look at it as a problem. I think that when they came here, they heard that smoking is bad for you, you should stop, but I don't think they really care about it."[b]

[a]Quotations from key informant interviews with female African leaders
[b]Quotations from focus groups with female African youth

Types of Information Needed

A series of survey questions asked women to rate the need for specific types of information. A large majority of women (83% or more) reported that each of the different types of information was needed in their communities (Table 5).

Strategies for Sharing Information

Both community leaders and focus-group participants were asked for suggestions about strategies for helping build greater awareness in the community.

The focus-group participants suggested presenting information at larger group events, such as community events, churches, parties, or in the classroom, to help increase awareness of the dangers of exposure to smoke. Large events were also mentioned by community leaders as a forum for sharing information; however, leaders emphasized attending existing gatherings, rather than hosting gatherings for the purpose of sharing information.

A commonly mentioned strategy for increasing awareness of the dangers of exposure to smoke was using the

Table 5. Survey questions about kinds of information about tobacco use needed in communities (n=223)

Type of information	Very much needed (%)	Needed a little (%)	Not needed at all (%)	Missing (%)
Health risks for smokers	87	3	3	6
Health risks for nonsmokers	85	5	4	6
Secondhand smoke health risks for pregnant women and their babies	88	4	2	6
Secondhand smoke health risks for children	89	2	3	5
How tobacco companies design their products to get people "hooked" quickly	83	6	4	8
How tobacco companies market their products to certain communities	83	5	5	7
Strategies other communities have used to prevent youth from starting to use tobacco products	87	3	3	7
Ways that doctors can help people quit using tobacco	88	3	2	7
Strategies other communities have used to help people quit using tobacco	88	3	3	7

media, including radio, TV, Internet, newspapers, and other printed materials to get the messages out. Community leaders compared these proposed strategies to the media campaigns used to build awareness about HIV and AIDS or other public health issues.

Both the young women and community leaders mentioned that a potential strategy for increasing awareness of the dangers of exposure to smoke includes using visual images or examples. By informing people about how smoke affects their bodies inside and out, the participants believed that it would inspire people to stop smoking or prevent people from starting to smoke. Community leaders emphasized that visuals are far more effective in their communities than written text.

The young women also suggested trying to relate to people individually to help them understand the health risks. This primarily meant persuading people by figuring out what information is important to them. Community leaders also described ways to relate to priorities of people in their communities, especially focusing on children because they believe that people's concern for their children will be a powerful motivator.

Discussion

The current study reinforces findings from previous studies regarding limited awareness among African people of the negative health impacts of smoke exposure.[3,4] This has been shown to be especially true when examining awareness of specific risks, as opposed to health risks in general.[6] It may be that community members are more familiar with general information, but as information becomes more specific or nuanced, community members may not be provided with or be able to retain the information.

It appears that there is an especially strong lack of understanding of the risks of shisha, which generally exceed the risks associated with cigarette or cigar smoking.[13] Shisha smoking could be underreported because of a lack of understanding of shisha as a tobacco product. The prevalence of shisha smoking that emerged in this study is likely a glimpse of what may be a larger issue that warrants continued research and intervention.

Participants were relatively divided on the levels of awareness of the negative effects of tobacco they perceived in their communities. Some participants felt that their community members were completely unaware of the health risks of tobacco smoke and that, with greater awareness, people would probably not engage in smoking activities. However, other participants believed that, in the U.S., information about the health risks is unavoidable and that community members were aware, but in denial or did not care. These opposing viewpoints indicate that either more information or a more effective way of disseminating information is required to motivate community members to decrease smoking risks. Individualized, culturally appropriate approaches are described as essential for promoting smoking cessation and informing immigrant populations about the risks of smoking and exposure to secondhand smoke.[14] Perhaps the information being disseminated in the U.S. is not culturally relevant to African communities and therefore is being misunderstood or dismissed.

Based on the information from interview, focus group, and survey participants, African women in this sample tend to have rules in place to restrict their exposure to secondhand smoke, which is consistent with findings from broader studies of women's efforts to create smoke-free environments.[10] Study participants have developed strategies for avoiding smoke exposure, including asking others not to smoke around them and simply walking away from a smoker. However, the rules tend to be conditional or flexible, and the women had varying levels of comfort with using avoidance strategies. Protection of others' rights and social norms may be barriers to the use of these avoidance strategies in specific situations, as they are in other cultures.[12] Additionally, these strategies do not address the community-wide dangers of secondhand smoke exposure. A broader systems approach may be necessary to combat exposure despite having personal rules and strategies in place.

This study had two important limitations. First, the population examined was a convenience sample in which the participants were recruited through nominations and snowball sampling. These respondents tended to already be concerned about community health issues and had a general understanding of health risks associated with secondhand smoke exposure. Moreover, there was an overrepresentation of Somali women included in the sample. Future research should include a more generalizable sample of community members from diverse African communities or include a series of targeted investigations within several other communities. Second, this study focused primarily on secondhand smoke exposure of women, with less emphasis on children. While exposure of children was queried, and adolescents were included in the focus-group sample, more specific information about levels and impacts of secondhand smoke exposure should continue to be gathered. This is particularly important because this study revealed that the health of children is a motivating factor for behavior change.

Finally, the findings from this study demonstrate the high level of need for general information about the risks associated with tobacco smoke within African communities. The results suggest that this information needs to be broadly directed and not necessarily targeting any spe-

cific topic, population, or risk. Given the social barriers preventing individual avoidance of tobacco smoke, information may need to be particularly disseminated among those able to influence the social norms in these populations.

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References

1. WHO. WHO report on the global tobacco epidemic, 2008: the MPOWER package. whqlibdoc.who.int/publications/2008/9789241596282_eng.pdf.
2. USDHHS. The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. USDHHS, CDC, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2006. http://www.surgeongeneral.gov/library/secondhandsmoke/report/fullreport.pdf.
3. Kurtz ME, Azikiwe U, Kurtz JC. Nigerian urban married women's perceptions of exposure to secondary tobacco smoke. Health Care Women Int 1993;14(3):239–48.
4. Martin G, Steyn K, Yach D. Beliefs about smoking and health and attitudes toward tobacco control measures. S Afr Med J 1992;82(4):241–5.
5. Pobee JO, Larbi EB, Kpodonu J. The profile of the African smoker: the Ghana smoking studies. East Afr Med J 1984;61(3):227–33.
6. Pierce A, Cooper T, Martin N, Romero SM, Owen G, Tarley J. Tobacco use and attitudes among West African communities in Minnesota St. Paul MN: Wilder Research, 2007. www.wilder.org/download.0.html?report=1988.
7. Adelekan ML, Ndom RJ, Imouokhome-Obayan A. Monitoring trends in substance use through a repeat cross-sectional survey in a Nigerian university. Drugs Educ Prev Pol 1996;3(3):239–47.
8. Omuluabi PF. A review of the incidence of nonprescription psychoactive substance use/misuse in Nigeria. Int J Addict 1995;30(4):445–58.
9. Ivey SL, Faust S. Immigrant women's health: initial clinical assessment. West J Med 2001;174(6):433–7.
10. Robinson J, Kirkaldy AJ. Disadvantaged mothers, young children and smoking in the home: mothers' use of space within their homes. Health Place 2007;13(4):894–903.
11. Singer A, Wilson J. From 'there' to 'here': refugee resettlement in metropolitan America. Washington DC: Brookings Institution Metropolitan Policy Program, 2006. www.brookings.edu/metro/pubs/20060925_singer.pdf.
12. Le A, Jenkins CN, McPhee SJ. Marketing tobacco. Public Health Rep 1998;113(2):101.
13. WHO Study Group on Tobacco Product Regulation. Waterpipe tobacco smoking: health effects, research needs, and recommended actions by regulators. Geneva: WHO Press, 2005. www.who.int/tobacco/global_interaction/tobreg/Waterpipe%20recommendation_Final.pdf.
14. Ma G. Smoking messages may miss Asian Americans. www.innovations-report.com/html/reports/studies/report-60465.html.