AFRICAN-AMERICAN TEEN SMOKERS: ISSUES TO CONSIDER FOR CESSATION TREATMENT

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Previous reports have indicated ethnic differences in both tobacco-related morbidity and treatment outcome for smoking cessation among adults. We assessed smoking-related characteristics in African-American and non-African American teenagers applying to a cessation trial. 115 teens (15.9 ± 1.8 years, 68% females, 27% African-American) responded via telephone to media ads. Self-reported sociodemographic, medical and smoking-related data were obtained to determine pre-eligibility for a full intake screen prior to trial participation. Compared to non-African American, African American teen applicants were older (16.4 ± 1.7 years versus 15.6 ± 1.6; p = 0.015), had lower Fagerström Test for Nicotine Dependence (FTND) scores (5.3 ± 2.3 versus 6.1 ± 1.8; p = 0.018, ANOVA controlling for age) and smoked fewer cigarettes on the weekend (27 ± 16 versus 38 ± 17; p = 0.001). African American teens reported similar duration of smoking (3.3 ± 1.4 versus 3.1 ± 1.5 years) and time elapsed between first cigarette ever smoked and daily smoking (0.7 ± 0.9 versus 0.6 ± 0.7 years). African American and non-African American teens had similar motivation to quit scores and frequency of reported health problems (e.g., asthma, psychiatric conditions). These data suggest that cessation treatment programs designed for African American youth should include lower Fagerstrom-defined levels, and possibly other criteria for tobacco dependence. These observations also highlight the importance of ethnocultural issues in treatment research programs. (*J Natl Med Assoc.* 2000;92:558–562.)

Key words: adolescents ◆ smoking cessation ◆ ethnicity

Tobacco use disproportionately affects African Americans.[1] Ethnoracial differences in both tobacco-related morbidity and treatment outcome for smoking cessation among adults have previously been reported.[2] Compared to whites, African American men and women have adult smoking prevalence rates of 32% and 22% versus 27% and 23%. African Americans suffer an increased prevalence of coronary heart disease, stroke and lung cancer, all of which have been linked to cigarette smoking.[1,3]

Several factors, including powerful targeted media influences, have been implicated in the recent increases in smoking prevalence[4,5] and its deleterious effects on the African American population.[6–8] These targeted messages have had a major under-

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mining effect on proactive public health announcements. To address some of these issues, the National Medical Association has issued a Consensus Report for Tobacco Control (National Medical Association Tobacco Consensus Panel; First Annual Colloquium on African American Health, McLean, VA, October, 1999).

Although the larger health community has focused on increasing the number of adult quit attempts,[9] there have been recent disproportionate increases in smoking prevalence among African American youth of 80% versus 32% for overall youth in the country.[1,10] Because adolescents underutilize physician offices and are more likely to be uninsured than any other age group, the impact of smoking on their health status remains to be addressed. It is important to note that African American youth utilize such visits even less than white and Hispanic adolescents.[11]

Thus, it is not far-fetched to predict that the currently-observed tobacco-related health disparities seen in African Americans will likely increase if proactive prevention and treatment programs are not implemented in the relevant communities. Within this context, the validity of treatment trial and research data will be contingent upon representative inclusion of African Americans in such research.

Despite polls indicating smoking teens' desire for cessation,[12,13] treatment opportunities have not kept pace with demand. This relative lack of treatment opportunities is related to systemic obstacles that might be more problematic for African American youth. For example, even the few open label trials that have been reported to date have not included many African American teens.[14,15] Herein, we report demographic data from the screening procedure of a treatment trial that aims to help adolescent smokers quit. The current study is being conducted at the Intramural Research Program of the National Institute on Drug Abuse (NIDA), National Institutes of Health (NIH) in Baltimore, MD.

METHODS

Participants in this study were teenage smokers who responded to advertisements for a teen smoking cessation program. Media ads were broadly directed at Baltimore-area teenage smokers who wanted to quit smoking. The treatment study protocol was approved by the NIDA Institutional Review Board. Advertisement occurred in multimedia forums, ranging from newspaper and radio advertisements to word of mouth using various school-related and other community channels. When participants called in to inquire about their eligibility to participate in the treatment research program, they underwent a 15 to 20-min structured telephone interview performed by a clinical social worker. Sociodemographic information (age, sex, self-reported ethnoracial affiliation), medical, psychiatric and medication history, smoking-related history, previous cessation attempts, and motivational level to quit were recorded onto intake forms. The FTND is a revision of the Fagerström Tolerance Questionnaire (FTQ) that omits two items of little utility: inhalation, and the use of high-nicotine brands of cigarettes; both are commonly used as paper and pencil measures of dependence among adult smoking populations.[16,17] The FTND is a self-administered six-item questionnaire that can be completed within two to three minutes; it yields a score between 0 and 10. There is no standard cutoff for the presence or absence of nicotine dependence; one suggested scoring system is: 1–2 = very low dependence; 3–4 = low dependence; 5 = medium dependence; 6–7 = high dependence; 8–10 = very high dependence.[18]

Data from participants who were ineligible for the smoking cessation program were unlinked prior to tabulation. Because subsequent analyses were performed on unlinked data, the study was approved with an exemption from review by the National Institutes of Health, Office of Human Subject Research (OHSR).

Data Analysis

Continuous variables were compared by univariate analysis of variance. Because there was a significant difference in age between African-American and non-African-American teens, age was included in all subsequent analyses as a covariate. Frequencies were compared using chi-square tests. Differences were considered significant at $p < 0.05$. Because of the exploratory nature of the study, trends ($p < 0.1$) are also noted. Data are presented as means ± SD or frequencies (%) unless otherwise indicated.

RESULTS

There was a significant age difference at treatment request with African American teen applicants

Table 1. Subject Characteristics (n = 115)

	African Americans (n = 31)	Non-African Americans (n = 84)	P value
Age (years)	16.4 ± 1.7	15.6 ± 1.6	0.015
Gender M/F (%)	9/22 (29/71)	28/56 (33/67)	ns

Table 2. Smoking Trajectory of African-American and Non-African American Adolescents Requesting Treatment

Parameter	African Americans	Non-African Americans	P value
Age first cigarette smoked (years)	13 ± 1.6	13 ± 1.4	ns
Age of daily smoking (years)	13.9 ± 2	12.9 ± 1.5	ns
Time between first cigarette smoked and daily smoking (years)	0.7 ± 0.9	0.6 ± 0.7	ns
Time between daily smoking and request of treatment (years)	2.5 ± 1.4	2.1 ± 1.3	ns
Motivation to quit score (maximum: 10)	8.2 ± 1.5	8.2 ± 1.5	ns
Years of smoking	3.3 ± 1.4	3.1 ± 1.5	ns

All differences are adjusted for age.

Table 3. Comparison of Smoking Charateristics of Study Subjects

Parameter	African Americans	Non-African Americans	P value
Number of cigarettes smoked on weekdays	73 ± 47	75 ± 37	ns
Number of cigarettes smoked on weekends	27.3 ± 16	38 ± 17	0.001
Number of cigarettes smoked per week	100 ± 60	113 ± 49	0.08
Cigarettes/day	14 ± 9	16.2 ± 7	0.08
Cigarettes/day (%)			0.07
0–10	45	24	
11–20	45	58	
21–30	7	12	
31+	3	6	
Tried to quit before (%)	90	92	ns
Number of quit attempts	2.7 ± 0.9	4 ± 0.5	ns
Longest duration of quit attempt (days)	29 ± 61	19 ± 52	ns
Previous NRT use (%)	14	15	ns

Continuous variables are adjusted for age.

Table 4. Fagerstrom Test for Nicotine Dependence in Teens Seeking Treatment (Responses to Individual Items and Total Score)

Parameter	African Americans	Non-African Americans	P value
Time to first cigarette in the morning (%)			ns
60+			
31–60	41	46	
6–30	24	28	
0–6 (min)	17	19	
	17	6	
Hate to give up the first cigarette in the morning (%)	60	74	ns
Smokes more in the morning (%)	64	64	ns
Smokes in forbidden places (%)	72	91	0.028
Smokes if ill (%)	72	84	ns
FTND total score	5.3 ± 0.5	6.1 ± 0.2	0.018

being older (Table 1). African American and non-African American adolescent smokers did not differ in their smoking trajectory characteristics (Table 2). Both groups reported similar motivation to quit scores.

African American teens smoked significantly fewer cigarettes on the week-end (Table 3). A trend towards fewer cigarettes smoked per day was also observed. African American teen smokers had lower FTND scores and significantly less African American teens reported smoking in forbidden places (Table 4).

Because the treatment involved controlled administration of nicotine replacement therapy products (patch and gum), smoking rates and FTND scores were used as inclusionary criteria for participation in the treatment trial.

The most common physical health problems reported were asthma and allergies. There was no difference in frequency of asthma between African American (13%) and non-African-American teens. Depression was the most commonly reported psychiatric problem (data not shown); no difference was observed between African American and non-African-American teens (Table 5). The overall frequency of reported health (medical and psychiatric) problems was similar.

Table 5. Frequency (%) of Health Problems in Study Subjects

	African Americans	Non-African Americans	P value
Health problems	32	39	ns
Psychiatric problems	19	26	ns
Physical problems	16	29	ns
Psychiatric medications	6.5	15.5	ns
Medications for physical problems	13	18	ns

DISCUSSION

This study depicts clinically relevant characteristics of African American teens requesting treatment for smoking cessation at an inner city outpatient research clinic. In this initial sample of teens requesting treatment, we found that African American teen smokers are significantly older. This has been described in earlier reports.[19] In addition, we found that African American youth showed lower FTND scores. Fagerstrom scores have been shown to correlate with cotinine (the main metabolite of nicotine) and therefore reflect certain kinetic aspects of nicotine dependence.[20] However, despite these differences in FTND scores, both groups (African American and non-African American teens) reported similar motivation scores for treatment; this suggests that differences in FTND scores might not result from a lesser dependent state, but might reflect differences in nicotine pharmacokinetics. This argument is supported by several publications that have reported ethnoracial (African American and caucasians) differences in nicotine/cotinine metabolism among adult smokers.[21–24] Although metabolic data are currently lacking for adolescent smokers, our observations from this sample of smoking adolescents suggest the possibility of similar ethnicity-related differences. Therefore, we propose that it is important to use diagnostic instruments that capture the relevant constructs of nicotine dependence among individuals from various age and ethnic groups.

Given the potential differences in the metabolic profile of nicotine among ethnic groups, we suggest that use of awareness-based, in addition to kinetically-driven measures of dependence might offer greater ethnic parity in the diagnosis of nicotine dependence. It is possible that multiple instruments might complement each other for a more comprehensive assessment of nicotine dependence. This consideration could have substantial recruitment impact for studies and treatment programs where such measures determine the eligibility to participate.

We were struck by the contrast in percentage of African American enrollment into the program (27%) versus the relative percentage of African American teenagers in the 15 to 19 years age group (81%) in Baltimore (according to 1998 estimates from the Census Bureau). Even after correcting for the national smoking prevalence rates among youth,[26] there remains an underrepresentation of African American teen applicants in our sample. These facts lead us to consider the reasons for such an occurrence. One consideration is the possibility that African American teens may not have felt empowered to involve their parents: participation in the trial would have required a parent or legal guardian's consent in addition to the teen's assent. The inference from our data is that this is unlikely because African American teens' parents were just as aware as non-African American teens' parents of their children's smoking status. Other barriers specific to African Americans' participation in research have previously been described. For example, it is suggested from several reports that issues linked to the infamous Tuskegee syphilis study and how its effects have impacted African American community views about research and health care have not been fully resolved.[27,28] Although the teens themselves might not have substantial first-hand awareness of previous controversies involving research with African Americans, their parents or other referring adult individuals might have discussed these issues with them. Overcoming those feelings and barriers requires sensitivity and the utilization of culture-specific channels to reach eligible participants. This need is highlighted by the potential public health problems that are augured by current smoking trends among adults, and now children. Bridging these secular barriers remains key to the process of both facilitating increased participation in relevant research and achieving parity in access to needed care for the eradication of health disparities. In that vein, the growing movement to enlarge the pool of scientists who are sensitive to the issues of health disparities is a welcome one.

CONCLUSION

Our data show significant differences in age, FTND scores, and differences in the number of cigarettes smoked between African American and white youth who sought to enter a smoking cessation program. Even if socioeconomic status might represent a confound of these results, our present observations still support intensifying the establishment of programs that will stimulate participation of African American youth in smoking prevention and cessation.

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