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# Healthcare provider counseling to quit smoking and patient desire to quit: The role of negative smoking outcome expectancies



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#### HIGHLIGHTS

- Patients receiving provider counseling to quit had stronger desire to quit smoking.
- This association was fully accounted for by patients' outcome expectancies for smoking.
- Results were similar across levels of smoking.
- Results have implications for enhancing the efficacy of brief provider counseling.

#### ARTICLE INFO

#### Keywords: Smoking Healthcare provider Counseling to quit Outcome expectancies

#### ABSTRACT

Aims: The U.S. Public Health Service Clinical Practice Guideline on treating tobacco use and dependence recommends providing advice to quit to every tobacco user seen in a healthcare setting. However, the mechanism through which counseling encourages patients to quit has not been adequately studied. This study tests whether the association between receiving healthcare provider counseling and desire to quit is accounted for by negative health and psychosocial outcome expectancies of smoking.

*Methods*: Data were collected online from 721 adult smokers who had seen a healthcare provider in the past 12 months. Associations between counseling to quit, negative outcome expectancies of smoking, and desire to quit were tested, as well as whether outcome expectancies and desire to quit differed by type of counseling (counseling only vs. counseling plus assistance) and level of smoking.

Results: Bivariate associations indicated a stronger desire to quit among patients receiving counseling, particularly when it included healthcare provider assistance to quit. SEM results indicated that the association between counseling and desire to quit was fully accounted for by patients' negative health and psychosocial outcome expectancies for smoking. These associations were found across levels of smoking in the case of health expectancies, but were limited to moderate and heavy smokers in the case of psychosocial expectancies.

*Conclusion:* Results suggest that the time devoted to counseling patients about smoking should include providing some assistance to quit, such as recommending a product, prescription or program. Regardless of smoking level, this counseling should incorporate techniques to elicit patients' negative health and psychosocial expectancies of smoking.

#### 1. Introduction

Tobacco use remains the leading cause of preventable death in the U.S., with cigarette smoking being responsible for > 480,000 deaths per year in this country (U.S. Department of Health and Human Services, 2014). The U.S. Public Health Service Clinical Practice Guideline on treating tobacco use and dependence recommends providing strong advice to quit to every tobacco user seen in a health care

setting, following the "5 A's" model: Ask about tobacco, Advise to quit, Assess willingness to make a quit attempt, Assist in quit attempt, and Arrange follow-up (Fiore et al., 2008). For patients who are not willing to make a quit attempt at that time, clinicians are guided to use a brief intervention designed to increase the patient's motivation to quit prior to providing assistance in quitting. This type of brief intervention has only a small effect on cessation rates (Stead et al., 2013), although the potential public health impact of universal counseling to quit is

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J.S. Tucker et al. Addictive Behaviors 85 (2018) 8–13

substantial given that 82% of adults see a healthcare professional each year (Blackwell, Lucas, & Clarke, 2014). Further, most healthcare providers do not fully or consistently implement smoking cessation guidelines (Champassak et al., 2014; Chase, McMenamin, & Halpin, 2007; Thorndike, Regan, & Rigotti, 2007); as a result, the type and content of the counseling provided to patients can vary widely.

To enhance the effectiveness of brief cessation counseling to patients, it is important to better understand the mechanisms through which these efforts encourage patients to quit smoking. Existing research suggests that outcome expectancies of smoking may be one such mechanism. Outcome expectancies, which are central to social cognitive models of cigarette smoking (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004; Brandon & Baker, 1991; Witkiewitz & Marlatt, 2004), refer to the anticipated positive or negative consequences associated with this behavior. Outcome expectancies related to the negative health and negative psychosocial effects of smoking may be particularly salient to smokers. The health risks of smoking are well established (U.S. Department of Health and Human Services, 2004), and the majority of smokers cite concern for their health as a reason for trying to quit (Hyland, Rezaishiraz, Bauer, Giovino, & Cummings, 2005). The psychosocial risks of smoking include negative evaluations of the smoker by others or self for engaging in what is increasingly a non-normative and stigmatized behavior. In addition to health concerns, the potential effects of smoking on others and social pressures to quit are common reasons for trying to stop smoking (Hyland et al., 2005). Smokers with stronger negative smoking-related health and psychosocial expectancies tend to be more motivated to quit and likely to make a quit attempt (M. O. Edelen et al., 2014b; Kim & Shanahan, 2003; Macpherson & Myers, 2009; McKee, O'Malley, Salovey, Krishnan-Sarin, & Mazure, 2005). Many smoking-related intervention strategies capitalize, either explicitly or implicitly, on the connection between these outcome expectancies and smoking (Bize et al., 2012; Schlam & Baker, 2013). Although the mechanisms through which cessation counseling from a healthcare provider encourages patients to quit are not fully understood and have not been adequately studied, it may be partially due to increasing patients' awareness of the negative health and psychosocial consequences of smoking, which in turn strengthens their desire to quit.

The present study empirically tested a conceptual model of healthcare provider counseling to quit smoking which proposes that outcome expectancies account for the association between counseling to quit and patients' desire to quit. Specifically, we tested two hypotheses. The first hypothesis was that smokers who received counseling to quit smoking from a healthcare provider in the past 12 months would report a stronger desire to quit than smokers who did not receive counseling. We further expected that smokers who received counseling that involved assistance to quit (recommending a product, prescription or program to help the patient quit) would report a stronger desire to quit than smokers who received counseling with no specific mention of treatment options, given a recent systematic review and meta-analysis (Aveyard, Begh, Parsons, & West, 2012) suggested that the former may be a particularly important factor in understanding the mechanisms through which healthcare provider counseling encourages patients to make a quit attempt. The second hypothesis was that the association between counseling from a healthcare provider and desire to quit would be accounted for by patients' negative outcome expectancies of smoking. Finally, given that lighter smokers receive less counseling to quit compared to heavier smokers (Aveyard et al., 2012; Kotz, Willemsen, Brown, & West, 2013), and also differ from heavier smokers in their smoking- and quitting-related behaviors and cognitions (Hyland et al., 2005; Levy, Biener, & Rigotti, 2009), we wanted to explore whether the expected associations between provider counseling, outcome expectancies of smoking, and desire to quit might differ depending on the patient's level of cigarette consumption.

#### 2. Methods

#### 2.1. Data collection and procedures

The analyses use combined data from two previous studies conducted to develop and evaluate the RAND Patient Reported Outcomes Measurement Information System (PROMIS®) Smoking Assessment Toolkit, which enables precise and efficient measure of six constructs of central importance to smoking research (including outcome expectancies of smoking) (M. O. Edelen, Tucker, Shadel, Stucky, & Cai, 2012). Participants were current adult smokers (18 years or older) who had smoked for at least a year and did not have plans to quit smoking in the next 30 days. A detailed description of the samples and study methods is reported elsewhere (Stucky, Huang, & Edelen, 2016). The first sample consisted of a subset of smokers (N = 491; Nondaily: n = 70; Daily: n = 421) enrolled in the PROMIS Smoking Initiative calibration sample (see (M. O.Edelen et al., 2014a, Stucky et al., 2014)), who were initially recruited through Harris Interactive's online panel, and completed a follow-up online survey about their smoking behavior between May 2013 and August 2013. The second sample consisted of smokers (N = 368; Nondaily: n = 133; Daily: n = 235) who were recruited via community advertisements (e.g., flyers, campus newspapers) at various community venues in several large U.S. cities, who completed a similar survey either online or via paper and pencil between July 2013 and April 2014. The two samples differed in terms of age, race, education, and cigarettes smoked per day (all ps < 0.01), as described in more detail elsewhere (M.O. Edelen, Huang, & Stucky, 2016). The analytic sample for this paper was restricted to participants who had seen a doctor, nurse, dentist, pharmacist, or any other kind of health professional in the past 12 months (N = 721; 84% of the full sample). Participants provided informed consent for their participation. All materials and procedures were approved by the RAND Human Subjects Protection Committee.

## 2.2. Sample demographics

The analytic sample was 52% female and the racial/ethnic composition was primarily non-Hispanic White (46%), African American (29%), and Hispanic (18%). Average age was 47.6 years. Forty-eight percent had attended some college and 27% earned a bachelor's or graduate degree. Nearly half were married/cohabitating (42%), with fewer being divorced/separated/widowed (27%) and never married (31%). In terms of smoking level, 4% of the sample were non-daily smokers, 40% smoked  $\leq$ 10 cigarettes per day, 36% smoked 11–20 cigarettes per day, and 19% smoked  $\geq$ 21 cigarettes per day. Most had gone a day or longer without smoking in the past because they were trying to quit (67%).

#### 2.3. Measures

# 2.3.1. Background characteristics

Mediation analyses controlled for age (in years), gender, race (White vs. Non-White), education (high school degree or less, more than a high school degree but less than a 4-year degree, and a 4-year degree or more), and marital status (married/cohabitating vs. unmarried). We also classified participants into one of three smoking categories: (1) lighter smokers (i.e., smoked non-daily or up to 10 cigarettes per day); (2) moderate smokers (i.e., smoked 11–20 cigarettes per day); or (3) heavier smokers (i.e., smoked > 20 cigarettes per day).

## 2.3.2. Counseling to quit

Using three items adapted from the National Health Interview Survey (NHIS) (Danesh, Paskett, & Ferketich, 2014), we asked participants whether a doctor, nurse, dentist, pharmacist, or any other kind of health professional did the following in the past 12 months: (a) personally counseled you to quit smoking; (b) recommended any product

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