

“Coming to Town”: The Impact of Urbanicity, Cigarette Advertising, and Network Norms on the Smoking Attitudes of Black Women in Cape Town, South Africa

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ABSTRACT *This study was conducted to examine the effect of urban living on smoking attitudes among black African women in South Africa. We examine how urbanicity affects attitudes toward smoking and how it moderates the relationship between both advertising exposure and network norms on black women’s smoking attitudes. Respondents were 975 black women currently living in Cape Town townships, some of which were raised in rural villages or small towns. Respondents completed a cross-sectional survey, which included data on smoking attitudes, norms, and exposure to cigarette advertising. Multiple linear regression analysis was performed with smoking attitudes as the response variable, and urbanicity, cigarette advertising exposure, and network smoking norms as primary explanatory variables. Interactions were tested to determine whether urbanicity modified the effect of advertising exposure and network norms on smoking attitudes. Independent effects of urbanicity, exposure to cigarette advertising, and greater smoking prevalence within women’s networks were associated with more favorable smoking attitudes. In addition, urbanicity moderated the relationship between network smoking norms and smoking attitudes, but not cigarette advertising exposure and smoking attitudes. Urbanicity, cigarette advertising, and networks play important roles in women’s attitudes toward smoking, and potentially, smoking behavior. Overall, our results suggest that strong and creative anti-smoking efforts are needed to combat the potential for a smoking epidemic among an increasingly urbanized population of black women in South Africa and similar emerging markets. Additional research is warranted.*

KEYWORDS *Urbanicity, Cigarette advertising, Smoking attitudes, South Africa, Women’s health*

INTRODUCTION

As cigarette smoking has decreased in the United States, there has been concern about tobacco consumption shifting from the US to emerging markets such as Africa, Asia, Latin America. Whereas the proportion of Americans who smoke cigarettes has decreased by 50% since 1965,¹ the number of female smokers worldwide is growing at an alarming rate.² Researchers and anti-smoking advocates attribute part of the growth of smoking among women in developing economies to increased targeting of women by multinational tobacco corporations driven by the need to continually recruit new smokers to maintain profits.

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Tobacco marketing targeted at women in low-income countries is of significant public health concern, in part because of the contribution of tobacco usage to disease, low-birth weight among infants, and early death.²⁻⁵ Even modest increases in uptake of smoking by women in low-income countries could significantly increase the rate of tobacco-induced disease, as foreshadowed by the fact that in the United States, lung cancer has become the leading cause of death among women and the second leading cause of death overall.⁶ In addition, because women are central to many households, women's tobacco usage and attitudes toward smoking likely influence tobacco usage by those around them, including their children, family, and friends.^{7,8} Women's smoking also results in the exposure of household members to second-hand smoke. Therefore, tobacco control efforts to curb the burden of disease and suffering caused by tobacco usage in lower income countries need to aim not only at lowering tobacco use in general, but also at maintaining low levels of smoking among women. Research into what alters the protective factors that have kept women's smoking rates low is needed to inform the design of tobacco control legislation, public health policies, social marketing campaigns, campaigns to change tobacco company practices, and other tobacco control interventions.⁹

BACKGROUND

Black Women's (Non) Smoking Lifestyle in South Africa

This study investigates the role of urbanicity, advertising exposure, and personal network smoking norms on the smoking attitudes of black African* women in South Africa (SA), a strategically important market for “fast moving consumer goods”, products like cigarettes and snuff.¹⁰ In South Africa, black women comprise 40.3% of the total population and 79.5% of women;¹¹ thus, it makes strategic sense for corporations to attempt to influence them to adopt a smoking lifestyle.¹²⁻¹⁵ Traditionally, however, black women have had among the lowest rates of smoking in South Africa—with estimates of their smoking incidence ranging from 7 to 12%.¹⁶⁻¹⁹ The dominant explanation for the low prevalence of smoking among black women is that it is culturally taboo. Qualitative research has found that smoking among black women is perceived to be disrespectful, manly, and shameful behavior for a female.^{10,20} This notion is consistent with research regarding the social acceptability of female smoking in other emerging economies.²¹ However, researchers suggest that the social acceptability of smoking among women is changing among the youth.²²

Urbanization and Urbanicity in South Africa

Health status research in South Africa suggests that patterns of illness and chronic disease are related to urbanization, or the process of urban growth and development.^{23,24} As SA becomes more urbanized, the impact of urbanization may contribute to more positive attitudes toward smoking among black women in South

*During the apartheid years, the Population Registration Act of 1950 classified all South Africans into “racial groups”. These groups included “black” (people of black African descent), “colored” (people of mixed descent), “white” (people of European descent) or “Asian” (people of Indian and Pakistani descent). Information is still collected along these “racial” divisions in public health to address disparities based on the classification. The use of these variables in this research is not intended to convey that the authors subscribe to this classification.

Africa. The migration of black women from rural areas to cities is a relatively recent phenomenon, based on the decreasing level of agricultural activity by women, the increasing availability of jobs in the city, and the desire of women to join their spouses in urban areas.²⁵ Transitioning into an urban area from a rural area—what is commonly called “*coming to town*”—involves psychosocial changes in self-definition as well as social influences that may have implications for increased smoking. This study measured women’s degree of identification and experience with urban contexts—‘urbanicity’—to investigate its relationship with smoking attitudes. In addition to measuring urbanicity, we explore two exposures that may vary with it: cigarette advertising and network norms around smoking.

Advertising

Markets in urban areas offer easier access to a greater variety of media, images, ideas, and products than rural areas. Tobacco advertising, in particular, presents ideas and images, which can influence people to smoke. Research suggests that smoking among women in North America and northern Europe became socially acceptable in the 20th century caused in part by the way in which multinational tobacco corporations strategically targeted tobacco to women, oftentimes by exploiting women’s struggles for equality and independence.²⁶ For example, Virginia Slims’ cigarette advertising used the slogan “*You’ve come a long way baby*” to target women in the US based on the emerging women’s movement and women’s changing societal roles.²⁷ A 1990 editorial in *Tobacco Reporter* noted the growth opportunities represented to the industry by women: “Women are becoming more independent and, consequently, adopting less traditional lifestyles. One symbol of their newly discovered freedom may well be cigarettes.”²⁶ Like other multinational corporations serving consumer markets, tobacco companies heavily research consumers and their divergent contexts worldwide. Whereas companies may pursue standardized global marketing efforts, they also allow regional managers to create regionally appropriate individual advertisements.²⁸ For example, companies adapt their marketing strategies to specific country and cultural contexts based on the regulation of marketing activities, what is socially and culturally acceptable, and women’s current level of smoking, social and economic position, and access to medical care.²⁹

Concern has been raised in public policy debates in South Africa over an increase in cigarette advertising aimed specifically at black and colored women.³⁰ Cigarette companies go beyond advertising and distribute “giveaways”, including clothing, food products, address books, lighters, and pouches, to promote cigarette consumption by women.^{26,29,31} In addition to direct-to-consumer advertising and promotion, tobacco companies have targeted promotion efforts at groups of people and influential individuals aimed at fostering a social and political environment more supportive of tobacco consumption and marketing.³² Thus, tobacco usage among women in emerging economies has been on the rise due in part to tobacco marketing intended not only to encourage tobacco use, but also to alter attitudes and social norms so that smoking is more socially acceptable.

Network Norms

Personal networks, or individuals’ social ties, provide an important avenue for explaining smoking behavior and attitudes. Social norms within personal networks have been identified as a key source of social influence on smoking initiation and maintenance.^{33,34} The belief that a behavior is normative in a community, or among important reference groups, may send a subtle message that the behavior is accept-

able and supported. That is, having partners, family members and friends who smoke, an example of descriptive or behavioral norms, may result in modeling of the behavior by others. Not openly objecting to smoking, a form of tacit approval may support and reinforce positive attitudes about smoking and communicate subjective norms that smoking is acceptable. For example, South African females often access their cigarettes by getting someone else to buy them and by borrowing cigarettes from smoking friends or relatives versus purchasing their own cigarettes in a store.^{35,36} Other research has demonstrated that adolescents who have a high proportion of smokers among their friends and have smokers within their family are more likely to smoke.^{33,34} What is less well understood is: 1) how networks are associated with adult smoking, particularly for transitioning women in emerging economies, and 2) how urbanicity moderates the composition of smokers within one's network. The urban environment may put transitioning women at risk for smoking initiation or maintenance through networks that support the behavior via group norms. By examining networks in this study, we will not only better understand network effects on adult women, but also how they interact with urbanicity to affect smoking attitudes. Further, we advance current knowledge by examining these important relationships in an understudied context.

Study Hypotheses

This study was conducted to examine the effect of urbanicity on smoking attitudes among black women in SA. We specifically examine how urbanicity (identification and experience with urban versus rural areas) affects smoking attitudes, and how urbanicity moderates the relationship between both cigarette advertising exposure and network norms on black women's attitudes toward smoking. The following hypotheses are investigated:

- H1 : Black women's level of urbanicity is associated with more favorable smoking attitudes.
- H2 : Black women's exposure to cigarette advertising is associated with more favorable smoking attitudes.
- H3 : Black women's exposure to stronger smoking norms within their networks is associated with more favorable smoking attitudes.
- H4a : The relationship between black women's exposure to advertising and smoking attitudes will be moderated by urbanicity such that exposure to cigarette advertising will be higher for women characterized as more highly urban.
- H4b : The relationship between black women's personal networks and smoking attitudes will be moderated by women's level of urbanicity such that behavioral smoking norms will be higher for women characterized as more highly urban.

Method

Research Design The present research was part of a larger study that examined the knowledge, attitudes, and practices of black women in South Africa regarding tobacco use. Study participants were asked questions (in order) related to urbanization, media exposure, lifestyle, smoking behavior, attitudes, education, employment, and alcohol usage. In this study, we report on a cross-sectional analysis of the relationship between urbanicity and smoking attitudes among Xhosa-speaking females living in black townships in Cape Town, South Africa.

Sample and Recruitment A multistage stratified sampling plan was used to randomly recruit participants from among all Xhosa women between the ages of 15 and 65 living in black townships in the Cape Town metropolitan area. These townships were the only Cape Town areas open for residence by black people during the apartheid regime. Although such racial restrictions were legally abolished in 1994, the vast majority of black women in Cape Town still resided in the townships sampled. The sample drawn was stratified according to two age groupings (15–29 years and 30–64 years) and three housing contexts. In the first stage of the sampling procedure, all black townships were divided into three housing contexts: informal unserviced, informal serviced, and formal serviced. Next, using aerial maps of the region, eight township areas were randomly selected from each housing context from which to draw respondents. Finally, 55 women were randomly selected from each area to participate in the study, with half of them being from the younger age group and half from the older. The total female black population in the sample frame was estimated by the South African Census Bureau to be 216,454, out of which 1320 were interviewed.

Data Collection The questionnaire was translated from English into Xhosa by nine field workers and the field supervisor who were all Xhosa-speaking black women. The questionnaire was then back-translated to verify translation accuracy. The field supervisor managed the fieldworkers, handled the distribution, collecting, editing, and checking of the questionnaires, and dealt with governing bodies in each area to ensure easy access to potential respondents. Before fieldworkers entered an area, the field supervisor distributed a letter in both English and Xhosa, which was endorsed by the vice-chancellor of the University of Cape Town and the Medical Research Council of South Africa, addressed to the community leaders of the area. The letter outlined the benefits and motives for the research study.

The questionnaires were administered in Xhosa by the fieldworkers to the participants, with the questions being read aloud and the answers recorded by the fieldworkers. Interviewer administration was important because of diversity in the educational levels of our respondents. Interviews lasted an average of 30 to 45 minutes. At the end of the interview, respondents received a small gift of a key ring that read “I’m too special to smoke.” Data were collected in 1999.

Measures The primary measures used for this analysis were urbanicity, advertising exposure, network norms around smoking and attitudes toward smoking (outcome). Urbanicity was measured using two questions: “Where were you born?” (a rural village, small town, or large town/city), and “Where do you regard as your home?” (homeland* or Cape Town). We created a three-category urbanicity variable that ranged from 0 to 2. Individuals who fell into category “0” would have answered that they were from a rural village and considered home as their homeland. These individuals were considered “low” on the urbanicity continuum. Individuals who fell into category “2” of the urbanicity variable would have been individuals from a large city who considered home to be Cape Town (“high” urbanicity). Likewise, individuals who reported being from a large city and who considered home to be their homeland were also categorized as “high” on urbanicity. The remainder of the

*Prior to 1994, apartheid laws required black South Africans to reside in specific and mostly rural areas designated as tribal “homelands”.

sample was categorized as “moderate,” as they represented women who have transitioned from rural villages or small towns to Cape Town and/or still considered home the village or small town from which they originate, suggesting some psychological disconnect from the urban environment in which they currently live. In simple terms, “moderate” women were more urban than rural-born women who considered home their homeland, but less urban than women who were born in large cities and identified with big city living.

Exposure to cigarette advertising was measured by asking whether the women had seen or heard an advertisement for cigarettes in the last week (yes/no). Those who reported ‘yes’ were subsequently asked where they had seen or heard the ad—television, radio, magazine, newspaper, or other. Responses were summed across media categories to create a single variable that measured exposure to cigarette advertising.

The measure of behavioral norms among network members is an aggregate of eight dichotomous measures (0 = does not smoke, 1 = smoke) concerning whether people around them smoke, including the person’s family members (mother, father, children, sisters and brothers), husband/partner and friends. The variable smoking attitudes was measured by five items, each on a five-point scale, asking if women thought smoking was enjoyable, foolish, pleasant, harmful, and good. Negative items were reverse-coded before being summed and higher values indicated more favorable smoking attitudes ($\alpha=0.87$).

Analysis Multiple linear regression was conducted using smoking attitudes as the dependent variable. The smoking attitude composite variable was not normal and first needed to be transformed toward normality before being entered into models. The log transformation was used. Before conducting regression analyses, exploratory data analysis was performed to assess basic relationships among the variables. Based on our hypotheses, we were interested in main effects as well as interaction effects of urbanicity, advertising exposure, and network smoking norms on smoking attitudes. Therefore, as building blocks to the regression models, we examined interrelationships among urbanicity, advertising exposure, and network smoking norms in correlational analyses; then we performed analysis of variance (ANOVA) and chi-square tests, as appropriate. For the variables used in our analysis, we had complete data for 975 women, which is our final sample size. We first fit adjusted linear models with main effects only. We adjusted for age, education, income, marital status, and alcohol consumption. In the second set of models, we fit adjusted linear models with both main effects and interaction terms. Stata/SE 8.0 was used for data analysis.³⁷

RESULTS

Sample Description

Table 1 shows demographic information on the sample. Approximately half of the sample (52%) was never married, 38% were married or living with a partner, and the remainder of the women had been abandoned, separated, widowed, or divorced. Forty-eight percent of women had attained education only through Grade 9 or less. Mean total household income per month ranged between R600 and 799 (\$98–130). Thirty percent reported drinking alcohol. Sixty-three percent of women were born in a rural village or small town. Of the remaining 37% that were born in a large town or city, mostly all (99.1%) were from Cape Town. Forty-two percent regarded their

TABLE 1 Sample description (*N*=975)

Variable	%
Demographics	
Age	
15 to 30 years	50
30 to 65 years	50
Education	
Grade 9 or less	48
Marital status	
Never married	52
Living together or married	38
Separated, divorced, widowed, abandoned	10
Urbanicity	
Low	47
Moderate	16
High	37
Alcohol consumption (yes)	30
Mean total household income per month	R600–799 (USD98–130)

home as Cape Town. Just more than half of the sample (53%) was at least moderately urban.

Urbanicity and Cigarette Advertising Exposure

We first tested to see whether exposure to cigarette advertising varied according to women's degree of urbanicity. Overall, 35% percent of women reported seeing or hearing an ad for cigarettes in the past week. The majority of these women (80%) had heard a cigarette ad on the radio and 37% had seen one on television. Figure 1 shows the breakdowns for exposure to cigarette advertising by level of urbanicity. More women categorized as moderate or high on urbanicity reported seeing or hearing a cigarette ad than women in the low urbanicity group. Twenty-seven percent of women in the low urbanicity group reported seeing or hearing an ad, whereas approximately 40% of women in both the moderate and high urban groups reported such exposure. This difference was statistically significant ($\chi^2=27.6$, $p<0.01$). The women were also asked if they had been exposed to cigarette ads through the television, radio, magazine, newspaper, or other forms and the results are also shown in Figure 1. Except for magazine ($\chi^2=10.6$, $p<0.01$), there were no statistical differences by level of urbanicity in the types of media in which women saw cigarette advertisements. Given these results, for our multiple regression analyses we include only the measure, "have you seen a cigarette ad", as both a main effect and interaction effect with urbanicity.

Urbanicity and Network Smoking Norms

For the sample, smoking norms among family and friends were moderate (mean = 2.6; range = 0, 7). The potential values for smoking norms ranged from 0 (no smoking by any network member) to 8 (smoking among all network members). Twenty-one percent of the women had networks where no one smoked. ANOVA was performed to determine if there were statistically significant differences among

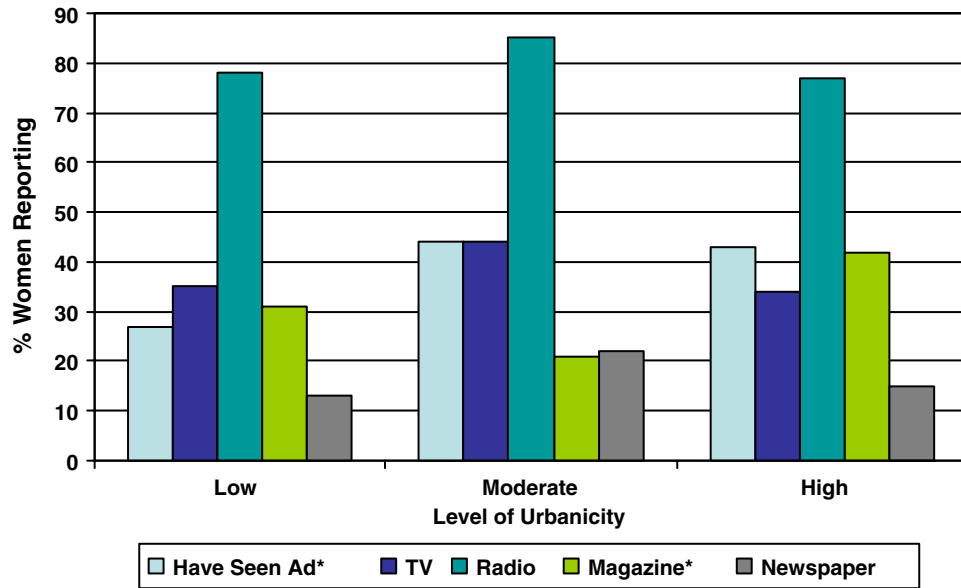


FIGURE 1. Exposure to cigarette advertising by level of urbanicity (* $p < 0.05$).

means of network smoking norms by urbanicity; results indicated no significant differences. See Table 2.

Urbanicity and Smoking Attitudes

Table 2 also shows descriptive statistics for smoking attitudes, the outcome of interest. ANOVA results are presented for both the raw variable and the log-transformed variable. In general, attitudes toward smoking were not favorable. We summed five five-point questions to assess smoking attitudes and the range was 5 (unfavorable) to 24 (favorable). The mean level of smoking favorability was 9.3, suggesting that most women viewed smoking as fairly negative. For untransformed attitudes, we observed a marginally significant difference among the means for the three levels of urbanicity ($F_{(2, 975)} = 2.69$, $p < 0.07$). Once attitudes was normalized, stronger differences were observed among the means ($F_{(2, 975)} = 7.56$, $p < 0.05$), such that smoking attitudes were more favorable with increasing urbanicity.

Multiple Regression Results

Multiple regression analyses were conducted to assess main effects of urbanicity, cigarette advertising exposure, and network norms on smoking attitudes while adjusting for demographics. These results are depicted in Table 3, Model I. The log transformation of smoking attitudes was used to meet OLS normality assumptions for the dependent variable. Low urbanicity was the reference category for all models. The main effect model revealed statistically significant associations of higher levels of urbanicity (moderate: $B = 0.89$, $SE = 0.30$; high: $B = 0.82$, $SE = 0.24$) with more favorable smoking attitudes. Having been exposed to cigarette advertising ($B = 0.57$, $SE = 0.23$) and stronger smoking norms within women's networks ($B = 0.26$, $SE = 0.054$) were also significantly associated with more favorable smoking attitudes. Neither age nor marital status was significantly associated with smoking attitudes. Education and income were both significantly associated with less favorable

TABLE 2 Mean, SD, and ANOVA results for women's attitudes toward smoking and behavioral smoking norms for their networks by level of urbanicity (N=975)

	Total	Low	Moderate	High	F-value
Network Norms	2.6 (2.0)	2.6 (1.9)	2.9 (2.2)	2.5 (2.0)	1.55
Smoking Attitudes	9.3 (5.2)	8.9 (5.2)	9.8 (5.0)	9.6 (5.2)	2.69
Smoking Attitudes (log)	-1.2 (3.3)	-1.6 (3.4)	-.65 (3.2)	-0.93 (3.3)	7.56*

Possible range for smoking attitudes is 0–25, for network norms, 0–8. Higher values indicate more favorable attitudes and more smoking prevalence in networks.

* $p < 0.05$

attitudes. As expected, women who drank alcohol viewed cigarette smoking more favorably.

In a separate model (Model II), interaction terms between urbanicity and advertising exposure, and urbanicity and network norms were added to the model with main effects. Adding interaction terms did not change the results observed in the main effect only model in any meaningful way. The main effects of urbanicity, cigarette advertising exposure, and network norms remained significantly associated with smoking attitudes. Results for the test of moderating effects of urbanicity showed no significant interaction with advertising exposure and a significant interaction with network norms. For network norms, the main effect in Model II was significant and positive ($B=0.32$, $SE=0.078$), but results from the test of the interaction of urbanicity and network norms on smoking attitudes showed a

TABLE 3 Adjusted multiple regression analysis assessing main and moderating effects of urbanicity, cigarette advertising exposure, and smoking norms on smoking attitudes (outcome – log transformed) (N=975)

Variable	Model I		Model II	
	B	SE	B	SE
Main Effects				
Urbanicity—moderate	0.889*	0.302	1.74*	0.525
Urbanicity—high	0.820*	0.245	0.941*	0.391
Seen cigarette ad	0.570*	0.227	0.682*	0.342
Smoking norms	0.257*	0.0537	0.320*	0.0775
Covariates				
Age	-0.0205	0.0114	-0.0204	0.0114
Marital status				
Married/Cohabiting	0.424	0.252	0.406	0.252
Separated/Divorced/Widowed/Abandoned	0.712	0.419	0.678	0.419
Education	-0.120*	0.0443	-0.120*	0.0442
Income	-0.196*	0.0414	-0.186*	0.0414
Alcohol Consumption	0.460*	0.237	0.476*	0.237
Moderating Effects				
Urban_mod*Seen ad			0.471	0.626
Urban_high*Seen ad			-0.553	0.496
Urban_mod*Norms			-0.385*	0.144
Urban_high*Norms			0.0346	0.118

Reference category for urbanicity is "low". Reference category for marital status is never married. Reference category for alcohol consumption is "none"

* $p < 0.05$

negative effect for women of moderate urbanicity (compared to low urbanicity). There was no statistically significant result for the interaction of high urbanicity (compared to low urbanicity) and smoking network norms. Results from tests of associations between demographic variables and smoking attitudes remained consistent with those observed in Model I.

DISCUSSION

In this study, we hypothesized that urbanicity, advertising exposure, and personal networks affect smoking attitudes, and the results support all of our hypotheses except for Hypothesis 4a. For independent effects, greater urbanicity, exposure to cigarette advertising, and more smoking within personal networks were all associated with more favorable attitudes toward smoking. It is interesting that urbanicity did not moderate the association between advertising exposure and smoking attitudes, but it did affect how network norms relate to smoking attitudes. It may be that cigarette advertising is generally pervasive across rural and urban settings and the variability in exposure in our sample was insufficient to demonstrate an effect. Alternatively, where exposure to cigarette advertising is pervasive, other factors have a more significant influence on smoking attitudes. It is surprising to note that, with regard to network norms, we observed evidence of a potential protective effect of smoking norms in women's networks for women in the moderate urbanicity group compared to the low urbanicity group. We had hypothesized, based on past literature, that favorable smoking attitudes would be more likely in more urban areas in part because of greater smoking prevalence among social contacts. The negative interaction for the moderate urbanicity group revealed an association between urbanicity and network norms that was masked by the main effect; however, the direction of the finding was unexpected. It is possible that the result is an anomaly. On the other hand, given that transitioning between less and more highly urbanized environments disrupts social networks, if women had smoking networks in rural areas before moving, then transitioning to Cape Town could protect them as they move and disassociate from smoking friends and family. Without a doubt, urbanization involves upheavals in self-definition and social relationships that have implications for social functioning.³⁸ More research is needed to understand how urban environments affect networks for vulnerable populations, such as women in transition.

Given that urbanicity, advertising, and networks all have independent effects on smoking attitudes, the implications for public health advocates and policy makers are complex. Before the advertising ban and other tobacco control curbs on marketing exposure, when the data for the present study were collected, black women were increasingly being targeted by tobacco companies and exposed to tobacco marketing aimed at them.^{10,29} Since the time this study was conducted, advertising has become highly regulated in South Africa. The 1999 Tobacco Products Control Amendment Act, which was implemented in 2001, banned all advertising and promotion of tobacco products including sponsorship and the free distribution of tobacco products, restricted smoking in public places, stipulated penalties for transgression of the law, and declared the maximum permissible levels of tar and nicotine. The Tobacco Products Control Act was amended in October 2003 to bring it in line with The Framework Convention on Tobacco Control (FCTC), the first international health treaty spearheaded by WHO, which was adopted by the World Health Assembly in May 2003. The amendment increased the

size of health messages on cigarette packs, banned false descriptions of tobacco products (e.g., “mild” and “light”), prohibited the presence of any person under 18 years from a designated smoking area in a public place, increased the minimum age of sale of tobacco products to 18 years, and banned duty-free sale of cigarettes.

Despite these regulations, there remain reasons for concern. Tobacco industry documents discuss strategies for overcoming the country’s ban on tobacco advertising.⁹ Research worldwide suggests that marketers shift to other promotional methods (e.g., sports sponsorship) or creative strategies (e.g., advertising from a neighboring country) to circumvent governmental restrictions.^{39,40} Accordingly, South African observers note tobacco companies increasingly pursue alternate strategies such as the use of tobacco brand names on non-cigarette products to sidestep legal dictates that ban tobacco advertising.⁴¹ Industry observers note that tobacco companies are also using social influence efforts like ‘underground’ parties to lure young consumers—women as well as men—to their brands. Such parties, which are promoted solely through word of mouth, feature popular disc jockeys, music, and visible tobacco logos throughout the venue. Likewise, although not reported here, our data also suggest that black women believe that smoking helps to manage weight, which may be of heightened concern to women who are “coming to town.” Tobacco marketers could exploit this personal belief in creative ways.

Our study is one of the few that examine smoking attitudes among black women in South Africa, and much additional research in this area is warranted, particularly given the sociopolitical changes in the country. Based on our results, together with historical evidence from the US, policymakers might consider taking proactive steps to counter a potential smoking epidemic among black women. Transitioning to a new environment, particularly an urban one with all its risks and opportunities, can be stressful and increase vulnerability to smoking. Proactive strategies might capitalize on black women’s disassociation from smoking family and friends and facilitate supportive opportunities for newly transitioning women that focus on making healthy transitions. Because women are generally exposed to more media in urban areas, policy makers/government agencies can also take advantage of this by communicating the harmful effects of smoking, including the effects of second-hand smoke, which our data (not shown) suggest black women are not keenly aware of. Also, governments can develop social marketing campaigns that counter smoking ads by identifying ideas and images that black women can draw upon to feel empowered and independent, without smoking, in their new urban environment. Further, although not directly assessed, our results support current tobacco control legislation banning tobacco advertising and smoking in public places. Without it, black women’s transitional status as migrants to urban areas could render them more vulnerable to marketing activities intended to encourage tobacco use directly and indirectly, through altering social norms so that smoking is more socially acceptable.

Our study has several limitations that can be addressed in future research. One limitation emerges from the use of self-reports of advertising exposure. Results may be subject to recall bias whereby the extent to which the women report having seen advertising may not accurately reflect their objective exposure. Self-reports are nonetheless commonly used in research in marketing and public health as both predictor and outcome variables.⁴² However, the self-reported measure of tobacco marketing exposure could be strengthened by the incorporation of administrative data. For example, researchers might endeavor to characterize the actual marketing environment of specific groups, even in the midst of the advertising ban. Another

limitation arises with our measure of urbanicity, which does not capture the dimension of time. There is a question in the survey that asks how long respondents have lived in Cape Town. Differences in the scale of the urbanicity items (categorical vs. continuous) prevented us from incorporating the continuous time variable, as converting it to a categorical variable would have limited the information the variable is designed to illuminate. We did, however, conduct analyses with the time variable and the results showed that despite being statistically associated with more positive smoking attitudes, the effects were smaller ($B=0.02$, $SE=0.009$) than the effects observed from the urbanicity variable we used, and therefore, had less practical significance. Despite this limitation, we feel the measure we used was strong as it tapped the variation in black women's experience and sense of identification with urban living. Finally, we use a general measure of smoking prevalence in the network that does not weight by individual the strength of influence of each member's smoking status on respondents' smoking attitudes. Future studies are encouraged to collect data to conduct such weighting and consider differential effects of network members' influence on index respondents' attitudes and behaviors. Overall, our results suggest that strong and creative anti-smoking efforts are needed to combat the potential for a smoking epidemic among an increasingly urbanized population of black women in South Africa and other emerging markets.

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REFERENCES

1. Rodu B, Cole P. Declining mortality from smoking in the United States. *Nicotine Tob Res.* 2007;9(7):781–784.
2. Centers for Disease Control and Prevention. *2001 Surgeon General's Report—Women and Smoking.* Atlanta, GA: CDC; 2001.
3. Mucha L. Meta-analysis of disease risk associated with smoking, by gender and intensity of smoking. *Gen Med.* 2006;3(4):279–291.
4. Ezzati M, Lopez AD. Estimates of global mortality attributable to smoking in 2000. *Lancet.* 2003;362(9387):847–852.
5. Steyn K, de Wet T, Saloojee Y, Nel H, Yach D. The influence of maternal cigarette smoking, snuff use and passive smoking on pregnancy outcomes: the Birth to Ten Study. *Paediatr Perinat Epidemiol.* 2006;20(2):90–99.
6. Landers SJ. Lung cancer deadlier than breast cancer for women. *American Medical News: the Newspaper for American Physicians.* <http://www.ama-assn.org/amednews/2003/12/01/hlsc1201.htm>. Accessed January 8, 2007
7. Murray C, Lopez AD. *The Global Burden of Disease.* Boston, Massachusetts: World Health Organisation; 1996.
8. Yach D, Saloojee Y, McIntyre D. *South Africa: Health and Economic Impact.* Cape Town: MedTech; 1992.

9. Saloojee Y. Tobacco control in South Africa. In: Steyn K, Fourie J, Temple N, eds. *Chronic Diseases of Lifestyle in South Africa 1995–2005*. Athabasca, Canada: Athabasca University; 2006.
10. Marks AS, Steyn K, Ratheb E. Tobacco use by black women in Cape Town. *Med Res Coun Policy Brief*. Capetown, South Africa; 2001;3:1–4.
11. Central Statistical Services/Republic of South Africa. *Mid-Year Population Estimates, 2007*. Pretoria: Statistics South Africa; 2007.
12. Peto R, Lopez AD, Boreham J, Thun M, Heath CJ. *Mortality from Smoking in Developing Countries 1950–2000*. Oxford: Oxford University Press; 2006.
13. Robinson RG, Barry M, Bloch M, Glantz S, Jordan J, Murray KB. Report of the tobacco policy research group on marketing and promotions targeted at African Americans, Latinos and women. *Tob Control*. 1992;1(Suppl):S24–S30.
14. Sacks D, Abratt R. The moral minefield: legal and social issues of tobacco and liquor marketing. In: Abratt R, ed. *Marketing Management: S.A. Cases and Readings*, 2nd edn. Durban: Butterworth; 1989:44–63.
15. Wallach L, Montgomery K. Advertising for all by the year 2000: public health implications for less developed countries. *J Public Health Policy*. 1992;13(2):204–223.
16. Reddy P, Meyer-Weitz A, Yach D. Smoking status, knowledge of health effects and attitudes towards tobacco control in South Africa. *S Afr Med J*. 1996;86(11):1389–1393.
17. Steyn K, Bourne LT, Jooste PL, Fourie JM, Lombard CJ, Yach D. Smoking in the black community of the Cape Peninsula, South Africa. *East Afr Med J*. 1994;71(12):784–789.
18. Steyn K, Kazenellenbogen JM, Lombard CJ, Bourne LT. Urbanization and the risk for chronic diseases of lifestyle in the black population of the Cape Peninsula, South Africa. *J Cardiovasc Risk*. 1997;4(2):135–142.
19. Van Walbeek C. Recent trends in smoking prevalence in South Africa—some evidence from AMPS data. *S Afr Med J*. 2002;92(6):468–472.
20. Marks AS, Hooper V. Beliefs, Attitudes and values influencing smoking behaviour in black women in Cape Town area townships: an exploratory social marketing analysis. Paper presented at the 9th World Conference on Tobacco and Health. Paris; 1994:10–14 October. New York: Plenum Press; 1995.
21. Morrow M, Ngoc DH, Hoang TT, Trinh TH. Smoking and young women in Vietnam: the influence of normative gender roles. *Soc Sci Med*. 2002;55(4):681–690.
22. International Network of Women Against Tobacco (INWAT). INWAT warns of womens smoking crisis. In: *12th World Conference on Tobacco or Health—Global action for a tobacco free future*. Helsinki, Finland, 3–8 August 2003. <http://www.inwat.org/pdf/daily4.pdf>. Accessed February 28, 2007.
23. Vlahov D, Galea S. Urbanization, urbanicity, and health. *J Urban Health*. 2002;79(4: Supp 1):S1–S12.
24. Cooper D, Pick WM, Myers JE, Hoffman MN, Sayed AR, Klopper JML. Urbanisation and women's health in Khayelitsha. Part II. Health status and use of health services. *S Afr Med J*. 1991;79:428–432.
25. Pick W, Cooper D. Urbanisation and women's health in Khayelitsha, Cape Town: An overview. In: *University of Cape Town Working Paper Series on Women's Health and Urbanisation*. Cape Town: Department of Community Health, University of Cape Town; 1993:1–42.
26. Amos A, Haglund M. From social taboo to “torch of freedom”: the marketing of cigarettes to women. *Tob Control*. 2000;9(1):3–8.
27. Otis GA. You're going too far, baby: activists cry foul as cigarette makers woo women in the developing world. *Village Voice*. August 8, 2000.
28. Hafez NL, Ling PM. How Philip Morris built Marlboro into a global brand for young adults: implications for tobacco control. *Tob Control*. 2005;14:262–271.
29. Amos A. Creating a global tobacco culture among women. In: Waller M, Lipponen S, eds. *Smokefree Europe: Conference on Tobacco or Health*; 1996 2–4 October; Helsinki,

- Finland: Finnish Centre for Health Promotion. <http://www.health.fi/smoke2html/Pages/Smoke2-23.html>. Accessed on February 28, 2007.
30. Marks AS. *Submission in Support of the Tobacco Product Control Amendment Bill: the Effects of Advertising and Promotion*. Testimony presented to and tabled by the Health Committee, Parliament of South Africa, October 1998. [http://www.pmg.org.za/PMGArchive/98-99/Previous Term/Marks](http://www.pmg.org.za/PMGArchive/98-99/PreviousTerm/Marks). Accessed on March 5, 1999.
 31. Amos A. How women are targeted by the tobacco industry. *World Health Forum*. 1990;11:416-422.
 32. Warner KE, Butler J, Cummings KM, et al. Report of the Tobacco Policy Research Study Group on tobacco marketing and promotion. *Tob Control*. 1992;1(Suppl.):S19-S23.
 33. Galea S, Nandi A, Vlahov D. Social epidemiology of substance use. *Epidemiol Rev*. 2004;26:36-52.
 34. Valente T, Gallahe P, Moutappa M. Using social networks to understand and prevent substance use: a transdisciplinary perspective. *Subst Use Misuse*. 2004;39(10-12):1685-1712.
 35. Brook JS, Morojele NK, Brook DW, Zhang C, Whiteman M. Personal, interpersonal, and cultural predictors of stages of cigarette smoking among adolescents in Johannesburg, South Africa. *Tob Control*. 2006;15:48-53.
 36. Swart D, Reddy SP, Panday S, Philip JL, Naidoo N, Ngobeni N. The 2002 Global Youth Tobacco Survey (GYTS): the 2nd GYTS in South Africa (SA)—A comparison between GYTS (SA) 1999 and GYTS (SA) 2002. Cape Town: University of Cape Town; 2004. <http://www.mrc.ac.za/healthpromotion/reports.htm>. Accessed March 2, 2007
 37. StataCorp. *Stata Statistical Software: release 8*. College Station, TX: StataCorp LP, 2003.
 38. Ruble DN, Seidman E. Social transitions: windows into social psychological processes. In: Higgins ET, Kruglanski A, eds. *Social Psychology: Handbook of Basic Principles* New York: Guilford; 1997:830-856.
 39. Assunta M, Chapman S. The world's most hostile environment: how the tobacco industry circumvented Singapore's advertising ban. *Tob Control*. 2004;13:ii51-ii57.
 40. MacKenzie R, Collin J, Sriwongcharoen K. Thailand—lighting up a dark market: British American tobacco, sports sponsorship and the circumvention of legislation. *J Epidemiol Community Health*. 2007;61:28-33.
 41. National Council Against Smoking. Illegal advertising of tobacco brand. http://againstsmoking.org/pressreleases/NCAS_illegaladvertising.htm. Accessed on July 15, 2007.
 42. Stone AA, Shiffman S. Capturing momentary, self-report data: a proposal for reporting guidelines. *Ann Behav Med*. 2002;24(3):236-243.