

POPULATIONS AT RISK

Smoking Cessation in a Homeless Population

There Is a Will, but Is There a Way?

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This cross-sectional study sought to determine the prevalence of smoking, readiness to quit, and preferences for smoking cessation treatments among a sample of 236 homeless adults attending 9 sites serving homeless persons (mean age 41.8 years; 73% male). Two thirds (69%) were current smokers, of whom 37% reported readiness to quit smoking within the next 6 months. In bivariate analyses, persons were significantly ($P < .05$) more likely to be ready to quit if they had tried to quit in the past and if they had social support to quit smoking. Nicotine replacement was the most commonly preferred assistance method (44%), and self-efficacy to quit (10-point scale) was significantly greater if assistance was available (7.3 vs 4.9; $P < .001$). The findings suggest an urgent need to develop and implement smoking cessation programs for homeless persons.

KEY WORDS: smoking; smoking cessation; homeless persons; health behavior.

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Smoking is the leading preventable cause of morbidity and mortality in the United States and one of the leading health indicators identified in Healthy People 2010.^{1,2} Persons who are homeless appear to be much more likely to smoke than the general population.^{3,4} The negative consequences of smoking may be especially high among the homeless population because of a higher incidence of chronic disease and a high prevalence of substance abuse, which can synergistically increase the risk for cancers of the head and neck.⁴⁻⁶

Quitting smoking can substantially reduce the risk of cancer, coronary heart disease, peripheral artery disease,

and stroke, and several effective treatments are available to assist with smoking cessation.⁷⁻⁹ In our experience, many homeless persons attending local health care clinics have requested smoking cessation assistance, but they could not afford to purchase nicotine replacement supplies and were not aware of smoking cessation programs in the community. There was little information in the literature to help guide the development of an appropriate smoking cessation program for the homeless population. We therefore sought to determine the prevalence of smoking, interest in smoking cessation, and preferences for smoking cessation treatment among a diverse sample of homeless adults. We also sought to determine how readiness to quit smoking might vary according to living situation, demographic factors, and current participation in a substance abuse treatment program.

METHODS

The study design was an anonymous cross-sectional questionnaire. The sample population consisted of individuals aged 18 or older who attended 1 of 9 sites providing medical care, social services, or temporary shelter services to homeless and underserved populations in the city of Pittsburgh. These included 4 emergency shelters (3 male, 1 female), 2 residential substance abuse treatment sites, a single-room-occupancy residence, and 2 local drop-in centers offering meals, social services, or free medical services. These settings represent approximately half of the available services for homeless persons in the area, and were selected to ensure at least 1 site from each general category of services. Study methods were approved by the University of Pittsburgh Institutional Review Board.

Study staff visited each site at least twice for 2 to 3 hours between November and December 1999. After a brief introduction of the study, all persons present were invited to complete the anonymous questionnaire. Each received an incentive worth approximately \$1; fewer than 3% of persons approached declined to complete the survey.

Measures

Questionnaire items addressed age, gender, race/ethnicity, and history of substance abuse treatment. A

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few subjects ($n = 37$) reported that they currently lived in a home or apartment that they owned or rented; these were excluded from further analysis. The remainder were classified as living on the street, in an emergency homeless shelter, with a friend or relative (doubled up), or in a transitional housing environment (single-room-occupancy or a residential drug and alcohol rehabilitation facility); all met Federal criteria for homelessness (Stewart B. McKinney Homeless Assistance Act of 1987, PL No. 100-77 [July 22, 1987], codified as 42 U.S.C. SS11301-11472).

Participants indicated whether they currently smoked, had quit smoking, or had never smoked. Nicotine dependence was assessed using the 6-item Fagerstrom Test of Nicotine Dependence¹⁰; those scoring ≥ 7 were categorized as nicotine dependent. Readiness to quit smoking was assessed using a 5-step ladder of options based on the stage of change model.¹¹ Specifically, participants indicated whether they: a) were not currently interested in quitting; b) were interested, but not within the next 6 months; c) were interested and wanted to quit in the next 6 months; d) had quit in the past; or, e) had never smoked. Those who wanted to quit within the next 6 months were classified as "ready to quit"; otherwise, they were "not ready to quit." Smokers who had quit in the past ($n = 24$) or who left the item blank ($n = 9$) were classified as "ready to quit" if they were "definitely" interested in a smoking cessation program, and as "not ready to quit" if they were "probably interested" or "not interested."

We assessed self-efficacy to quit smoking in 2 situations. First, participants were asked to rank from 1 (not at all sure) to 10 (very sure) how sure they were that they could quit smoking on their own; and then, how sure they were that they could quit smoking if they had assistance such as medications, patches, or counseling. Quit preferences were assessed by asking, "Which of the following do you think could best help you stop smoking? nicotine patch, nicotine gum, nicotine inhaler, individual counseling, group counseling, self-help materials, bupropion (Zyban) pills, quitting on own 'cold turkey,' or none of the above." No other specific descriptions of these products were provided. Barriers to smoking cessation were assessed by inquiring whether each of 5 potential barriers would be the hardest part about stopping smoking (craving cigarettes, being around other smokers, fear of weight gain, habit, and stress/mood swings). For both the quit preference and the barriers items, participants could choose more than 1 option. Finally, the presence or absence of social support was assessed by a true-false item, "No one would be supportive if I tried to stop smoking."

Statistical analyses were conducted using SPSS software (version 10.0; SPSS, Inc., Chicago, Ill). Descriptive analyses were performed to determine the prevalence of smoking and readiness to quit. Bivariate comparisons between persons ready to quit or not ready to quit were conducted using unpaired t test or χ^2 , depending on whether the variables were interval or nominal.

Significance values $\leq 5\%$ were considered statistically significant.

RESULTS

Two thirds (69%) of the 236 participants were current smokers (Table 1). Of these, 72% smoked 1 pack per day or less, 72% had tried to quit at least once, and 29% were nicotine dependent. Perceived barriers to smoking cessation were common, including craving cigarettes (50%), stress or mood swings (44%), being around others who smoke (42%), believing no one would support their smoking cessation attempt (26%), and fear of weight gain (20%).

Thirty-seven percent of current smokers indicated they were ready to quit smoking within the next 6 months. Persons were significantly more likely to be ready to quit if they had tried to quit in the past (43% vs 24%; $P = .027$), and if they had some social support to quit smoking (48% vs 12%; $P < .001$) (Table 2). They were somewhat less likely to be ready to quit if they were white (31% vs 43%) or currently in substance abuse treatment (29% vs 41%), although these results did not achieve statistical significance. Readiness to quit was not associated with gender, age, living situation, or nicotine dependence.

Among the 62 persons ready to quit smoking, self-efficacy to quit smoking with assistance was significantly greater than self-efficacy without assistance (7.3 vs 4.9; $P < .001$). Nicotine replacement alone or in combination was the most commonly preferred assistance among those ready to quit (42.2%), followed by counseling

Table 1. Characteristics of Study Participants (N = 236)

Mean age, y (SD)	41.8 (10.7)
Gender (%)	
Male	81
Female	19
Race/ethnicity (%)	
White	40
African American	54
Hispanic	3
Other*	3
Living situation (%)	
Street	20
Shelter	31
Transitional housing	46
Family/friends	3
Substance abuse treatment (%)	
Current	27
Past	34
Never	39
Smoking status (%)	
Current smokers	69
Quit smoking	16
Never smoked	15

* Other race includes 7 bi-racial and 1 Borinquen (Puerto Rican Indian).

Table 2. Factors Associated with Readiness to Stop Smoking Among Homeless Smokers (n = 186)

	Ready to Quit* (%)	P Value
Age, y		
<40	40	.48
≥40	35	
Gender		
Female	40	.79
Male	38	
Ethnicity		
White	31	.38
African American	44	
Other	40	
Living situation		
Street	38	.96
Transitional housing	38	
Emergency shelter	38	
Relative or friend	25	
Substance abuse treatment		
Current	29	.37
Past	40	
Never	41	
Nicotine dependent		
Yes	38	.93
No	38	
Quit attempt in past*		
Yes	43	.03
No	24	
Social support to quit*		
Someone	48	<.01
No one	12	

* Would like to stop smoking within next 6 months.

alone or in combination (24.6%) and bupropion alone or in combination (14.1%); only one third (31.6%) did not think any specific treatments could help them quit.

DISCUSSION

Our findings suggest that a substantial majority of homeless persons smoke, that a significant portion are ready to quit smoking within 6 months, and that they believe they can be more successful with assistance such as nicotine replacement. The data are consistent with other reports suggesting that homeless persons are nearly 3 times more likely to smoke than the general population, yet a similar proportion are ready to change their smoking behavior.^{2-4,12-14} Because of the high prevalence of smoking, smoking cessation interventions targeting homeless persons may have the potential for tremendous public health impact.

We are not aware of other studies that specifically examined quit rates or preferences for smoking cessation among homeless populations. In other low-income populations, persons interested in smoking cessation have achieved a 17% to 21% success rate of self-reported abstinence at 6 months,¹⁵⁻¹⁸ which is just slightly lower than success rates in the overall population.¹⁹ Nicotine

replacement therapy, including patches, gum and inhalers, is an effective smoking cessation tool in a variety of populations and settings, particularly when combined with some type of smoking cessation counseling.^{1,8,9,15,19} The higher self-efficacy to quit with assistance also suggests that offering treatment may lead to increased success rates.^{13,14}

Smokers in substance abuse treatment programs appear to be similarly ready to quit compared to those not in treatment programs,^{6,16,20,21} and smoking is a leading cause of death among former participants of addiction treatment programs.²² Yet, smoking cessation is often not recommended in these settings because of the widespread belief that it is too difficult to give up 2 addictions at the same time. However, at least 1 study has found a positive impact of smoking cessation on recovery from alcohol and other addictions.²³

Our study had several limitations. We measured self-reported intention to quit rather than actual behavior, and respondents may have been tempted to overestimate their interest in smoking cessation, although the anonymous nature of the survey should have allowed participants to provide responses without concern about socially responsible answers. Our sample was limited to 1 urban environment, and we did not directly recruit homeless persons from the street; thus, the attitudes and responses may be different among homeless in other cities or those who do not access support services. However, we were able to recruit from a large, representative variety of settings and had nearly 100% participation at each of these sites.

The findings demonstrate a clear need to develop and implement smoking cessation programs for homeless persons, and clinicians working with homeless populations should increase their efforts to emphasize the potential benefits of smoking cessation and offer assistance. Settings such as soup kitchens, shelters, substance abuse treatment settings, drop-in-centers, and clinics designated for free care may be ideal locations to target homeless persons who wish to quit. The homeless have the will to quit, but face several potential barriers including the cost of nicotine replacement, lack of organized counseling programs, and perceptions that smoking cessation may not be an appropriate priority for this population. Additional research is needed to determine the specific types of programs and settings in which cessation rates will be highest.

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