Published in final edited form as:

Am J Health Behav. 2011 September ; 35(5): 546–556.

Emergency Department-Initiated Tobacco Dependence Treatment

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Abstract

Objective—To examine the feasibility of a fax referral program increase enrollment in tobacco dependence treatment in emergency department (ED) patients.

Methods—The control group received quit advice and printed information; the intervention group also received a faxed referral that generated telephone contacts.

Results—Treatment enrollment was higher in the intervention group (13.5% vs 2.7%). Only the faxed referral was associated with treatment enrollment.

Conclusions—An ED intervention is feasible. Faxed referral resulted in a 5-fold increase in tobacco treatment enrollment. The ED may be an opportune setting to facilitate smoking-cessation behavior change among lower income, underserved patients.

Keywords

smoking; smoking cessation; emergency department; poverty; minority groups; public health

Smoking is the leading cause of preventable mortality and morbidity in the United States, causing over 443,000 premature deaths and more than 5 million years of life lost at a cost of over \$193 billion annually.^{1,2} More Americans are killed by smoking than by motor vehicle accidents, firearms, alcohol, illicit drug use, sexual behavior, and microbial and toxic agents combined.² Smoking causes numerous chronic illnesses, including cardiovascular disease, cancer, stroke, and chronic obstructive pulmonary disease.³ The prevalence of smoking in lower-income groups is over twice that of higher-income groups.⁴ Consequently, those with the fewest resources and the least access to health care in the United States suffer disproportionately from smoking-related diseases.⁵

Smoking cessation is the gold standard in cost-effective disease prevention strategies, producing immediate and major health benefits.^{3,6} Smoking cessation interventions are considerably more cost-effective than other common interventions and diagnostics tests,

such as treatment of mild to moderate hypertension and high cholesterol, mammography, Pap smears, and colon cancer screening.⁷ Cessation prior to age 50 reduces the risk of death from lung cancer by more than 90%.⁸

Health care providers have an extensive reach into the population of smokers. The vast majority of smokers (~70%) desire to quit, and over 50% will make at least one attempt to quit each year, but without professional assistance only 2-4% of those who attempt are successful one year later.⁹⁻¹² The Public Health Service (PHS) Clinical Practice Guideline emphasizes the integral role of health care providers in the delivery of cessation services.⁹ The PHS Guideline recommends the 5A's: (1) ASK every patient about tobacco use at every visit; (2) ADVISE every tobacco user to quit; (3) ASSESS the user's interest in quitting; (4) ASSIST interested tobacco users by setting a quit date and providing counseling and medication; and (5) ARRANGE for timely follow-up. Physician advice alone consistently results in small (~2.5%) increases in patient quit rates.¹³ Consistent implementation of the 5A's can produce quit rates approaching 16%.⁹ Intensive treatment, highly recommended by the PHS Guideline, results in higher quit rates.⁹

A joint statement of emergency medicine professional organizations recommends that emergency department (ED) health care providers routinely encourage patients to quit by engaging in a condensed 5A's-based intervention, which includes ASKING about the tobacco use status of all patients, ADVISING patients to quit, and REFERING them to treatment for tobacco dependence.¹⁴ The Institute of Medicine report, *Ending the Tobacco Problem: A Blueprint for the Nation*, specifically recommends ED-initiated smoking cessation interventions.¹⁵ The presentation of smokers to the ED appears to be a teachable moment. ED smokers are willing to discuss tobacco use and cessation.¹⁶ Moreover, ED-initiated smoking cessation interventions promote higher patient satisfaction.¹⁷ Still, most research studies that have demonstrated the effectiveness of brief interventions have been conducted in primary care settings.¹⁸ Questions remain about the effectiveness of these recommendations for the demanding ED setting. The few studies that investigated the initiation of smoking cessation in the ED reported equivocal results, likely due to differences in the intensity of the interventions provided, ED health care provider training, methodological issues, and outcome assessment and follow-up.¹⁹⁻²²

The ED may be a particularly opportune setting to routinely reach lower-income patients in the United States with tobacco-dependence treatment services. In the United States, these patients often lack a primary care provider and often utilize the ED as their usual source of care.²³ Although lower-income patients' desire to quit smoking is similar to that of individuals with higher incomes, they are less likely to quit, use an evidence-based strategy, or be offered professional assistance.²⁴⁻²⁷ An effective intervention in the ED has the potential to reach lower-income groups, improve their health, and contribute to a decrease in prominent health disparities.

The purpose of this study was to examine the effectiveness and feasibility of a brief intervention followed by a faxed referral to state-sponsored evidence-based treatment for tobacco dependence in smokers who presented for nonurgent care in the ED.

METHODS

Participants

Participants included English-speaking, adult ED patients who smoked at least one cigarette per day and consecutively presented to the ED for nonurgent care. Exclusion criteria included critical illness, severe pain, direct admission to labor and delivery, primary psychiatric diagnosis, inability to give informed consent, residence outside of referent state,

and exit without being seen by ED health care providers. For those who were eligible but declined to participate, demographic characteristics and reason for declining were recorded.

Setting

The study was conducted at an urban teaching hospital, in the ED. This ED has approximately 48,000 annual adult patient visits. Over half of these patients lack health insurance, and over half are nonwhite, most of whom are black. Nonurgent ED patients were treated by an advanced practice nurse, under medical direction. At the time of the study, the nonurgent subunit was open from 9 AM to 9 PM 13 days per month.

Design

Prior to conducting the study, the study protocol was approved by the institutional review board. All participants gave informed consent. The study used a randomized, controlled, single-blinded design. The ED advanced practice nurse was blinded to the participants' group assignment.

Procedure

The ED advanced practice nurse underwent training in the delivery of PHS Guideline-based brief interventions prior to the study. During the nonurgent ED unit hours of operation, all nonurgent patients who presented to the ED were referred to and seen in the nonurgent ED. In the nonurgent ED, the advanced practice nurse assessed the smoking status of all patients by asking the question "Do you smoke tobacco?" To all smokers, the advanced practice nurse provided strong and personalized advice to quit.

Based on the advanced practice nurse's prior determination of smoking status, a research assistant assessed all smokers for eligibility to participate in the study. Study participants first completed an initial structured assessment interview and received self-help materials, brochures describing the free tobacco-dependence treatment services, and contact information for the cessation programs. Participants were then randomly assigned to either the intervention or control groups according to a predetermined, computer-generated randomization schedule. Study group assignment was concealed within numbered, opaque, sealed envelopes.

Participants in the intervention group were asked if they were willing to have their contact information faxed to the cessation services, with the understanding that the faxed referral would generate a number of telephone calls from the treatment services. Once the fax was received, the referral service attempted to contact the participants by telephone, making up to 6 attempts at various times of the day over a 7-day period, to discuss cessation options, provide motivational counseling, and enroll them in a tobacco-dependence treatment program. Seven days after the initial contact, the referral service again attempted to make a follow-up telephone contact and, if needed, provided further encouragement to enroll in treatment. Cessation programs included both telephone-based and in-person treatment. In both modalities, specially trained tobacco treatment specialists provided free, intensive, evidence-based, cognitive-behavioral therapy during 6 highly interactive, individualized, planned sessions. Nicotine patches, as needed, were provided free of charge.

Three months post-ED visit, an outcome assessment interviewer, blinded to condition, made up to 6 attempts to contact participants. As compensation for their time, study participants who completed the 3-month outcome assessment interview received a \$25 grocery gift card, and those who were unavailable for the outcome assessment interview received a \$5 card.

Measures

The initial intake assessment collected standard demographic and clinical information (Table 1).²⁸⁻³⁰ Process measures included consent to the faxed referral (yes/no) and ability to obtain outcome assessment information 3 months after the ED visit (contacted/not contacted). Outcome measures included *intervention time*, defined as the minutes required for research assistant to complete the fax referral form and fax it to the treatment services; and *treatment enrollment*, defined as documentation in the tobacco-dependence treatment services' medical records of completing an intake and attending at least one treatment session. Although premature because many participants would not have had time to complete treatment, 7-day point prevalence abstinence rates were assessed 3 months after the initial ED visit. A specially trained outcome assessment interviewer contacted the participants by telephone and asked, "How many cigarettes are you smoking on a usual day?" and if the answer was 0, then asked if the participant had smoked cigarettes in the past 7 days (Yes/No). Participants were considered abstinent if they answered, "Zero" and "No," respectively. Seven-day point prevalence is considered a valid and reliable method for assessing abstinence and appropriate for this type of program.^{31,32}

Definitions of Independent Variables in the Univariate Analysis

Insurance status was defined as insurance (Medicaid, Medicare, or private) or no insurance. The stage of change was based on the following question: "When do you seriously plan to stop using tobacco?": (1) within the next 30 days (Preparation); (2) within the next 6 months (Contemplation); (3) plan on stopping but NOT in the next 6 months or have no plans to stop smoking (Precontemplation). Dependence level was assessed by the Fagerstrom test for nicotine dependence, with an established scale of 0 to 10, for the following factors: (1) number of cigarettes per day, (2) if smoke more during the first hours after waking than during the rest of the day, (3) number of minutes to first cigarette of the day after waking, (4) situation in which the participant would most hate to give up smoking, (5) difficulty in not smoking in places where it is not allowed, and (6) smoking even if so sick that it requires being in bed most of the day. Motivation was assessed by the question "How much do you want to quit using tobacco?" Self-efficacy was assessed by the question "How confident are you that you can quit using tobacco and stay quit for good?" Motivation and self-efficacy levels were measured on a discrete analog scale of 0 to 10, with 0 = not at all and 10 = most possible. Stress was measured by the Perceived Stress Scale-4, with a score of 0 to 16, based on a Likert scale of responses to the following questions: (1) "How often have you felt you were unable to control important things in your life?" (2) "How often have you felt confident about your ability to handle your personal problems?" (3) "How often have you felt that things were going your way?" (4) "How often have you felt difficulties were piling up so high that you could not overcome them?" Menthol cigarette use was determined by the questions "Do you use menthol tobacco products?" (yes/no) and "What are the brand names of the tobacco products you use?" Quit attempt in the past year was assessed with the question "When was your last serious attempt to stop smoking?" Readiness to set a quit date was assessed by the question "Are you ready to set a quit date?" (yes/no). For clinical relevance, age in years was transformed in to 10-year increments.

Statistical Analyses

The investigators used SPSSTM, version 16.0.³³ Descriptive analyses were conducted on the demographic and clinical characteristics. It was estimated that a sample size of 208 (104 in each study group) would be needed for 82% power to detect an absolute difference in enrollment in treatment services of 10%, between study groups (20% in the intervention group and 10% in the control group). One-way analysis of variance and chi-square tests compared demographic and clinical characteristics and treatment attendance between the intervention and control groups, as well as differences in demographic and clinical

characteristics between responders and nonresponders at 3 months post-ED visit ($\alpha = .05$, 2-sided tests).

A multivariate logistic regression using a forward purposeful variable selection strategy and adjusted for demographic and clinical characteristics was used to predict enrollment in treatment.³⁴ Univariate regressions were used to test the effect size of each independent variable. Variables with P values less than or equal to 0.25 in the univariate analyses were included in the multivariate logistic regression.

Missing Data

In community-based tobacco-dependence treatment studies, a significant proportion of participants often become unavailable for outcome assessment, resulting in missing data. Traditional methods for handling missing data are to (1) classify participants lost-to-follow-up as if they never entered treatment (complete-case analysis: CCA) or (2) classify participants lost-to-follow-up as smoking (intention-to-treat analysis: ITT).³⁵ The CCA approach places all participants who were successfully contacted for outcome assessment in the denominator. The ITT approach places 100% of enrolled participants in the denominator. Together, these methods can be used to approximate treatment response, with ITT outcomes as a lower boundary and CCA outcomes an upper boundary.³⁵

RESULTS

Descriptive Analyses

Among patients who presented to the ED for nonurgent care, the prevalence of daily cigarette smokers was 53.2% (n=294); 81.5% (n=221) of the patients who were eligible for the study agreed to participate. The study participants were predominantly lower income; 56.9% reported annual household incomes less than \$15,000, and 79.1% were without health insurance. No significant demographic or clinical differences were found between the intervention and control groups. Demographic and clinical characteristics of the participants are presented in Table 1. Many participants appeared interested in quitting, with 37.6% in Preparation and a mean level of motivation 8.1.

Twenty-three smokers met one of the exclusion criteria, 44 declined to enroll in the study, and 6 were missed and not offered enrollment. Among the 44 who declined to enroll the study, the reason for declining was obtained in 41, as follows: (1) lack of interest in quitting (n=22 or 53.7%), (2) preference for attempting to quit without the assistance (n= 10 or 24.4%), (3) no telephone (n=6 or 14.6%), and (4) lack or a desire to participate in a research study (n=3 or 7.3%). Those who declined participation were not significantly different from participants, with regard to demographics. No significant differences in age, gender, race/ethnicity, and insurance status were found between responders and nonresponders.

Process Measures

Blinding was successful because study group assignment was made after the ED advanced practice nurse delivered the Ask and Advise steps. One hundred percent of the intervention group consented to a faxed referral. Three-month follow-up interviews were obtained from 39.5% of the study participants. There were no significant differences in any of the demographic or clinical variables listed in Table 1 between those who were contacted and those whom we were unable to contact for a follow-up interview.

Outcome Measures

The mean intervention time in the ED required for the research assistant to complete the referral form and fax it to the treatment services was 3.3 (+ / - .85) minutes. Significantly

more participants in the intervention group enrolled in treatment for tobacco dependence. In the intervention group, 13.5%, (n=15/111) attended treatment sessions, compared to 2.7% (n=3/110) in the control group (χ^2 (1, n=221) = 8.6, $P < .01$). (Table 2) Seventeen of the 18 who attended treatment sessions opted to do so via the telephone-based treatment (quitline); only one opted for in-person treatment.

Among the independent variables tested in a univariate logistic regression, treatment group, work status, and age produced a significant effect and were included in the multivariate logistic regression. (Table 3) However, in the multivariate regression, only the treatment group was associated with a significant increase in attendance in tobacco-dependence treatment sessions (OR = 4.9; 95% CI: 1.3, 17.6). Participants who received a faxed referral were 5 times more likely to enroll in treatment for tobacco dependence (Table 4). None of the independent variables that were initially excluded from the multivariate model were statistically significant when retested in the multivariate regression with the significant independent variables.

The study protocol was for a follow-up contact at 3 months after the participants' presentation to the ED; however, some participants were still enrolled in treatment, and none had yet completed it. Based on the available data, there were no differences in the abstinence rates between the study groups at 3 months after the initial ED visit. The intervention group demonstrated a 3-month abstinence rate of 12.5% (5/40) using CCA and 4.5% (5/111) using ITT. The control group demonstrated an abstinence rate of 17.0% (8/47) using CCA and 7.3% (8/110) using ITT. There were no important adverse events or side effects in either study group.

DISCUSSION

The purpose of this pilot study was to test the feasibility and effectiveness of a brief intervention followed by a faxed referral to treatment for tobacco dependence. This study provides evidence that implementing the Ask, Advise, and Refer recommendations of the joint statement of professional emergency medicine organizations is feasible and effective. The advance practice nurse Asked about and documented smoking status in all patients and Advised all smokers to quit. All participants in the intervention group accepted the faxed referral to tobacco-dependence treatment services. The time for the research assistant to complete and fax the referral form to the treatment services was brief, just over 3 minutes. A faxed referral was 5 times more likely to link patients to treatment than was handing them information and brochures.

Four previously published clinical trials examined ED-initiated smoking cessation interventions for adults.¹⁹⁻²² In the study by Richman et al, physicians delivered brief advice to quit and written and oral information about a fee-for-service smoking cessation program that offered in-person treatment sessions.¹⁹ None (0%) of the intervention group contacted or attended the smoking cessation program. In contrast, our study sought to link smokers to free smoking cessation services, with broader access to telephone-based treatment, and the intervention group received a proactive fax referral service.

Schiebel et al also delivered a brief intervention that consisted of a faxed referral to the state-sponsored telephone-based treatment program.²⁰ Half (50%; n = 10/20) of the intervention group enrolled in the telephone-based treatment program. The intervention group demonstrated a significant increase in abstinence rates 6 months after the ED visit. Although their results are encouraging, the authors admit that the convenience sample of participants and data collection methods may have allowed for sample biases. Moreover, the

enrollment rate was considerably lower, relative to the number of patients who expressed interest in quitting (39/212), making the sample size quite small (n=39).

The Chest Pain Smoking Study demonstrated that motivational counseling in the ED, in combination with nicotine replacement therapy and 2 brief follow-up telephone counseling sessions, was more effective than the standard of care in increasing short-term, but not 6-month, abstinence rates.²¹ Throughout the 6-month study period, abstinence rates were higher in both the intervention and control groups compared to those of our study. The most likely explanation is that patients with chest pain more directly attribute their ED presentation to smoking and, thereby, have a heightened motivation to quit. Nevertheless, as with tobacco dependence interventions initiated in hospitalized patients, more intensive, sustained follow-up treatment appears to be important for ED-initiated efforts.³⁶

Boudreaux et al conducted a feasibility study of 3 ED-initiated tobacco dependence interventions, including (1) motivational counseling in the ED, with follow-up telephone contacts, (2) faxed referral for treatment via a quitline, and (3) printed information and a referral for tobacco dependence treatment at a hospital-based clinic.²² Their study population appeared to differ considerably from that of our study. Among the patients who presented to the ED and were eligible to participate, the prevalence of smoking was lower, and the proportion with health care insurance was markedly higher. Similar to our study, however, follow-up was difficult, but the interventions were feasible and well integrated into the flow of ED care.

ED-initiated, brief smoking-cessation interventions could have a broad reach into the ED population. The prevalence smoking in our sample was quite high (53.2%), more than double that of the United States, yet, consistent with some other urban EDs.^{37,38} This finding supports that the ED is underused for initiating smoking cessation and linking patients to treatment.

Study Limitations and Strengths

Several limitations should be considered when interpreting the results. This pilot study examined feasibility and the effectiveness of making a referral, not abstinence rates. Insufficient resources were available for a sample size large enough to detect a difference in abstinence rates at 3 months post-ED visit or to follow patients longer. This time frame was too short for many of the study participants to enter and complete treatment. Furthermore, the faxed referral was made to a program that provided evidence-based treatment, the effectiveness of which is well established across diverse populations.^{9,39} The abstinence outcomes must be considered with these caveats in mind. Despite extensive efforts, the study participants were difficult to reach for follow-up. Similarly, in a study of lower income, HIV-positive smokers, over 75% either moved or their telephone service became disconnected over one year.⁴⁰ It is important to note that our primary outcome, enrollment in tobacco dependence treatment, was collected by objective medical record review of the treatment program, rather than by patient self-report. Smoking status was self-reported by the participants in our study. Self-reported smoking status, however, compares favorably with biochemical measures.⁴¹ The external validity of our study results may be limited to nonurgent ED patients. Nevertheless, Bock et al demonstrated that implementation of a smoking cessation intervention for patients who presented to the ED with acute chest pain was feasible.²¹ We did not collect data concerning the participants' presenting illness. Therefore, we were unable to include it in the predictive analysis. Patients who presented to the ED for chest pain or an acute respiratory illness, however, were classified as urgent, rather than nonurgent, and were not referred to the nonurgent unit where we conducted the study. Study participants may have been more likely to be motivated to quit than were the few participants who declined. However, smokers were recruited in an opportunistic

manner, without a requirement that they be willing to quit, and the enrollment rate (81.5%) was high. Interpretation of the results should not be hindered by questions concerning selection bias.

The study results have high external validity for urban, academic health science centers that care for patients who rely on the ED for nonurgent care. Along with the high enrollment rate of smokers who presented to the ED, the feasibility of implementing the brief Ask, Advise, and Refer steps and the widespread availability of evidence-based treatment via quitlines further enhance the external validity. Moreover, the single-blinded, randomized, controlled design enhances the validity of the results.

CONCLUSIONS

Given the high prevalence of smoking among ED patients, their willingness to discuss cessation, the efficacy of brief interventions, and the accessibility of fax-to-quit services and quit-lines, helping smokers quit should be included as part of every ED nonurgent visit. In lower-income populations who are less likely to use evidenced-based treatments and obtain professional assistance, their presentation to the ED is a unique opportunity to implement the recommendations of the joint statement of emergency medicine professional organizations, which include Asking every patient about tobacco use status, Advising smokers to quit, and Referring smokers to tobacco-dependence treatment services. There are questions as to the most effective specific strategies for carrying out these recommendations. This study suggests that a faxed referral is feasible and an effective strategy for referring patients to treatment. This intervention could have a broad reach in to the ED population and a high impact on smoking-cessation behavior change, resulting in lowered mortality and morbidity. Future studies that extend the results of this pilot study are needed. These studies should consider long-term abstinence outcomes and inclusion of more acutely ill patients.

Acknowledgments

Tailored Biobehavioral Interventions Research Center, College of Nursing, University of Arkansas for Medical Sciences, National Institute of Nursing Research P-20 grant.

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Table 1Descriptive Characteristics of Participants^a

Factor or Covariate (n=221)	Percentage	Mean (SD)	SE	Range
Sex				
Male	62.4			
Female	37.6			
Race / Ethnicity				
White	47.1			
Black	50.7			
Other	2.2			
Work Status				
Employed	58.6			
Unemployed	41.4			
Household Income				
< \$15,000 per year	57.1			
\$15,000 per year	42.9			
Health Insurance				
No health insurance	77.7			
Medicaid, Medicare, or insurance	22.3			
Type of Cigarettes				
Menthol	57.5			
Nonmenthol	42.5			
Time Since Last Quit Attempt				
Within last year	35.5			
Greater than one year or never	64.5			
Ready to Set Quit Date				
Yes	58.7			
No	41.3			
Stage of Change				
Preparation	37.5			
Contemplation	28.5			
Precontemplation	33.9			
Age (years)		35.7 (11.3)	.76	19-68
Education		11.9 (1.5)	.10	7-16
Cigarettes Per Day		15.8 (10.3)	.69	1-60
Age Started Smoking (years)		17.0 (5.3)	.36	6-41
Fagerstrom Test for Nicotine Dependence		4.0 (2.4)	.16	0-9
Motivation Level		8.1 (2.3)	.15	0-10
Self-efficacy Level		6.7 (3.0)	.20	0-10
Perceived Stress Scale-4		8.8 (2.0)	.14	1-16

Notes.

^aNo significant differences were found between the intervention and control groups for any of the variables in Table 1.

Table 2

Referrals, Follow-up, and Attended Treatment Sessions

	Intervention % (n)	Control % (n)
Accepted Faxed Referral for Cessation Services		
Yes	100 (111)	
No	0 (0)	N/A
Referral service able to contact		
Yes	52.3 (58)	
No	47.7 (53)	N/A
Of those contacted, accepted referral for treatment		
Yes	79.3 (46)	
No	20.7 (12)	N/A
Attended Treatment^a		
Yes	13.5 (15)	2.7 (3)
No	86.5 (96)	97.3 (107)
Contacted 3 Months Post ED Visit		
Yes	36 (40)	41.8 (46)
No	64 (71)	58.2 (64)

Notes

^a χ^2 (1, n=221) = 8.6, P<.01

Table 3

Univariate Regressions: Treatment Enrollment for Tobacco Dependence

(n=221)	B	S.E.	Wald	P	Crude Odds Ratio (95 % CI)
Treatment Group					
Control					1 (Referent)
Intervention	1.72	.65	7.03	<.01	5.6 (1.6, 19.8)
Age (per 10 year increase)	.5	.21	5.73	.02	1.6 (1.1, 2.5)
Sex					
Female					1 (Referent)
Male	-.06	.51	.02	.90	.94 (.35, 2.5)
Race					
White					1 (Referent)
Black	-.32	.5	.43	.51	.72 (.27, 1.9)
Education (years)	-.26	.16	2.5	.11	.77 (.56, 1.1)
Work Status					
Employed					1 (Referent)
Unemployed	-1.1	.52	4.8	.03	.32 (.12, .89)
Household Income					
\$15,000					1 (Referent)
> \$15,000	-.44	.52	.72	.40	.64 (.23, 1.8)
Health Insurance					
No					1 (Referent)
Yes	-.39	.65	.35	.55	.68 (.19, 2.4)
Menthol Cigarettes					
No					1 (Referent)
Yes	-.09	.50	.03	.86	.92 (.35, 2.4)
Quit Attempt in Last Year					
No					1 (Referent)
Yes	.66	.49	1.8	.18	1.9 (.73, 5.1)
Ready to Set Quit Date					
No					1 (Referent)
Yes	-.66	.55	1.4	.23	.52 (.18, 1.5)

(n=221)	B	S.E.	Wald	P	Crude Odds Ratio (95 % CI)
Stage of Change^a					
Contemplation or Precontemplation					1 (Referent)
Preparation	-.31	.55	.33	.57	.73 (.25, 2.1)
Cigarettes Per Day	-.02	.03	.61	.44	.98 (.93, 1.0)
Age Started (years)	-.05	.05	.90	.34	.95 (.85, 1.1)
Dependence Level^b	.05	.11	.27	.60	1.1 (.86, 1.3)
Motivation Level^a	.11	.12	.74	.39	1.1 (.87, 1.4)
Self-efficacy Level^a	-.03	.08	.09	.76	.98 (.83, 1.1)
Stress^c	.07	.12	.3	.59	1.1 (.84, 1.4)

Notes.

^aDiscrete analog scale of 0 to 10, with 0 = not at all; 10 = most possible

^bFagerstrom Test for Nicotine Dependence

^cPerceived Stress Scale-4

Table 4

Multivariate Regression: Treatment Enrollment for Tobacco Dependence

(n=221)	B	S.E.	Wald	P	Crude Odds Ratio (95 % CI)
Treatment Group					
Intervention	1.6	.66	5.8	.02	4.9 (1.3, 17.6)
Control					1 (Referent)
Age (per 10-year increase)	0.4	.02	2.8	.09	1.4 (.94, 2.2)
Work Status					
Unemployed	.79	.56	2.0	.16	2.2 (.74, 6.6)
Employed					1 (Referent)