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Original Investigation

Who conceals their smoking status from their health care provider?

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Abstract

Introduction: The decline in the social acceptability of tobacco use has the potential consequence that smokers may conceal their smoking from health care providers.

Methods: To assess the frequency and correlates of concealing one's smoking status from a health care provider, we analyzed data from the New York Social Environment Study, a cross-sectional random-digit–dialed telephone survey of 4,000 adult New York City residents surveyed between June and December 2005 (cooperation rate = 54%). A total of 835 current smokers were asked if they had ever kept their smoking status a secret from a doctor or another health care provider. Multiple items assessed the social unacceptability of smoking. Other potential correlates of smoking status nondisclosure were demographics, health status, frequency of tobacco use, and dependence.

Results: Some 8% of respondents ($N = 63$) reported ever keeping their smoking status a secret from a health provider. Nondisclosure of smoking status was more common among respondents who perceived high compared with low levels of smoker-related stigma (perceptions that they were devalued because they smoke; odds ratio [OR] = 2.83, 95% CI = 1.14–7.01) and among respondents who reported that smoking was not allowed in their home ($OR = 2.04$, 95% CI = 1.01–4.11) in a multiple logistic regression analysis that adjusted for demographics, health status, frequency of tobacco use, and dependence. No other factors were associated with nondisclosure in this model.

Discussion: A small percentage of smokers may conceal their smoking status from their health care providers, and those who do are more likely to perceive their tobacco use to be socially unacceptable.

Introduction

The decline in the social acceptability of tobacco use in the United States over the past half-century is associated with a decrease in tobacco use (Alamar & Glantz, 2006). A concern is that smokers who perceive that their smoking is unacceptable may be more likely to conceal their smoking status from health care providers whose knowledge regarding the availability and effectiveness of smoking cessation treatments may be beneficial in helping smokers to quit. Self-reports of smoking status are generally believed to be accurate in most epidemiological studies (Patrick et al., 1994). Studies of clinical populations, such as those undergoing smoking cessation interventions, cancer patients, pregnant women, and persons with asthma, suggest that certain groups of smokers underreport their smoking status (e.g., Eisner, Yelin, Trupin, & Blanc, 2001; Martinez, Reid, Jiang, Einspahr, & Alberts, 2004; Murray, Connett, Lauger, & Voelker, 1993; Webb, Boyd, Messing, & Windsor, 2003).

Other than a public opinion survey conducted in the United Kingdom that found that three out of 10 smokers concealed their smoking from general practitioners (BBC News, 2007), little is known at a population level about the extent to which smokers conceal their smoking status from health care providers. To address this gap, the present study reports the prevalence of keeping one's smoking status a secret from health care providers based on data collected among smokers in a general population survey of New York City residents.

We also examined whether discernible patterns exist in terms of who keeps their smoking status a secret, hypothesizing that persons who perceive their smoking to be more socially unacceptable will be more likely to keep their smoking status a secret from health care providers. The social unacceptability of smoking takes many possible forms. Such perceptions may be driven by one's normative environment, such as rules prohibiting smoking in one's home or by values about smoking expressed by close friends or family members. It also may be a function of feeling devalued by others because one smokes, what we term "smoker-related stigma," or to experiences of differential treatment because one smokes, such as being turned down for a job. The central motivation behind the present analysis is the concern that individuals who conceal their smoking status are deprived of guidance from health care providers that may help them to quit, making it important to explore who conceals their smoking status as well as potential explanations for why some smokers may conceal their smoking status.

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Methods

Sample

The data for the present analysis come from the New York Social Environment Study (NYSES). The NYSES is a cross-sectional random-digit–dialed telephone survey of 4,000 New York City residents aged 18 or older that was administered between June and December 2005. It was designed to assess the relationship between neighborhoods and drug use behavior, including tobacco use. To reduce misclassification bias resulting from the underreporting of tobacco use and illicit drugs (Cowling, Johnson, Holbrook, Warnecke, & Tang, 2003), the NYSES was introduced to respondents as a "survey about neighborhoods where New Yorkers live and what people think about their neighborhoods." The NYSES collected information on a range of demographic and other factors shown to be associated with tobacco use. It was administered in English, Spanish, Mandarin, and Cantonese and contained closed-ended questions that took approximately 25 min to complete. The cooperation rate for the NYSES was 54%, which is typical for random-digit–dialed telephone studies in large, densely populated urban areas (Galea et al., 2003). Comparisons of the NYSES sample to the U.S. census revealed that the sample was representative of New York City residents on age, gender, and race/ethnicity (data not shown). The institutional review board at the University of Michigan approved the study's protocol.

Current smokers ($N = 835$) answered additional survey questions (requiring about five more minutes). These questions were designed to assess the perceived social unacceptability of smoking and possible behavioral correlates of this social unacceptability. The dependent variable in the present study was the response to the following question: "Have you ever kept your smoking status a secret from a doctor or other health care provider?" We also assessed potential demographic correlates (age, race/ethnicity, education, income, and marital status) and other potential covariates of keeping one's smoking status a secret. Specifically, we asked respondents if they were the parent or primary caretaker of any children under the age of 21 and asked them to characterize their general health status (excellent, very good, good, fair, or poor). Parents may be more reluctant to admit to a health care provider that they smoke because of fear of embarrassment or shame for exposing family members to the harms posed by second-hand smoke or because they do not want to be perceived as a poor role model to their children because of their smoking. People in fair or poor health also may keep their smoking status a secret from health care providers due to embarrassment that, instead of taking steps to improve health, they are further harming their health by continuing to smoke.

The measures of tobacco use, including the average number of cigarettes smoked per day in the past 12 months (categorized as ≤5, 6–10, 11–20, or >20), and tobacco dependence were assessed using the World Mental Health Composite International Diagnostic Interview (Kessler & Ustun, 2004; Kessler et al., 2004). The measure of tobacco dependence asks about problems respondents may have had because of smoking tobacco (e.g., emotional symptoms after cutting down or stopping smoking). Current smoking status was assessed with the question "Are you a current smoker, ex-smoker, or have you never smoked?"

Several items were used to assess the perceived social unacceptability of smoking, including variables that tap into respondents' normative environment and new items designed for the present study to assess the extent to which smokers perceive stigma and differential treatment because of their smoking status. First, we asked respondents, "How do most of your close friends and family feel about cigarette smoking among adults?" (response choices were "acceptable," "unacceptable," or "don't care one way or the other"). Second, we asked respondents, "Which statement best describes smoking in your home?" The response choices for this item included "people smoke anywhere inside your home," "people smoke in some rooms or at some times," and "people do not smoke anywhere inside your home." Third, we created a smoker-related stigma scale comprising two items: "Most people believe that smoking is a sign of personal failure" and "most people think less of a person who smokes." Responses to each component question were on a four-point Likert scale that ranged from strongly disagree to strongly agree. We created a summary score that combined the two stigma items (alpha = .65) and that ranged from 1 to 7 and also created a tertile scale representing low, medium, and high stigma. From three items, we created a measure of perceived differential treatment due to smoking. We asked respondents to reply yes or no to the following questions: (a) Have you had difficulty renting an apartment or finding housing because of your smoking? (b) Were you turned down for a job for which you were qualified because of your smoking? and (c) Were you refused or charged more for health insurance because of your smoking? Respondents who answered yes to any of these three questions were coded as perceiving differential treatment due to smoking.

Here we report the prevalence of each of these variables and, using bivariate and multivariate analyses, assess the relationship between the variables and whether one reported keeping their smoking status a secret from a health care provider (Table 1). We constructed a multivariate logistic regression model to determine predictors of keeping one's smoking status a secret from a health care provider. We included in the model all variables significantly related with keeping one's smoking status a secret from a health care provider and controlled for age, education, race/ethnicity, income, parental status, marital status, health status, cigarettes per day, and tobacco dependence. We weighted the sample by the probability of persons and telephones in the household. SUDAAN was used to analyze the data to appropriately handle *SE*s with survey weights.

Results

Some 8% of current smokers ($N = 63$) reported ever keeping their smoking status a secret from a health care provider. Bivariate analyses revealed no demographic patterns in terms of who reported ever keeping their smoking status a secret from a health care provider (see Table 1). We found no significant relationships between the variables measuring tobacco use and nondisclosure. However, as shown in Table 1, two of the variables we used to measure the perceived social unacceptability of tobacco use were positively and significantly associated with ever keeping one's smoking status a secret from a health care provider. Specifically, respondents who perceived high smoker-related stigma were more likely to report ever keeping their smoking status a secret from a health care provider compared with respondents who perceived less smoker-related stigma

Table 1. Predictors of keeping one's smoking status a secret from a health care provider

Variable	Total ($N = 835$)[a]		Bivariate	Multivariate
	Number of subjects	Percent	*OR* (95% *CI*)	*OR* (95% *CI*)
Demographics				
Female (vs. male)	381	34.60	0.76 (0.42–1.37)	0.87 (0.44–1.74)
Age (years)				
18–34	249	33.36	Ref.	Ref.
35–54	391	44.93	0.58 (0.30–1.13)	0.66 (0.30–1.49)
55+	189	21.71	0.80 (0.36–1.75)	0.80 (0.30–2.11)
Race/ethnicity				
White	368	43.90	Ref.	Ref.
Black	234	27.75	0.72 (0.35–1.49)	0.96 (0.44–2.08)
Latino	167	22.34	0.45 (0.18–1.10)	0.47 (0.15–1.47)
Other	42	6.00	0.96 (0.26–3.59)	1.04 (0.28–3.81)
Education				
Less than high school	110	14.50	Ref.	Ref.
High school graduate	187	24.02	1.05 (0.37–2.97)	0.91 (0.32–2.61)
More than high school education	526	61.48	1.27 (0.51–3.12)	1.20 (0.41–3.55)
Income				
≤US$40,000	361	42.44	Ref.	Ref.
$40,001–$80,000	248	30.00	1.76 (0.91–3.40)	1.69 (0.82–3.50)
$80,001+	144	17.82	0.96 (0.38–2.44)	0.94 (0.32–2.77)
Missing	82	9.74	1.51 (0.56–4.08)	0.69 (0.15–3.15)
Parents or primary caretaker of any children under 21 years of age (vs. not)	316	40.35	0.72 (0.39–1.33)	0.73 (0.32–1.63)
Married (vs. divorced, widowed, separated, or never married)	265	38.10	1.14 (0.62–2.10)	1.20 (0.56–2.60)
In fair or poor health (vs. excellent, very good, or good health)	206	24.28	1.27 (0.66–2.43)	1.84 (0.85–3.97)
Tobacco use				
Number of cigarettes smoked per day				
≤5	349	41.85	Ref.	Ref.
6–10	234	29.38	1.21 (0.59–2.47)	1.26 (0.54–2.93)
11–20	199	22.38	1.44 (0.69–2.98)	2.06 (0.87–4.87)
>20	53	6.39	1.38 (0.40–4.72)	1.53 (0.35–6.63)
Tobacco dependent (vs. not tobacco dependent)	223	26.32	0.64 (0.30–1.38)	0.78 (0.30–2.03)
Social unacceptability of tobacco use				
Stigma scale[b]				
Low	254	33.43	Ref.	Ref.
Medium	273	35.14	2.09 (0.88–4.97)	1.60 (0.66–3.89)
High	255	31.44	3.32 (1.45–7.64)	2.83 (1.14–7.01)
Which statement best describes smoking in your home?				
People smoke anywhere or in some rooms	455	52.79	Ref.	Ref.
People do not smoke anywhere	375	47.21	1.78 (1.00–3.22)	2.04 (1.01–4.11)
Perceived differential treatment due to one's smoking[c]	132	27.05	1.74 (0.86–3.50)	
How do most of your close friends and family feel about cigarette smoking among adults?				
Acceptable	137	17.88	Ref.	
Unacceptable	340	42.38	1.99 (0.77–5.16)	
Don't care either way	324	39.74	1.15 (0.43–3.09)	

Note. *OR*, odds ratio; Ref., referent.

[a]Totals may not add to 835 due to missing values.

[b]The stigma scale comprised two items: (a) Most people believe that smoking is a sign of personal failure and (b) most people think less of a person who smokes.

[c]Perceived differential treatment due to one's smoking was measured by three items: Have any of the following things ever happened to them because of their smoking (yes or no)?: (a) You had difficulty renting an apartment or finding housing, (b) you were turned down for a job for which you were qualified, or (c) you were refused or charged more for health insurance because of your smoking?

(odds ratio [*OR*] = 3.32, 95% *CI* = 1.45–7.64). Current smokers who indicated that no one was allowed to smoke in their home also were more likely to report ever keeping their smoking status a secret from a health care provider (*OR* = 1.78, 95% *CI* = 1.00–3.22) in bivariate analyses.

In a multivariate logistic regression model controlling for age, education, race/ethnicity, income, parental status, marital status, health status, cigarettes per day, and tobacco dependence, social unacceptability of smoking was significantly associated with keeping smoking status a secret from a health care provider. Respondents who perceived high levels of smoker-related stigma were more likely to keep their smoking status a secret from a health care provider compared with those perceiving low levels of such stigma (*OR* = 2.83, 95% *CI* = 1.14–7.01). Current smokers who indicated that no one was allowed to smoke in their home were more likely to report ever keeping their smoking status a secret from a health care provider, compared with those who had fewer or no such restrictions (*OR* = 2.04, 95% *CI* = 1.01–4.11).

Discussion

Increasingly, primary care clinicians are being brought on board to offer effective smoking cessation treatments. It is important to raise awareness of the issue of nondisclosure and the factors that predict nondisclosure of one's smoking status to health care providers in a general population sample of smokers. In our sample, 8% of the current smokers reported ever keeping their smoking status a secret from a health care provider. Smokers who reported that no smoking was allowed in their homes and who perceived high levels of smoker-related stigma were more likely to report ever keeping their smoking status a secret from a health care provider. These results suggest that clinical practice guidelines should reflect the need to encourage open discussion about tobacco use between clinicians and patients in order to offer effective interventions to aid in quitting. One possibility is to offer screening questions that allow patients to ease their way into a discussion of their tobacco use with clinicians. For example, one study found that giving pregnant women a screening question that has multiple response choices allowing women to describe themselves as having "cut down on their smoking since becoming pregnant" led to improved disclosure relative to the question "Do you smoke?" (Mullen, Carbonari, Tabak, & Glenday, 1991). The types of questions we used in the present study also might be used by clinicians to help identify patients who may be at risk for not disclosing their smoking status (by gauging patients' level of perceived social unacceptability of tobacco use).

Because we are relying on self-report of concealment of smoking status, we are likely underreporting the extent to which concealment occurs in clinical settings among current smokers, especially given the strong relationship we observed between the perceived social unacceptability of smoking and one's decision to conceal his or her smoking status. To validate the reported frequency of the concealment of smoking status from health care providers, we would need to collect a biochemical measure of tobacco use from respondents immediately following their visit with a health care provider, raising challenges to obtaining a population-based estimate of the frequency of concealment. If our estimate of concealment is conservative, the problem of nondisclosure may be even bigger than this analysis suggests, emphasizing the importance of this issue for future research.

A limitation of the present study is that the question we used to assess nondisclosure "Have you ever kept your smoking status a secret from a doctor or health care provider?" does not supply important contextual information about the nature of the event of nondisclosure. For example, did the nondisclosure occur passively, while filling out a form, or actively, in response to a question posed by a health care provider? Because we did not collect any information about when the event of nondisclosure occurred or how it occurred, it is difficult to specify the most effective points and means to intervene to minimize events of nondisclosure.

A consequence of the increased social unacceptability of tobacco use may be increased concealment of smoking status from health care providers. Clinicians should be aware of the perceived social unacceptability of tobacco use and encourage open discussion about tobacco use so that they can offer effective interventions to aid all smokers in quitting.

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Declaration of Interests

None declared.

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