



Race/ethnicity and intention to quit cigarette smoking

Julia N. Soulakova^{a,*}, Jinyu Li^b, Lisa J. Crockett^c

^a Burnett School of Biomedical Sciences, College of Medicine, University of Central Florida, 6900 Lake Nona Blvd, Orlando, United States

^b Department of Statistics, University of Nebraska-Lincoln, 340 Hardin Hall-North, Lincoln, NE 68583-0963, United States

^c Department of Psychology, University of Nebraska-Lincoln, 315 Burnett Hall, Lincoln, NE 68588-0308, United States

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ABSTRACT

The study examined racial/ethnic differences in smokers' intentions to quit smoking within the next 6 months. The sample included 20,693 current non-occasional smokers in the U.S. who responded to the 2010–2011 Tobacco Use Supplement to the Current Population Survey. The rates of intention to quit within 1 month were significantly higher for non-Hispanic (NH) Black (21%; OR = 1.44, CI = 1.24–1.67) and Hispanic (21%; OR = 1.42, CI = 1.20–1.68) than for the NH Whites (NHW, 15%). The rates of intention to quit within 6 months were significantly higher for NH Blacks (46%; OR = 1.35, CI = 1.18–1.55) than for NH Whites (39%) and significantly lower for NH American Indians/Alaska Natives (38%; OR = 0.54, CI = 0.33–0.90) and NH Asians (39% OR = 0.55, CI = 0.35–0.86) than for NH multiracial (53%) smokers. Most disparities existed even after adjusting for smoking-related and sociodemographic factors. For most racial/ethnic groups, non-daily smoking and doctor's advice to quit were positively associated with the odds of intending to quit. For each racial/ethnic group, having a longer quit attempt in the past 12 months was positively associated with the odds of intending to quit. For NH Whites, NH Blacks, and Hispanics, the specific differences between racial/ethnic groups also depended on getting a doctor's advice, education, and survey mode. Although a smoker's intention to quit may not necessarily lead to immediate smoking cessation, the lack of intention may drastically delay smoking cessation. The study highlights the importance of accounting for racial/ethnic disparities when designing and implementing interventions to motivate smokers to quit and aid smoking cessation.

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1. Introduction¹

1.1. Intention to quit smoking and associated factors

Intention to quit smoking is an important step in the smoking cessation process, which precedes changes in smoking behaviors, e.g., quit attempts (Mathur and Singh, 2015; Feng et al., 2010; Hyland et al., 2006; Prochaska et al., 1992; Prochaska and Goldstein, 1991; DiClemente et al., 1991). Intention to quit has been assessed in a number of population-based and community-based studies (Mathur and Singh, 2015; Dhupal et al., 2014; Tsoh et al., 2011; Abdullah, 2005; Li et al., 2010; Hyland et al., 2006), where intention to quit was defined as seriously considering quitting smoking in the near future, e.g., the next 6 months (Dhupal et al., 2014; Tsoh et al., 2011; Feng et al., 2010; Fagan et al., 2007).

The intention to quit may depend on several factors including smoker's race/ethnicity. Among young U.S. adults who had at least one quit attempt in the past 12 months, NHB smokers had higher odds of intention to quit compared to NHW¹ smokers, while the odds for HISP¹, AIAN¹, ASIAN/HPI¹, and MULT¹ were comparable to the odds for NHW smokers (Fagan et al., 2007). The estimates were similar for these racial/ethnic groups when daily and nondaily smokers were analyzed separately, while controlling for other covariates such as age, gender, employment status, and nicotine dependence measures (Fagan et al., 2007). In a second study, NHW, NHB, and HISP smokers had considerably higher odds of intention to quit when compared to the other smokers (Mathur and Singh, 2015). However, the latter study used a different definition of intention to quit, i.e., intention to quit was assumed if the smoker had tried to find information regarding smoking cessation (Mathur and Singh, 2015). In light of the growing number of minority group individuals in the U.S., documenting racial/ethnic disparities in intentions to quit smoking and understanding the factors that contribute to these disparities is of high priority. A first step towards this goal is to determine if factors known to predict intentions to quit smoking are equally relevant for members of distinct racial/ethnic groups. In this study, we examine intentions to quit across multiple racial/ethnic groups in the U.S. using data from the 2010–2011

* Corresponding author.

E-mail addresses: julia.soulakova@ucf.edu (J.N. Soulakova), lijinyu624@gmail.com (J. Li), ecrockett1@unl.edu (L.J. Crockett).

¹ Abbreviations: NHW, non-Hispanic White; NHB, non-Hispanic Black; HISP, Hispanic; AIAN, non-Hispanic American Indian/Alaska Native; ASIAN, non-Hispanic Asian; HPI, non-Hispanic Hawaiian/Pacific Islander; MULT, non-Hispanic multiracial.

Tobacco Use Supplement (TUS) to the Current Population Survey (CPS; U.S. Department of Commerce, Census Bureau, 2012). We consider demographic factors, smoking history (e.g., previous quit attempts, nicotine dependence), and health care factors (doctor's advice to quit), which have been found to predict quit intentions in the general population, to elucidate whether and how these factors predict intentions differently depending on one's racial/ethnic group.

The impact of other demographic characteristics on intention to quit smoking has been widely studied, but the findings are somewhat inconsistent. Some studies concluded that age, gender, education, and family income were not associated with intention to quit (Tsoh et al., 2011; Feng et al., 2010; Solberg et al., 2007). However, other studies concluded that some of these factors were associated with intention to quit, e.g., employment and education (Mathur and Singh, 2015; Reid et al., 2010). The differences in conclusions are not surprising because the studies examined diverse target populations and used different analytical approaches that controlled or did not control for other covariates.

In addition, several smoking-related factors such as history of quit attempts, e.g., having at least one quit attempt in the past 12 months and duration of the longest quit attempt (Tsoh et al., 2011; Feng et al., 2010), nicotine dependence, e.g., daily smoking and number of cigarettes per day (Tsoh et al., 2011; Feng et al., 2010; Fagan et al., 2007), and doctor's advice to quit (Dhumal et al., 2014) strongly effect a smoker's intention to quit. While the exact estimates vary across studies, the common finding is that making quit attempts, being less nicotine dependent, and getting a doctor's advice to quit are positively associated with smokers' intentions to quit. Some specific dependencies have also been identified; for example, among 18- to 30-year-old smokers in the US, intention to quit among daily smokers can be explained by nicotine dependence, whereas for non-daily smokers, intention to quit is better explained by sociodemographic characteristics such as employment status and family income (Fagan et al., 2007). However, whether the effects of nicotine dependence, past quit attempts, and doctor's advice to quit on intentions to quit are similar for diverse racial/ethnic groups has not been adequately addressed in the literature.

Smoking-related factors also differ across racial/ethnic groups. AIAN show the highest rate of daily smoking (Fagan et al., 2007). Among patients who report smoking, the odds of being asked about their smoking habits and being advised to quit by a healthcare provider are lower for NHB and HISP patients than for NHW patients (Cokkinides et al., 2008). Receiving a doctor's advice to quit smoking became more prevalent from 1992 to 1993 and from 1998 to 1999 for the majority of racial/ethnic groups, but not for AIAN smokers (Reed and Burns, 2008). NHB smokers have higher odds of quitting for 1 or 7 days than do NHW smokers (Kumar et al., 2016; Kulak et al., 2016). Thus, when assessing the impact of smoking-related factors on intention to quit, studies should examine the significance of interaction effects between race/ethnicity and smoking-related factors to assure correct estimation for diverse subgroups of smokers.

1.2. Study goals

Because different social determinants and cultural practices may influence smokers' perceptions of use of tobacco and cigarettes (Espey et al., 2014), we hypothesized that intention to quit might be associated with smoker's race/ethnicity. We also considered whether individuals have received smoking cessation recommendations from a health care professional in order to identify specific racial/ethnic groups who are more likely to be influenced by such a recommendation. Because smokers' intentions to quit might be explained, at least in part, by physical nicotine dependence (Tsoh et al., 2011; Feng et al., 2010) and prior quitting behaviors (Tsoh et al., 2011; Feng et al., 2010; Fagan et al., 2007), we also hypothesized that these factors may influence intentions to quit differently across diverse racial/ethnic groups of smokers.

The study considered seven racial/ethnic groups of non-occasional smokers in the U.S., i.e., NHW, NHB, HISP, AIAN, ASIAN, HPI, and

MULT. For larger (NHW, NHB, HISP) and smaller (AIAN, ASIAN, HPI, and MULT) racial/ethnic groups, the study had the following aims: to determine whether smokers' intention to quit differs across racial/ethnic groups and, if so, to identify groups that have lower rates of intention to quit (Abdullah, 2005); to determine whether non-daily (versus daily) smoking, prior quitting behaviors, and getting a doctor's advice to quit are associated with higher rate of intention to quit in the overall population (after adjusting for sociodemographic characteristics of smokers and survey mode) (Calnan and Sanford, 2004); and to determine whether the importance of these factors is consistent across racial/ethnic groups (Cohen and Conway, 2007).

While a smoker's intention to quit may not necessarily lead to immediate smoking cessation, addressing the above aims is important because the lack of intention to quit may drastically delay smoking cessation. Moreover, identifying racial/ethnic groups that have lower rates of intention to quit smoking could be highly beneficial when designing and implementing tailored community-based smoking cessation interventions.

2. Methods

2.1. Data

The data came from the 2010–2011 TUS. The TUS is a survey of tobacco use sponsored by the National Cancer Institute and co-sponsored by the Centers for Disease Control and Prevention (since 2001–2002). The TUS has been administered as a supplement to the CPS, sponsored jointly by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics, since 1992–1993. The CPS is a continuing monthly assessment of labor force and demographic information for the U.S. population. In selected months, CPS respondents are invited to participate in the TUS, which is targeted at assessing smoking-related behaviors. There are three TUS monthly samples per survey period, where each sample is nationally representative of the civilian non-institutionalized adult (18 years old and older) population of the U.S.

Our study used self-reports of current non-occasional smokers. Subsamples corresponding to larger and smaller racial/ethnic groups were analyzed separately due to incomparable sample sizes. Indeed, the three larger racial/ethnic groups accounted for almost 95% of the overall sample, i.e., there were 16,084 (74.2%) NHW, 1978 (11.3%) NHB, and 1411 (9.3%) HISP. The smaller racial/ethnic groups accounted for only 5% and there were 333 (1.0%) AIAN, 405 (2.3%) ASIAN, 59 (0.2%) HPI, and 423 (1.8%) MULT. Table 1 presents descriptive statistics for subsamples corresponding to larger and smaller racial/ethnic. The first subsample was 78.3% NHW, 11.9% NHB, and 9.8% HISP. The second subsample was 19.1% AIAN, 43.5% ASIAN, 3.5% HPI, and 33.9% MULT.

2.2. Measures

The primary measure was intention to quit smoking within the next 6 months. This binary measure (yes/no) was constructed using responses to the survey question "Are you seriously considering quitting smoking within the next 6 months?" Those respondents who answered "Yes" to the question were also asked "Are you planning to quit within the next 30 days?" Responses to both questions were used to define an additional categorical measure with 3 categories, i.e., smokers who plan to quit within the next month, i.e., 30 days, smokers who consider quitting sometime in 1 to 6 months, and smokers who do not consider quitting smoking in the next 6 months.

The smoking-related measures included daily smoking, duration of the longest quit attempt in the past 12 months, and doctor's advice to quit smoking during the past 12 months. Table 1 presents sample descriptive statistics for the smoking-related measures. Daily smoking status was used to distinguish between daily smokers and non-daily smokers (those who reported being someday smokers and smoking on at least 12 days in the past month). The duration of the longest

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