



Short communication

Adolescent smoking experimentation as a predictor of daily cigarette smoking

James D. Sargent^{a,*}, Joy Gabrielli^b, Alan Budney^c, Samir Soneji^a, Thomas A. Wills^d^a C Everett Koop Institute, Norris Cotton Cancer Center, Geisel School of Medicine at Dartmouth, United States^b Department of Data Science, Geisel School of Medicine at Dartmouth, United States^c Center for Technology and Behavioral Health, Geisel School of Medicine at Dartmouth, United States^d Cancer Prevention in the Pacific Program, University of Hawaii Cancer Center, United States

ARTICLE INFO

Keywords:

Adolescent
Smoking
Tobacco
Cigarette
Initiation
Longitudinal

ABSTRACT

Objective: The utility of studying substance use during early adolescence depends on how well indices of lower-level experimentation predict the development of substance use problems. We examined associations between experimental cigarette use at T1, recanting of use 8 months later (T2), and daily smoking at 2 years (T4).

Methods: Longitudinal telephone survey of 6522 US youth aged 10–14, examining lifetime cigarette smoking (none, just puffing, 1–19, 20–100, > 100) and recanting (i.e., reporting lifetime use at T1, denying ever using at T2) as predictors of T4 daily smoking using multivariable logistic regression. Covariates included socio-demographics, friend/family smoking, school performance, and personality characteristics.

Results: The sample was 51% male, 18% Black, 17% Hispanic, with 70% retained at T2. At T1, 407 (8.9%) adolescents reported some smoking, of whom 85 (20.9%) recanted at T2. At T4, 970 reported any smoking, of whom 88 (9.1%) were daily smokers. Any T1 experimentation identified two-thirds of T4 daily smokers (sensitivity = 66.7%) with a false positive rate of 7.8%. T1 lifetime smoking categories were associated with the following adjusted odds ratios for T4 daily smoking (vs. never smokers): 2.7 for recanters (95% confidence interval 0.82, 8.5), 3.5 for few puffs (1.7, 7.0), 9.6 for 1–19 cigarettes (4.1, 22.3), 3.8 for 20–100 cigarettes (1.0, 14.3), and 30.1 for > 100 cigarettes (8.1, 111).

Conclusions: In this sample experimentation with cigarettes predicted future daily smoking with high utility. The findings provide a rationale for monitoring and reporting any experimentation cigarettes as a tobacco surveillance outcome.

1. Introduction

Cigarette smoking is one of the most addictive of behaviors; any experience with smoking is a strong predictor of who will become an established smoker (Choi et al., 1997; Doubeni et al., 2010). Daily smoking is one of the most accepted indices of being an established smoker; longitudinal studies have consistently demonstrated that adolescent daily smokers (Saddleson et al., 2016) are highly likely to sustain smoking through adulthood—making daily smoking a clear adolescent outcome we wish to both predict and prevent.

Predictive studies of smoking have primarily focused on higher levels of early smoking (e.g., smoking 50–100 or > 100 cigarettes) as predictors of outcomes (Choi et al., 2001). Recently, some behavioral scientists have cast doubt on the validity of studying outcomes like trying cigarettes (Hajek and Bauld, 2015), arguing that most triers do not go on to daily addicted smoking. The primary issue remains in how

well lower levels of experimentation predict eventual daily cigarette smoking.

The fact that anywhere between 10–30% of youths who report trying smoking at will deny ever trying at follow up (Fendrich and Rosenbaum, 2003; Percy et al., 2005; Siddiqui et al., 1999; Simon et al., 1996; Stanton et al., 2007; Stueve and O'Donnell, 2000)—termed recanting—is another underemphasized aspect of early experimentation. Recanting most often occurs at the following survey (Fendrich and Rosenbaum, 2003). On the face of it, recanting would seem to undercut the value of self-report of early experimentation as a predictor of future daily smoking; yet, the predictive validity of starting smoking then subsequently recanting on future use has not been tested.

This study examines a telephone-based sample of US youths who were surveyed in 2003 (when cigarettes were the primary tobacco product used by youth), then again 8 months later to evaluate recanting of any smoking, and again at 2 years after baseline to evaluate their

* Corresponding author at: Rubin 8, Norris Cotton Cancer Center, Geisel School of Medicine at Dartmouth, Lebanon, NH 03756, United States.
E-mail address: james.d.sargent@dartmouth.edu (J.D. Sargent).

level of current (past 30-day) tobacco use. The goal is to empirically assess the performance of early experimentation in predicting future daily smoking.

2. Materials and methods

2.1. Participants

A detailed description of the recruitment methods for study participants was published previously (Sargent et al., 2005). Between June and October 2003, we conducted a random-digit-dial telephone survey of 6522 US adolescents aged 10–14 years. The institutional review board at Dartmouth College approved all aspects of the study. The completion rate for the survey at baseline was 66% and the response rate was 32%.

2.2. Procedures

After baseline, three follow-up surveys were conducted at 8-month intervals; this study uses responses from T2 to assess recanting and responses from T4 (24 months after baseline) to assess current smoking status. Interviewers were trained to administer the survey in English or Spanish, and participants indicated their answers to sensitive questions by pressing numbers on the telephone.

2.3. Measures

2.3.1. Current daily cigarette smoking at T4 (Dependent variable)

At T4, current daily smoking was ascertained of all respondents who indicated ever smoking through the following question, “During the past 30 days, on how many days did you smoke cigarettes? Your choices are none, 1–10 days, 11–29 days, or every day.”

2.3.2. Lifetime cigarette smoking at T1 and recanting at T2 (Independent variable)

At each survey, ever smoking was ascertained through the question, “Have you ever tried smoking, even just a puff?” (Yes/No response). Among ever smokers, lifetime smoking was ascertained at each wave through the question, “How many cigarettes have you smoked in your life? Your choices are just a few puffs, 1–19 cigarettes, 20–100 cigarettes or more than 100 cigarettes.” Recanters were defined as respondents who indicated that they had ever smoked at T1, and then at T2 indicated that they had never smoked.

2.3.3. Covariates

Experimentation with smoking could be a marker for confounding influences – other risk factors that are correlated with early experimentation and also increase risk for established smoking. To assess socioeconomic status, we used parent reports on their education and household income to create a standardized variable (mean 0.00, std dev 0.79, Cronbach’s alpha = 0.68, full baseline sample). Personality variables included sensation seeking (e.g., “I like to do scary things”; “I like to do dangerous things”, 4 items [Cronbach’s alpha = 0.59] (Sargent et al., 2010)), rebelliousness (e.g., “I do things my parents wouldn’t want me to”, “I argue a lot with other kids”, 7 items, alpha = 0.73 (Sargent et al., 2001)), and self-esteem (e.g., “I like myself the way I am”, “I am happy with how I look”, 8 items, alpha = 0.74 (Sargent et al., 2001)). Any smoking by friends, siblings, or either parent was also assessed. School performance was assessed through the question, “How would you describe your grades in school?” Also assessed were maternal parenting responsiveness (e.g., “She listens to what I have to say”, “She makes me feel better when I’m upset”, 4 items, alpha = 0.77) and maternal rule making (e.g., “She has rules that I must follow”, “She makes sure I go to bed on time”, 4 items, alpha = 0.60) (Jackson et al., 1994; Jackson et al., 1998; Sargent et al., 2001).

2.4. Statistical analyses

We examined the relation between study variables and sample attrition or lifetime smoking using chi square tests for dichotomous and ordinal variables, and linear regression for continuous variables. Logistic regression was used to examine sensitivity and specificity of lifetime smoking at T1 as a predictor of daily smoking at T4 using the “lsens” command in Stata 14.0. Sensitivity is the proportion of daily smokers at T4 identified by any smoking at T1; specificity is the proportion of those who are not daily smokers at T4 identified by no smoking at T1. Multivariable logistic regression was used to examine the independent relation between level of lifetime smoking at T1 and daily smoking at T4, controlling for T1 covariates. Ordinal and categorical variables were modeled using dummy variable analysis and continuous variables were entered such that the odds ratio reflected a 1-point increase in the variable. In a sensitivity analysis, the multivariable model was rerun as an ordinal logistic regression to test how well lifetime smoking at T1 predicted higher frequency of current smoking at T4.

3. Results

3.1. Sample of participants and their smoking status at T1 and T4

Of the baseline sample, 70.1% were retained in the study 2 years later. Loss to follow up was significantly higher among older and lower-SES adolescents, minorities, those with friends or family that smoked, who smoked themselves, had poorer school performance, had higher sensation seeking scores, and among those with lower scores for parental rule making.

The majority of the baseline sample (91.1%) were never smokers; more than half of triers (4.7% of the total) had only puffed on a cigarette and only 0.4% had smoked more than 100 cigarettes. At T2 follow up, 85 of T1 lifetime smokers (20.9%) indicated they had never smoked cigarettes, and these were labeled as recanters; their distribution on T1 lifetime smoking was just a few puffs 88.2%, 1–19 cigarettes 9.4%, 20–100 cigarettes 2.4% and > 100 cigarettes 0%. At the T4 follow up, there were 970 ever smokers, of whom 314 (34.2%) were current smokers. Among current smokers, 178 (56.7%) had smoked 1–10 days, 48 (15.3%) had smoked 11–29 days, and 88 (28.0%) had smoked every day in the past month.

Compared to never-smokers, all categories of lifetime smoking at T1 were associated with all categories of current smoking at T4. For example, compared to never smokers, for whom 2.9% went on to smoke 1–10 days of the past 30 at T4, percentages for smoking 1–10 days were 14.1% for recanters, 16.0% for puffers, 10.1% for those who had smoked 1–19 cigarettes, 13.6% for 20–100 cigarettes, and 5.6% for > 100 cigarettes. All covariates except gender were associated with lifetime smoking at T1.

3.2. Lifetime smoking as a predictor of cigarette smoking at follow-up

Fig. 1 shows results for lifetime smoking status at baseline as a predictor of daily smoking 2 years later. All categories of smoking behavior were strongly predictive of daily smoking at follow up, regardless of whether the respondent subsequently recanted after smoking at T1. Among never smokers at T1, only 29 (0.7%) were daily smokers at T4, whereas daily smoking prevalence was 4.7%, 8.9%, 26.1%, 22.7%, and 66.7% for recanters, and lifetime categories of puffer, 1–19, 20–100, > 100 cigarettes respectively. Any lifetime smoking at T1, regardless of recanting, correctly identified two-thirds of future daily smokers (sensitivity 66.7%) and had a false positive rate of only 7.8% (or a specificity of 92.2%).

As shown in Table 1, compared with T1 never smokers, after adjusting for covariates, higher levels of T1 lifetime smoking were associated with the following AORs for daily smoking (parsimonius

Download English Version:

<https://daneshyari.com/en/article/5120093>

Download Persian Version:

<https://daneshyari.com/article/5120093>

[Daneshyari.com](https://daneshyari.com)