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Signature:

Mabel Padilla

Date

Allowing Cigarette or Marijuana Smoking in the Home and Car: Prevalence and Correlates in a
Young Adult Sample

By

Mabel Padilla
Master of Public Health

Behavioral Sciences and Health Education

Carla J. Berg, PhD
Committee Chair

Dr. Delia Lang, PhD, MPH
Committee Member

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Mabel Padilla

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Thesis Committee Chair: Carla J. Berg, PhD

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Abstract

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By Mabel Padilla

Given the increases in marijuana use and potential impact of secondhand smoke exposure, we examined the prevalence and correlates of allowing cigarette or marijuana smoking in private settings among 2,002 online survey respondents at two Southeastern U.S. universities in 2013. Overall, 14.5% allowed cigarettes in the home, 17.0% marijuana in the home, 35.9% cigarettes in cars, and 27.3% marijuana in cars. Allowing cigarettes in the home was associated with age ($p=0.04$), minority status ($p<0.001$), living off-campus ($p<0.001$), marijuana use ($p<0.001$), parental tobacco use ($p<0.001$), and positive perceptions of cigarettes ($p<0.001$). Correlates of allowing marijuana in the home included age ($p=0.02$), not having children ($p=0.001$), living off-campus ($p<0.001$), personal ($p<0.001$), parental ($p=0.004$), and friend marijuana use ($p<0.001$), and positive perceptions of marijuana ($p<0.001$). Correlates of allowing cigarettes in cars included personal cigarette ($p<0.001$) and marijuana ($p<0.001$) use, parental tobacco ($p=0.02$) and marijuana ($p=0.04$) use, more friends smoking ($p<0.001$), and positive perceptions of cigarettes ($p<0.001$). Correlates of allowing marijuana in cars included being Black ($p=0.001$), personal ($p<0.001$), parental ($p=0.05$), and friend marijuana use ($p<0.001$), and positive perceptions of marijuana ($p<0.001$). While allowing cigarettes and marijuana in homes and cars was associated, there were distinct factors associated with allowing use in these settings. Understanding the correlates associated with allowing marijuana smoking in private settings has important implications for research and practice. The factors identified by this study may be useful to target in future interventions that seek to promote the adoption of smoke-free private places. Future research is needed to examine the impact of SHSe from marijuana versus cigarettes and the cumulative impact of both given the high rates of concurrent use of these substances.

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LITERATURE REVIEW

Increased prevalence of marijuana use

Marijuana is the most commonly used illicit drug in the United States. In 2012 there were 18.9 million users reported (SAMSHA, 2012). Additionally, data indicate an increased prevalence in marijuana use. The rate of current marijuana use has increased from 5.8% in 2007 to 7.3% in 2012, and the number of users has increased from 14.5 million to 18.9 million among persons aged 12 or older during the same time frame (SAMSHA, 2012). Further, rates of marijuana use are highest among young adults aged 18 to 25, increasing from 16.1% in 2002 to 17.3% in 2008. Frequency of use has also increased, with 5.4 million people aged 12 or older reporting marijuana use on a daily or nearly daily basis in the past year (SAMSHA, 2012). In the past year, marijuana had more new users than any other illicit drug, with 2.4 million reported to have initiated use of the drug in 2012.

Increased legalization/decriminalization

The widespread use of marijuana is occurring alongside its legalization and related decriminalization in the US. Marijuana has been legalized in Washington and Colorado, and 23 additional states have legalized medical cannabis use, have decriminalized marijuana possession laws, or both (Room, 2013). In the US, public attitudes towards the legalization of marijuana have become more accepting (Roffman, 2013; Room 2013). In 2013, a Pew Research Center poll found that 52% of Americans favored legalization, which is a 10 point increase from 2010 (Roffman, 2013). The prospect of legalizing marijuana in the US raises concerns and apprehensions about possible negative effects. Addiction therapists and intervention researchers are concerned that increasing legalization/decriminalization might convey that marijuana use is

harmless (Roffman, 2013). Such changes may contribute to an increase in prevalence of use and subsequent negative consequences.

Harmful effects of marijuana to the smoker

The widespread use of marijuana has raised concerns over its potential adverse health effects. In terms of its respiratory effects, smoking marijuana produces short-term and long-term effects on lung function. Inhaling cannabis smoke exposes the lungs to damaging gaseous and particulate matter and is associated with respiratory impairment (Hall & Degenhardt, 2009; Lee & Hancox 2011; Tetrault, Crothers, Moore, Mehra, Concato, & Fiellin, 2007). Findings have shown that smoking marijuana is associated with large airway inflammation, symptoms of bronchitis, lung hyperinflation, and increased airway resistance (Lee & Hancox 2011; Hall & Degenhardt, 2009; Aldington et al., 2007). For example, a dose-response relationship with cannabis smoking and airflow obstruction has been documented among a convenience sample of 18-70 year olds in New Zealand. In this study one joint of marijuana smoked had comparable effects to 2.5-5 tobacco cigarettes smoked (Aldington et al., 2007).

Among marijuana smokers, immunological competence of respiratory systems is impaired, which increases the rates of respiratory infections and pneumonia (Tashkin et al., 2002). In a nationally representative sample in the US, respiratory problems such as coughing, phlegm, wheezing, chronic bronchitis, and chest sounds in the absence of a cold were associated with marijuana use (Moore, Augustson, Moser, & Budney, 2004; Lee & Hancox, 2011). In a study on airway inflammation among young and asymptomatic marijuana smokers, central airway inflammation was present along with a high incidence of edema, erythematic, and airway secretions (Roth, Arora, Barsky, Kleerup; Simmons, & Tashkin, 1998). In addition, marijuana smokers who smoke an average of a few joints per day had the same degree of airway damage as

tobacco smokers who smoke approximately 20-30 cigarettes daily (Roth et al, 1998). While smoking marijuana has shown to have acute bronchodilator effects, the adverse effects of marijuana use, such as increased bronchitis and exacerbation of asthma, may outweigh such acute benefits (Lee & Hancox 2011; Tetrault et al., 2007).

In terms of long-term effects on the lungs, there is currently no convincing or definitive evidence that smoking marijuana causes airflow obstruction or is a risk for coronary obstructive pulmonary disease (COPD) (Lee & Hancox, 2011; Tan et al., 2009; Tetrault et al., 2007). However, a synergistic effect of tobacco smoking and marijuana use in the development of COPD is suggested in one study (Tan et al., 2009). This is worth noting, as most cannabis users also smoke tobacco (Moore et al., 2004). The relationship between cannabis use and the common smoking-related problems associated with tobacco, such as lung cancer and emphysema, remains unclear (Lee & Hancox 2011). Despite this, it is clear that smoking marijuana has adverse effects on respiratory function that are dissimilar to the patterns of damage associated with tobacco smoking (Lee & Hancox, 2011). This could be attributed to the different methods of smoking marijuana compared to tobacco. Marijuana is typically smoked unfiltered. Likewise, marijuana smokers tend to inhale the smoke deeper than when using tobacco and also utilize breath-holding techniques to increase absorption of tetrahydrocannabinol, the main psychoactive component of cannabis (Lee & Hancox, 2011). Moreover, it is difficult to obtain reliable data on marijuana and its respiratory effects, as it is illegal in the majority of the US.

While the risks of respiratory and oral cancers among marijuana smokers are uncertain, some studies have shown associations between lung cancer and marijuana smoking. A case-control study conducted in New Zealand indicated a dose-response relationship between lung cancer risks and frequency of cannabis use, such that individuals with the greatest amount of

cannabis use had an almost six times higher risk of lung cancer (Lee & Hancox, 2011). Additionally, marijuana contains many of the same carcinogens as tobacco, which causes respiratory cancers (Hall & Degenhardt 2009; Tetrault et al., 2007; Hall & Degenhardt, 2009). Although it is unknown what the pattern of lung function changes indicate among marijuana smokers, it is clear that smoking marijuana is not harmless.

Marijuana use is also associated with negative social and psychological outcomes. Acute adverse effects include anxiety and panic, specifically among naive users, and psychotic symptoms, especially when used at high doses (Hall, 2009). Marijuana use has been found to be associated with disengagement from social norms such as early school leaving (Brook, Lee, Finch, Seltzer, & Brook, 2013), poor educational attainment, other illicit drug use, lower psychological well-being, and increased risk of psychiatric disorders (Hall & Degenhardt, 2009; Hall, 2009). In a longitudinal study following adolescents into adulthood, marijuana use predicted unemployment, work impairment, financial dependence and aspects of the social environment during adulthood (Brook et al., 2013).

Harms of marijuana secondhand smoke (SHS) to others

Limited research exists regarding the impact of marijuana secondhand smoke (SHS) exposure. However, relevant data might be derived from the tobacco control world. Many studies have documented the harmful effects of tobacco SHS exposure to others. Tobacco SHS exposure increases the risk of lung cancer, stroke, coronary heart disease (U.S. Department of Health and Human Services, 2006), and respiratory problems (International Agency for Research on Cancer (IARC), 2004). Among children, exposure is associated with increased risk of respiratory infections, including asthma, bronchitis and pneumonia, severity of asthma symptoms, middle

ear infections, and sudden infant death syndrome (U.S. Department of Health and Human Services, 2006).

Despite the rich literature documenting the risks of tobacco SHS exposure, the data for marijuana SHS exposure is sparse. One study compared mainstream and sidestream tobacco and marijuana cigarette smoke under two machine smoking conditions. The study found that the number of chemicals present in marijuana sidestream smoke were at levels higher than those present in tobacco smoke (Moir, Rickert, Levasseur, Larose, Maertens, White & Desjardins, 2008). The chemicals included nitric oxide, nitrogen oxide, aromatic amines, and hydrogen cyanide. Aromatic amines are believed to be responsible for a significant part of the mutagenic and carcinogenic activity of cigarette condensates (Moir et al., 2008). This study has many implications for marijuana SHS exposure since sidestream smoke makes up the bulk of smoke that nonusers encounter. More research is needed to explore the effects of marijuana SHS.

Social norming from exposure to use

An individual's likelihood of using marijuana has been related to characteristics of the social environment (Brook et al., 2013). For instance, risk factors of adolescent marijuana use include peer influence, home environment, and parental monitoring (Hill, Hawkins, Catalano, Abbot, & Guo, 2005). Among youth, more approval from the social environment is related to a stronger intention to start using marijuana (Malmberg, Overbeek, Vermulst, Monshouwer, Vollebergh, & Engels, 2012). Further, exposure to parental or peer smoking, and exposure to SHS inside the home is associated with increased smoking susceptibility (Veeranki, Mamudu, Anderson, & Zheng, 2014). This makes sense from a theoretical standpoint, as observational learning theory posits that individuals model behavior that is observed in the environment (Bandura, 2001). At the individual level, perceptions of social norms regarding marijuana use

play an influential role in explaining actual substance use (Keyes et al., 2011). Therefore, being exposed to marijuana use in the home, through lack of smoke-free policies, may influence perceptions of marijuana use and actual marijuana use behavior.

In addition, social influences from outside of the home have been shown to be strongly associated with risk-related behaviors among young adults (Walker, Neighbors, Rodriguez, Stephens, & Roffman, 2011). In a group of late adolescents being followed to early adulthood, the substance use behaviors of participants was correlated with the substance use behaviors of their peers (Andrews et al., 2002). In another study, a lower social distance from substance users made an individual more likely to be a substance user (Ernett et al., 2006). Thus, individuals are strongly influenced by social norms and the social environment. Marijuana use may be seen as normative when individuals are exposed to it through peers, and in the home.

Tobacco smoke-free homes

Given the documented risks associated with tobacco SHS exposure, there has been tremendous progress in restricting smoking tobacco in public places and work sites. However, private settings such as homes and vehicles remain a major source of tobacco SHS exposure for many people (Cartmell et al., 2011). Studies have shown that smoke-free policies in private places, such as homes and cars, are associated with reduced smoking among adults and a reduction of SHS exposure among children and nonsmoking adults sharing those private spaces (Cartmell et al., 2011). Smoke-free home policies implemented by parents can be a harm reduction measure, which results in anti-tobacco socialization of young adults and children (Clark et al., 2006). It is worth noting that while complete smoke-free home policies appear to be favorable to SHS exposure, partial smoke-free home policies show little to no effect (Mills, Messer, Gilpin, & Pierce, 2009).

Additionally, individuals who employ smoke-free home policies report a 1.9 cigarette per day reduction in daily cigarette consumption and a thirty-minute increase in time till they smoke the first cigarette of the day (Borland, Yong, Cummings, Hyland & Fong, 2006). Many studies have corroborated the finding that smoke-free homes both facilitate quit attempts and lessen relapse (Borland et al., 2006; Clark, Schooley, Pierce, Schulman, Hartman & Schmitt, 2006; Hyland et al., 2009). Therefore, adopting smoke-free policies in private spaces can both protect individuals living in the home from SHS exposure and help smokers quit

The prevalence of smoke-free homes among smokers has increased rapidly over time. Data obtained from the 2009-2019 National Adult Tobacco Survey indicated that the national prevalence of voluntary smoke-free homes was 81.1% and the prevalence of smoke-free vehicle rules was 73.6% (CDC, 2011; King et al., 2013). However, among smokers, 48% reported smoke-free home rules which is significantly lower than the prevalence for nonsmokers (89.1%) (King et al., 2013). In a study on the prevalence of smoke-free car policies in several countries, the US had a 44% prevalence of smoke-free car policies among smokers (Hitchman et al., 2010).

Correlates of cigarette smoke-free homes and cars

There are several correlates of cigarette smoke-free homes found in the literature. Sociodemographic correlates of having a complete smoke-free home policy include being younger in age, being married, being male, having higher income, and more years of formal education (Mills et al., 2009; King et al., 2013). Non-Hispanic Blacks are more likely to allow smoking in the home, which may be due to factors such as differences in average consumption levels (Mills et al., 2009; King et al., 2013). Although lower socioeconomic status (SES) individuals are more likely to allow smoking in the home, this relationship is mediated by smoking-related variables, like high levels of addiction and living in a pro-smoking social

environment. Therefore, lower prevalence of smoke-free homes among those with low SES can be confronted through tobacco control policy, as social forces alone do not explain this relationship. Lower cigarette consumption is noticeably more likely to be reported by smokers who do not allow smoking in the home (Hyland et al., 2009).

Smokers with no other smoker in the household and those with children also report smoke-free homes, along with smokers who live with a nonsmoker (Hyland et al., 2009; Kegler, Escoffery, Groff, Butler & Foreman, 2007). In a longitudinal study, the strongest predictors of smoke-free homes were having children, specifically younger children, having other nonsmoking adults in the home, and supporting smoke-free public places (Borland et al., 2006).

Characteristics of peer groups are also associated with smoke-free home policies. Smokers with few or no friends who smoke are more likely to prohibit smoking in the home. Having more smoker friends is linked to allowing smoking in the home (Borland et al., 2006). Believing smoke-free was normative was also a predictor of smoke-free homes in a longitudinal study (Borland et al., 2006). Therefore, expectations of others, such as family members and friends, are significant factors associated with smoke-free homes.

Attitudes and beliefs about SHS influence whether an individual will allow or prohibit smoking in the home. Smokers with knowledge or a belief in the harmfulness of environmental tobacco smoke are more likely to have smoke-free homes (Mills et al., 2009; Hitchman et al., 2012). Further, smokers who did not believe that cigarette smoke was harmful to health and could cause lung cancer were more likely to smoke in cars with non-smokers (Hitchman, Fong, Borland & Hyland, 2010).

Marijuana smoke-free homes and cars

Understanding the correlates associated with allowing marijuana smoking in personal spaces (i.e., homes, cars) is essential. Drawing from what is known about tobacco smoke-free home and car policies, such policies related to marijuana may impact both social norms surrounding marijuana use, as well as the health effects of exposure among nonusers and children. Prohibiting the smoking of marijuana in private settings may be an effective form of anti-tobacco and -marijuana socialization for youth (Clark et al., 2006). Additionally, it may impact level of use by possibly decreasing consumption, and may aid in cessation for marijuana smokers.

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) can serve as a theoretical framework for understanding the motivational factors behind allowing or prohibiting smoking in the car and home. TPB focuses on attitudes toward a behavior, subjective norms related to a behavior, perceived behavioral control of a behavior, and behavioral intention, with the latter construct's variance being explained by attitudes, subjective norms, and perceived behavioral control. Attitude encompasses an individual's beliefs about outcomes or attribute of performing a behavior and an individual's evaluations of those outcomes or attributes. Attitudes have shown to be influential in predicting who allows smoking in the home, and are also a correlate of allowing smoking in the home. Smokers who believe that tobacco use causes lung cancer, and that SHS exposure is dangerous are less likely to allow cigarette smoking in the home (Hitchman et al., 2010). Subjective norms are comprised of beliefs about whether important social referents approve or disapprove of a given behavior and a person's motivation to comply with those referents. Subjective norms play an influential role in determining who allows or prohibits smoking in the home. Expectations of important others such as family members and close friends

are factors associated with smoke-free homes (Borland et al., 2006). Adolescents and children who grow up in homes where smoking was not allowed are less likely to smoke (Clark et al., 2006) and youth who reported that their parents would strongly disapprove of marijuana use had lower prevalence of current marijuana use and initiation (SAMSHA, 2012). Thus, smoke-free homes are an important component of antismoking socialization (Kegler et al., 2007). Attitudes and subjective norms have shown to predict a number of different health behaviors; therefore, it is a useful framework for understanding why people choose to allow or prohibit smoking in the home and/or car.

Given this theoretical framework and the dearth of knowledge regarding prevalence and correlates of marijuana smoke-free homes, the aims of the current study were to: 1) to examine the extent to which allowing smoking cigarettes and smoking marijuana in private spaces are consistent with one another; and 2) to examine the prevalence and correlates of allowing cigarette smoking in the home or car vs. allowing marijuana smoking in the home or car. Specifically, we will examine sociodemographic factors, personal tobacco and marijuana use, social factors associated with tobacco and marijuana use, and perceptions of cigarettes and marijuana (i.e., potential for harm or addiction, social acceptability) in relation to allowing cigarette smoking vs. marijuana smoking in private settings.

METHODS

Survey Participants and Procedures

In Spring 2013, students at two universities in the Southeastern U.S. were recruited to complete an online survey. A total of 10,000 students (5,000 randomly selected students from each university) were recruited, yielding 2,002 responses (20.0% response rate), with complete data from 1,966 students. Students received an e-mail containing a link to the consent form with

the alternative of opting out. Students who consented to participate were directed to the online survey. To encourage participation, students received up to three e-mail invitations to participate. As an incentive for participation, all students who completed the survey received a \$10 gift card. The Emory University Institutional Review Board approved this study, IRB# 00059657.

Measures

Demographic Characteristics

Students' age, gender, race/ethnicity, and parental education (as a proxy for socioeconomic status) were assessed. Race/ethnicity was categorized as non-Hispanic White, non-Hispanic Black, and other due to the small proportion of participants reporting other races/ethnicities. To assess relationship status, participants were asked, "What best describes your current relationship situation? Married; Living with a significant other or partner; Single/Never married; Divorced; Separated; or Widowed." This was categorized as married or living with a significant other versus other. Participants were also asked, "Are there children living in your primary residence?"

Cigarette and Marijuana Use

Participants were also asked to report the number of days they smoked cigarettes and used marijuana in the past 30 days. These items were adapted from the Centers for Disease Control and Prevention's 2011 National Youth Tobacco Survey (Centers for Disease Control and Prevention, 2011). We categorized participants who reported any use in the past 30 days as current users.

Social Influence

Participants were asked, “Does any one of your parental figures (select all that apply): Use smoking tobacco (cigarettes, cigars, etc.)? Use marijuana?” They were also asked, “Out of your 5 closest friends, how many of them: Smoke cigarettes? Use marijuana?”

Perceived Harm to Health, Addictiveness, and Social Acceptability

Participants were asked the following questions: “How HARMFUL TO YOUR HEALTH do you think each of the following products are?”; “How ADDICTIVE do you think each of the following products are?”; and “How SOCIALLY ACCEPTABLE AMONG YOUR PEERS do you think each of the following products are?” in reference to cigarettes and marijuana (Berg et al., Under review). Response options were 1 = *not at all* to 7 = *extremely*. We calculated an overall favorability index of each of the tobacco products and marijuana. This was calculated by subtracting the *perceived harm* and the *perceived addictiveness* scores from 7, respectively, and adding it to the *social acceptability* score, for a higher favorability score to reflect lower perceived harm and addictiveness and higher perceived social acceptability.

Symptoms of Health Problems

Participants were asked, “In the past 30 days, on how many of those days did you have cough or sore throat?” and “In the past 30 days, on how many of those days did you feel short of breath or tired after regular activities?” (An et al., 2009).

Private Smoke-Free Policies for Cigarettes and Marijuana

In relation to rules about product use in the home, participants were asked, “Which statement best describes the rules about smoking cigarettes inside your primary residence, that is, where you live most of the time when you are attending school? Do not include decks, garages, or porches: Smoking is not allowed anywhere inside your home; Smoking is allowed in some places or at some times; or Smoking is allowed anywhere inside the home” and “Which

statement best describes the rules about using marijuana inside your primary residence, that is, where you live most of the time when you are attending school? Do not include decks, garages, or porches: Marijuana is not allowed anywhere inside your home; Marijuana is allowed in some places or at some times; or Marijuana is allowed anywhere inside the home.” In relation to product use in vehicles, participants were asked, “Which statement best describes the rules about smoking cigarettes inside your car? Smoking is not allowed anywhere inside your car; Smoking is allowed in my car some times; Smoking is allowed in my car; I don’t own a car” and “Which statement best describes the rules about marijuana use inside your car? Marijuana is not allowed anywhere inside your car; Marijuana is allowed in my car some times; Marijuana is allowed in my car; or I don’t own a car.” These measures were adapted from the Global Adult Tobacco Survey. For each variable, we created a dichotomous variable indicating complete smoke-free policy vs. partial or no smoke-free policy.

Data Analysis

Participant characteristics were summarized using descriptive statistics. We then conducted bivariate analyses using Chi-squared tests for categorical variables and t-tests and ANOVAs for continuous variables examining factors associated with having complete vs. partial or no ban in the home and car for cigarettes and marijuana, respectively. Finally, we examined sociodemographic factors, substance use behaviors, social influence factors, and perceptions of each product in relation to having complete restrictions in each environment for cigarettes and marijuana, respectively, using binary logistic regression, forcing in each of the potential predictors of interest. SPSS 21.0 was used for all data analyses. Statistical significance was set at $\alpha = .05$ for all tests.

RESULTS

Table 1 displays results of descriptive statistics. Participants were an average of 21.02 (SD=2.00) years of age, 72.1% female, and 40.1% Black. Overall, 16.3% were current cigarette smokers, and 19.8% were current marijuana smokers. In addition, 47.2% of cigarette smokers were also marijuana users; 38.7% of marijuana users were also cigarette smokers. Participants reported more friends who used marijuana than who smoked cigarettes ($p<.001$); 24.7% reported that their parents smoked cigarettes; and 6.4% of participants reported that their parents used marijuana. Participants also reported believing that cigarettes were more harmful, more addictive, and less socially acceptable than marijuana on average ($p<.001$, respectively).

Of our total sample, 4.1% reported no policy related to cigarette smoking in the home, 10.4% reported a partial policy, and 85.5% reported a complete smoke-free policy. Regarding marijuana smoke-free home policies, 7.0% reported no policy, 10.0% reported a partial policy, and 83.0% reported a complete policy. Regarding cigarette smoke-free car policies, 8.4% reported no policy, 12.5% reported a partial policy, and 64.1% reported a complete smoke-free policy. In terms of marijuana smoke-free car policies, 4.6% reported no policy, 7.6% reported a partial policy, and 72.7% reported a complete policy. There were associations between allowing either cigarette or marijuana smoking in any one setting and allowing cigarette or marijuana smoking in another setting ($p's<.001$, respectively).

Allowing Cigarette Smoking in the Home

Table 1 highlights differences between those who allow cigarette and marijuana smoking in the home versus those who do not. Allowing cigarette smoking in the home was associated with being Black ($p=.001$), place of residence ($p<.001$), cigarette use ($p<.001$), marijuana use ($p<.001$), days used marijuana among users ($p=.04$), parental tobacco use ($p<.001$), parental marijuana use ($p=.03$), number of friends who smoke cigarettes ($p=.01$), number of friends who

smoke marijuana ($p < .001$), perception of cigarette harm ($p < .001$), perception of cigarette social acceptability ($p = .002$), perception of marijuana harm ($p < .001$), perception of marijuana addictiveness ($p = .02$), and perception of marijuana social acceptability ($p = .001$).

Table 3 displays logistic regression models indicating correlates of allowing cigarette smoking in the home. Significant factors included age ($p = 0.04$), minority status ($p < 0.001$), living off-campus ($p < 0.001$), marijuana use ($p < 0.001$), parental tobacco use ($p < 0.001$), and positive perceptions of cigarettes ($p < 0.001$).

Allowing Marijuana Smoking in the Home

Allowing marijuana smoking in the home was associated with being older ($p = .004$), being male ($p = .002$), being White ($p = .02$), not having children in the home ($p < .001$), living with a partner ($p < .001$), place of residence ($p < .001$), cigarette use ($p < .001$), days of cigarette smoking among smokers ($p = .008$), marijuana use ($p < .001$), days of marijuana use among users ($p < .001$), number of friends who smoke cigarettes ($p < .001$), number of friends who smoke marijuana ($p < .001$), perception of cigarette harm ($p < .001$), perception of cigarette social acceptability ($p < .001$), perception of marijuana harm ($p < .001$), perception of marijuana addictiveness ($p < .001$), and perception of marijuana social acceptability ($p < .001$; see Table 1). In the binary logistic regression indicating correlates of allowing marijuana smoking in the home (Table 3), age ($p = 0.02$), not having children ($p = 0.001$), living off-campus ($p < 0.001$), marijuana use ($p < 0.001$), parental marijuana use ($p = 0.004$), more friends who use marijuana ($p < 0.001$), and positive perceptions of marijuana ($p < 0.001$) were significant correlates.

Allowing Cigarette Smoking in the Car

Table 2 examines differences between those who allow cigarette and marijuana smoking in the car versus those who have complete smoke-free car policies. Allowing cigarette smoking

in the car was associated with being male ($p < .001$), being White ($p < .001$), not having children in the home ($p = .02$), place of residence ($p < .001$), cigarette use ($p < .001$), days of cigarette smoking among smokers ($p < .001$), marijuana use ($p < .001$), days of marijuana use among users ($p = .001$), parental tobacco use ($p < .001$), parental marijuana use ($p < .001$), number of friends who smoke cigarettes ($p < .001$), number of friends who use marijuana ($p < .001$), perception of cigarette harm ($p < .001$), addictiveness ($p < .001$), and social acceptability ($p < .001$), perception of marijuana harm ($p < .001$), addictiveness ($p < .001$), and social acceptability ($p < .001$). Table 3 displays logistic regression models indicating correlates of allowing cigarette smoking in the car. Correlates included cigarette ($p < 0.001$) and marijuana ($p < 0.001$) use, parental tobacco use ($p = 0.02$), parental marijuana use ($p = 0.04$), more friends who smoke cigarettes ($p < 0.001$), and positive perceptions of cigarettes ($p < 0.001$).

Allowing Marijuana Smoking in the Car

Allowing marijuana smoking in the car was associated with being male ($p = .003$), ethnicity ($p < .001$), not having children in the home ($p = .01$), cigarette use ($p < .001$), marijuana use ($p < .001$), days of marijuana use among users ($p < .001$), parental marijuana use ($p < .001$), number of friends who smoke cigarettes ($p < .001$), number of friends who use marijuana ($p < .001$), perception of cigarette harm ($p = .004$), addictiveness ($p = .03$), and social acceptability ($p = .01$), perception of marijuana harm ($p < .001$), addictiveness ($p < .001$), and social acceptability ($p < .001$) and having a cigarette smoke-free home ($p < .001$; see Table 2). In the binary logistic regression model indicating factors correlated with allowing marijuana smoking in the car (see Table 3), identifying as Black ($p = 0.001$), marijuana use ($p < 0.001$), parental marijuana use ($p = 0.05$), more friends who smoke marijuana ($p < 0.001$), and positive perceptions of marijuana ($p < 0.001$) were significant correlates.

Symptoms of Cough/Sore Throat and Shortness of Breath

In the bivariate analyses (Table 1), allowing cigarette smoking in the home was associated with shortness of breath ($p=.01$) and allowing marijuana smoking in the home was associated with cough/sore throat ($p=.002$). Allowing cigarette smoking in the car was associated with cough/sore throat ($p<.001$) and shortness of breath and fatigue ($p<.001$), and allowing marijuana smoking in the car was associated with cough/sore throat ($p=.03$; see Table 2). In the ordinary least squares regression model (not shown in tables), cigarette (Beta: 2.74; 95% CI: 1.53, 3.96; $p<.001$) and marijuana use (Beta: 1.37; 95% CI: 0.22, 2.51; $p=.04$) predicted total days of cough/sore throat and total days of shortness of breath or fatigue. However, allowing cigarette or marijuana smoking in these settings did not predict these smoking-related symptoms.

DISCUSSION

This is the first study to document the correlates of allowing cigarette smoking versus marijuana smoking in private settings. There is a high concordance between not allowing tobacco smoking and marijuana smoking in the car and home. Marijuana use and tobacco use frequently co-occur which may explain the high concordance between prohibiting tobacco smoking and marijuana smoking in the car and home (Agrawal, Budney, & Lynskey, 2012). More people reported not allowing cigarette smoking in the home (85.5%) than not allowing marijuana smoking in the home (83%). On the other hand, more people prohibit the smoking of marijuana in vehicles (72.7%) than cigarettes (64.1%). This can be attributed to the illegal status of marijuana in Georgia, the setting for this study. Vehicles are more visible to the public therefore, the legal ramifications of getting caught smoking marijuana are enough to deter an individual from smoking in that private setting. Additionally, laws pertaining to drugged driving may also deter someone from smoking in their vehicle.

Consumption of marijuana and cigarettes was lower for both groups if they did not allow smoking of both substances in homes or cars. This finding has been consistently found in cross-sectional and longitudinal studies relating to tobacco, as smokers with lighter consumption are much more likely to prohibit smoking in homes or cars (Borland et al., 2006; Hitchman et al., 2010; Hitchman et al., 2012; Hyland et al., 2009; Mills et al., 2009). However, it is surprising to find a similar finding for marijuana, for which there is currently no literature for.

Sociodemographic factors were significantly associated with allowing smoking in personal settings. Being a member of a minority group was a correlate of allowing cigarette smoking in the home, which is consistent with prior findings indicating that Blacks are less likely to prohibit smoking in their homes (Mills et al., 2009; King et al., 2013). Similarly, being Black was a correlate of allowing marijuana smoking in the car. However, being Black was not associated with allowing marijuana smoking in the home and cigarette smoking in the car.

Social influences were also associated with allowing smoking of both substances in private settings. Specifically, parental cigarette use was related to allowing cigarette smoking in the home, which is in line with prior research (Borland et al., 2006). When parents leave the house to smoke, it sends a clear message to youth that smoking is not condoned; allowing adults to smoke in the home, on the other hand, communicates the opposite message (Clark et al., 2006). Having more friends who smoke cigarettes was also related to allowing cigarette smoking in cars. Regarding marijuana, parental marijuana use and having more friends who smoke marijuana were associated with allowing marijuana smoking in the home and car. While no study to our knowledge has looked at correlates of allowing marijuana smoking in private settings, these findings are similar to those found in the tobacco smoke-free home literature, where friends and family members are influential factors associated with smoke-free homes

(Borland et al., 2006). Being surrounded by nonsmokers is associated with prohibiting smoking in the home (Cartmell et al., 2011; Hyland et al., 2009; Kegler et al., 2007) while being surrounded by important social referents, such as family and friends, who smoke is associated with allowing smoking in the home (Borland et al., 2006; Kegler et al., 2007). Parents and friends are important social referents, and marijuana use and cigarette use may be seen as normative when individuals are exposed to it through their peers or family members. Such exposure may influence perceptions of marijuana and cigarettes, which influences whether an individual will allow smoking in the home or car. Further, perceiving marijuana to be socially acceptable may have been influenced by the behavior (which includes parental and peer substance use) of important social referents. Exposure to substance use behavior may work to influence the adoption of smoke-free private settings.

Living off-campus (versus on-campus or with parents) was associated with allowing smoking of both substances in the home. On-campus housing is typically smoke-free; therefore, students have very little control over smoking in those spaces. Similarly, students who live with their parents have little control over smoking in the home, as parents are typically responsible for the implementation of smoke-free homes. Thus, individuals living off-campus, presumably on their own or with roommates of the same age, have the ability to either implement, or not implement, smoke-free policies in their homes. If they are surrounded by smokers, or live with a smoker, they will be more likely to allow smoking in their homes. Furthermore, they may not have children living with them, which makes them more likely to allow smoking in the home.

Attitudes regarding cigarettes versus marijuana also played an important role in allowing smoking in personal settings. Cigarettes were perceived to be more harmful to health, more addictive, and less socially acceptable than marijuana. The presence of tobacco smoke-free

policies in public places may influence perceptions of cigarette smoking as less socially acceptable, while public health messages about cigarette use may contribute to a perception of cigarettes as harmful and addictive. Public health messages about marijuana are not as salient when compared to tobacco, which may contribute to perceptions of low harm and addictiveness. Additionally, participants reported more friends that smoke marijuana than cigarettes on average. This could also contribute to the perception that marijuana use is more socially acceptable.

Having positive perceptions of cigarettes and marijuana was associated with allowing smoking in homes and cars for both substances. Positive perceptions included perceiving both substances to be harmless, not addictive and socially acceptable. This is in line with findings from Hitchman and colleagues (2010) which show that smokers who did not believe that cigarette smoke was harmful to health and could cause lung cancer were more likely to smoke in cars with non-smokers. Additionally, this study showed that smokers who did not believe that SHS exposure was harmful were more likely to smoke in private settings (Hitchman et al., 2010). Studies have shown that attitudes about cigarette harm are correlates and predictors of allowing smoking in homes (Borland et al., 2006; Hitchman et al., 2010; Hitchman et al., 2012; Mills et al., 2009), similarly, attitudes about marijuana harm may act in the same way to influence the allowing of marijuana smoke in the home.

The findings indicated that attitudes and subjective norms are important correlates of allowing cigarette and marijuana smoking in homes and cars, which is in line with the Theory of Planned Behavior. Attitudes have shown to be influential in predicting who allows cigarette smoking in the home, and are also a correlate of allowing cigarette smoking in the home. This is also the case for marijuana, as individuals with positive perceptions of marijuana are more likely to smoke marijuana in the car and home. Subjective norms also play an influential role in

allowing smoking in the home. Expectations of important others such as family members and close friends are factors associated with tobacco smoke-free homes (Borland et al., 2006). This study shows that the same occurs with marijuana. Parental and peer marijuana use is associated with allowing marijuana smoking in the home, and may influence the perception of marijuana use as socially acceptable and normative.

Understanding the correlates associated with allowing marijuana smoking in private settings has important implications for research and practice. The factors identified by this study may be useful to target in future interventions that seek to promote the adoption of smoke-free private places. A marijuana smoke-free home and car may impact the level of marijuana use for an individual, seeing that this occurs with tobacco (Borland et al., 2006; Clark et al., 2006; Mills et al., 2009). By prohibiting smoking in private settings, individuals may also gain a sense of control over their smoking. Encouraging the implementation of smoke-free homes and cars may also impact social norms surrounding marijuana use, and may be an important component of antismoking socialization (Clark et al., 2006; Kegler et al., 2007). By prohibiting smoking of marijuana in the home or car, it is being communicated that the behavior is not condoned. Further, the implementation of smoke-free policies will impact the health effects that exposure brings to nonusers and children. Future research is needed to examine the impact of SHS exposure from marijuana versus cigarettes and the cumulative impact of both given the high rates of concurrent use of these substances.

Limitations

This study has some limitations. First, the survey sample was largely female and drawn from colleges in the Southeastern U.S. Despite the fact that this sample reflects the characteristics of these school populations and has good representation of White and Black racial

backgrounds, it may not generalize to other college populations. Second, the survey response rate may seem low and might suggest responder bias. However, previous online research has yielded similar response rates (29-32%) among the general population and a wide range of response rates (17-52%) among college students (29). We are also unable to ascertain how many participants did not open the e-mail or had inactive email accounts, which impacts what the true “denominator” for this response rate may have been. In addition, prior work has demonstrated that, despite lower response rates, internet surveys yield similar statistics regarding health behaviors compared to mail and phone surveys (30). Also, we did not assess lifetime use of marijuana. Another limitation was the cross-sectional nature of this study, limiting the extent to which we can make causal attributions. Finally, data regarding whether restrictions on smoking in the home were mandated by a landlord was not collected.

Conclusions

In summary, the current findings indicated that attitudes about cigarette and marijuana smoking and subjective norms related to these behaviors are important correlates of allowing cigarette and marijuana smoking in personal settings, which is in line with the Theory of Planned Behavior (18). While there was significant overlap between individuals who allowed cigarette and marijuana smoking in homes and cars, there were distinct factors associated with allowing these behaviors. Future research is needed to examine the impact of SHSe from marijuana versus cigarettes and the cumulative impact of both given the high rates of concurrent use of these substances.

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Table 1. Participant characteristics and bivariate analyses examining differences between those who allow cigarette smoking and marijuana smoking in the home versus not, respectively

Variable	Total M (SD) or N (%)	Allow Cigarette Smoking in the Home		P	Allow Marijuana Smoking in the Home		P
		Yes M (SD) or N (%)	No M (SD) or N (%)		Yes M (SD) or N (%)	No M (SD) or N (%)	
<i>Sociodemographics</i>							
Age (SD)	21.01 (2.00)	20.91 (1.68)	21.02 (2.05)	.40	21.31 (1.72)	20.94 (2.04)	.004
Gender (%)							
Male	530 (27.9%)	82 (29.7%)	448 (27.6%)	.47	112 (34.6%)	418 (26.5%)	.002
Female	1371 (72.1%)	194 (70.3%)	1177 (72.4%)		212 (65.4%)	1159 (73.5%)	
Ethnicity (%)							
White	746 (39.2%)	82 (29.7%)	664 (40.9%)	.001	149 (46.0%)	597 (37.9%)	.02
Black	762 (40.1%)	121 (43.8%)	641 (39.4%)		110 (34.0%)	652 (41.3%)	
Other	393 (20.7%)	73 (26.4%)	320 (19.7%)		65 (20.1%)	328 (20.8%)	
Relationship status (%)							
Married/living with partner	269 (14.2%)	49 (17.8%)	220 (13.5%)	.08	69 (21.3%)	200 (12.7%)	<.001
Other	1632 (85.8%)	227 (32.2%)	1405 (86.5%)		255 (78.7%)	1377 (87.3%)	
Children in the home (%)							
No	1599 (84.1%)	241 (87.3%)	1358 (83.6%)	.13	303 (93.5%)	1296 (82.2%)	<.001
Yes	302 (15.9%)	35 (12.7%)	267 (16.4%)		21 (6.5%)	281 (17.8%)	
Primary residence (%)							
On campus housing	497 (26.1%)	53 (19.2%)	444 (27.3%)	<0.001	42 (13.0%)	455 (28.9%)	<0.001
With parents	585 (30.8%)	71 (25.7%)	514 (31.6%)		45 (13.9%)	540 (34.2%)	
Off campus housing	819 (43.1%)	152 (55.1%)	667 (41.0%)		237 (73.1%)	582 (36.9%)	
<i>Substance Use</i>							
Past 30-day cigarette smoking (%)	309 (16.3%)	70 (25.4%)	239 (14.7%)	<.001	118 (36.4%)	191 (12.1%)	<.001
Days smoked among smokers (SD)	13.16 (11.74)	13.29 (11.44)	13.13 (11.85)	.92	15.41 (12.04)	11.77 (11.35)	.008
Past 30-day marijuana use (%)	377 (19.8%)	99 (35.9%)	278 (17.1%)	<.001	190 (58.6%)	187 (11.9%)	<.001
Days used marijuana among users (SD)	11.18 (10.64)	13.07 (11.69)	10.51 (10.19)	.04	14.48 (11.11)	7.85 (9.02)	<.001
<i>Social Factors</i>							
Parental tobacco smoking							
No	1432 (75.3%)	160 (58.0%)	1272 (78.3%)	<.001	236 (72.8%)	1196 (75.8%)	.26
Yes	469 (24.7%)	116 (42.0%)	353 (21.7%)		88 (27.2%)	381 (24.2%)	
Parental marijuana use							
No	1779 (93.6%)	250 (90.6%)	1529 (94.1%)	.03	281 (86.7%)	1498 (95.0%)	<.001
Yes	122 (6.4%)	26 (9.4%)	96 (5.9%)		43 (13.3%)	79 (5.0%)	
Number of friends who smoke cigarettes	1.05 (1.34)	1.23 (1.44)	1.02 (1.32)	.01	1.65 (1.56)	0.92 (1.26)	<.001

(SD)							
Number of friends who use marijuana (SD)	1.92 (1.85)	2.39 (1.952)	1.84 (1.817)	<.001	3.44 (1.56)	1.61 (1.74)	<.001
<i>Perceptions of Cigarettes</i>							
Perceived harm (SD)	6.49 (0.96)	6.20 (1.18)	6.54 (0.91)	<.001	6.28 (1.04)	6.53 (0.94)	<.001
Perceived addictiveness (SD)	6.44 (1.23)	6.33 (1.25)	6.45 (1.23)	.12	6.34 (1.24)	6.46 (1.23)	.12
Perceived social acceptability (SD)	4.52 (2.01)	4.87 (1.88)	4.46 (2.03)	.002	4.98 (1.92)	4.42 (2.02)	<.001
<i>Perceptions of Marijuana</i>							
Perceived harm (SD)	4.13 (2.14)	3.58 (2.15)	4.23 (2.12)	<.001	2.73 (1.67)	4.42 (2.11)	<.001
Perceived addictiveness (SD)	4.62 (2.23)	4.33 (2.29)	4.67 (2.22)	.02	3.39 (2.06)	4.87 (2.18)	<.001
Perceived social acceptability (SD)	5.17 (2.05)	5.54 (1.89)	5.11 (2.06)	.001	6.08 (1.37)	4.99 (2.11)	<.001
<i>Symptoms</i>							
Days of cough/sore throat (SD)	3.61 (5.17)	4.10 (6.03)	3.53 (5.00)	.08	4.42 (6.36)	3.44 (4.87)	.002
Days of shortness of breath/fatigue (SD)	3.53 (5.94)	4.35 (6.80)	3.39 (5.78)	.01	4.04 (6.23)	3.42 (5.88)	.09
<i>Smoke-Free Policies</i>							
Cigarette-free home policy (%)							
Allow smoking	276 (14.5%)	--	--	--	124 (38.3%)	152 (9.6%)	<.001
Complete smoke-free policy	1625 (85.5%)	--	--	--	200 (61.7%)	1425 (90.4%)	
Marijuana-free home policy (%)							
Allow smoking	324 (17.0%)	124 (44.9%)	200 (12.3%)	<.001	--	--	--
Complete smoke-free policy	1577 (83.0%)	152 (55.1%)	1425 (87.7%)		--	--	--
Cigarette-free car policy (%)							
Allow smoking	397 (20.9%)	99 (46.3%)	298 (21.3%)	<.001	138 (50.5%)	259 (19.3%)	<.001
Complete smoke-free policy	1219 (64.1%)	115 (53.7%)	1104 (78.7%)		135 (49.5%)	1084 (80.7%)	
Marijuana-free car policy (%)							
Allow smoking	231 (12.2%)	61 (28.4%)	170 (12.2%)	<.001	120 (43.8%)	111 (23.9%)	<.001
Complete smoke-free policy	1382 (72.7%)	154 (71.6%)	1228 (87.8%)		154 (56.2%)	1228 (76.1%)	

Note: M = Mean; SD = Standard Deviation.

Table 2. Bivariate analyses examining differences between those who allow cigarette smoking or marijuana smoking in the car versus not, respectively

Variable	Allow Cigarette Smoking in the Car		p	Allow Marijuana Smoking in the Car		P
	Yes M (SD) or N (%)	No M (SD) or N (%)		Yes M (SD) or N (%)	No M (SD) or N (%)	
<i>Sociodemographics</i>						
Age (SD)	21.24 (2.07)	21.07 (2.00)	.15	20.92 (1.60)	21.16 (2.08)	.10
Gender (%)						
Male	141 (35.5%)	317 (26.0%)	<.001	84 (36.4%)	378 (26.7%)	.003
Female	256 (64.5%)	902 (74.0%)		147 (63.6%)	1038 (73.3%)	
Ethnicity (%)						
White	214 (53.9%)	470 (38.6%)	<.001	74 (32.0%)	638 (45.1%)	<.001
Black	103 (25.9%)	479 (39.3%)		106 (45.9%)	478 (33.8%)	
Other	80 (20.2%)	270 (22.1%)		51 (22.1%)	300 (21.2%)	
Relationship status (%)						
Married/living with partner	68 (17.1%)	176 (14.4%)	.20	35 (15.2%)	231 (16.3%)	.70
Other	329 (82.9%)	1043 (85.6%)		196 (84.8%)	1185 (83.7%)	
Children in the home (%)						
No	346 (87.2%)	1000 (82.0%)	.02	203 (87.9%)	1156 (81.6%)	.01
Yes	51 (12.8%)	219 (18.0%)		28 (12.1%)	260 (18.4%)	
Primary Residence						
On campus housing	58 (14.6%)	280 (23.0%)	<0.001	46 (19.9%)	294 (21.3%)	0.248
With parents	114 (28.7%)	419 (34.4%)		67 (29.0%)	462 (33.4%)	
Off campus housing	225 (56.7%)	520 (42.7%)		118 (51.1%)	626 (45.3%)	
<i>Substance Use</i>						
Past 30-day cigarette smoking (%)	198 (49.9%)	77 (6.3%)	<.001	79 (34.2%)	196 (14.2%)	<.001
Days smoked among smokers (SD)	16.38 (12.07)	5.77 (7.26)	<.001	14.20 (11.54)	12.99 (12.05)	.45
Past 30-day marijuana use (%)	172 (43.3%)	149 (12.2%)	<.001	159 (68.8%)	163 (11.8%)	<.001
Days used marijuana among users (SD)	12.85 (10.84)	8.98 (9.90)	.001	13.60 (10.79)	8.90 (9.94)	<.001
<i>Social Factors</i>						
Parental tobacco smoking						
No	269 (67.8%)	962 (78.9%)	<.001	166 (71.9%)	1081 (76.3%)	.16
Yes	128 (32.2%)	257 (21.1%)		65 (28.1%)	335 (23.7%)	
Parental marijuana use						
No	356 (89.7%)	1166 (95.7%)	<.001	196 (84.8%)	1357 (95.8%)	<.001
Yes	41 (10.3%)	53 (4.3%)		35 (15.2%)	59 (4.2%)	
No. of friends using cigarettes (SD)	1.97 (1.54)	0.78 (1.16)	<.001	1.57 (1.53)	0.99 (1.31)	<.001
No. of friends using marijuana (SD)	2.69 (1.84)	1.61 (1.76)	<.001	3.74 (1.43)	1.57 (1.72)	<.001
<i>Perceptions of Cigarettes</i>						

Perceived harm (SD)	6.06 (1.20)	6.62 (0.85)	<.001	6.31 (1.06)	6.51 (0.95)	.004
Perceived addictiveness (SD)	6.26 (1.24)	6.52 (1.20)	<.001	6.29 (1.27)	6.48 (2.00)	.03
Perceived social acceptability (SD)	5.11 (1.74)	4.30 (2.06)	<.001	4.81 (1.97)	4.46 (2.02)	.01
<i>Perceptions of Marijuana</i>						
Perceived harm (SD)	3.18 (1.97)	4.46 (2.09)	<.001	2.29 (1.37)	4.47 (2.08)	<.001
Perceived addictiveness (SD)	3.76 (2.19)	4.92 (2.15)	<.001	3.23 (2.06)	4.87 (2.16)	<.001
Perceived social acceptability (SD)	5.52 (1.73)	4.93 (2.14)	<.001	6.23 (1.20)	4.89 (2.12)	<.001
<i>Symptoms</i>						
Days of cough/sore throat (SD)	4.34 (5.95)	3.31 (4.76)	<.001	4.26 (6.19)	3.45 (4.88)	.03
Days of shortness of breath/fatigue (SD)	4.37 (6.43)	3.01 (5.45)	<.001	3.90 (5.67)	3.23 (5.74)	.10

Note: M = Mean; SD = Standard Deviation.

Table 3. Binary logistic regression models indicating correlates of allowing cigarette or marijuana smoking in the home or car, respectively

Variable	Allow Cigarette Smoking in the Home			Allow Marijuana Smoking in the Home			Allow Cigarette Smoking in the Car			Allow Marijuana Smoking in the Car		
	OR	CI	p	OR	CI	P	OR	CI	p	OR	CI	p
<i>Sociodemographics</i>												
Age	0.04	(0.85-1.00)	.039	1.10	(1.01-1.19)	0.022	1.02	(0.95-1.10)	0.652	1.00	(0.90-1.11)	0.994
Gender												
Male	Ref	--	--	Ref	--	--	Ref	--	--	Ref	--	--
Female	0.94	(0.69-1.28)	0.688	0.87	(0.62-1.21)	0.394	0.87	(0.64-1.18)	0.370	0.73	(0.50-1.07)	0.104
Ethnicity												
White	Ref	--	--	Ref	--	--	Ref	--	--	Ref	--	--
Black	2.18	(1.52-3.12)	<.001	0.72	(0.49-1.07)	0.102	0.88	(0.62-1.25)	0.471	2.26	(1.42-3.59)	0.001
Other	2.18	(1.51-3.16)	<.001	0.88	(0.58-1.34)	0.547	0.66	(0.45-0.96)	0.032	1.59	(0.98-2.58)	0.063
Relationship status												
Married/living with partner	Ref	--	--	Ref	--	--	Ref	--	--	Ref	--	--
Other	1.27	(0.86-1.86)	0.230	1.04	(0.70-1.56)	0.840	0.93	(0.62-1.39)	0.728	0.71	(0.42-1.20)	0.197
Children in the home												
No	Ref	--	--				Ref	--	--	Ref	--	--
Yes	0.78	(0.52-1.16)	0.215	0.41	(0.24-0.71)	0.001	0.99	(0.66-1.46)	0.942	0.94	(0.55-1.60)	0.819
Primary Residence	1.50	(1.24-1.81)	<0.001	2.65	(2.11-3.32)	<0.001	1.17	(0.96-1.43)	0.123	1.16	(0.91-1.49)	0.238
<i>Substance Use</i>												
Past 30-day cigarette smoking	1.39	(0.92-2.08)	0.115	1.47	(0.98-2.20)	0.063	6.63	(4.64-9.47)	<0.001	1.12	(0.70-1.80)	0.630
Past 30-day marijuana use	2.02	(1.40-2.93)	<.001	3.74	(2.64-5.30)	<0.001	2.33	(1.61-3.37)	<0.001	5.77	(3.90-8.54)	<0.001
<i>Social Factors</i>												
Parental tobacco smoking												
No	Ref	--	--				Ref	--	--	Ref	--	--
Yes	2.66	(1.99-3.55)	<.001	0.89	(0.62-1.26)	0.540	1.47	(1.07-2.02)	0.018	1.06	(0.70-1.59)	0.790
Parental marijuana use												
No	Ref	--	--				Ref	--	--	Ref	--	--
Yes	0.88	(0.53-1.46)	0.608	2.12	(1.26-3.56)	0.004	1.73	(1.01-2.93)	0.044	1.78	(0.99-3.19)	0.054
No. of friends using cigarettes	0.93	(0.82-1.06)	0.264	0.92	(0.80-1.05)	0.205	1.29	(1.15-1.44)	<0.001	0.96	(0.83-1.12)	0.634
No. of friends using marijuana	1.05	(0.96-1.16)	0.295	1.45	(1.31-1.61)	<0.001	1.05	(0.95-1.16)	0.311	1.45	(1.28-1.64)	<0.001
<i>Positive Perceptions</i>												
Cigarettes	1.11	(1.05-1.17)	<0.001	1.03	(0.97-1.09)	0.359	1.11	(1.05-1.18)	<0.001	1.00	(0.94-1.07)	0.935
Marijuana	0.99	(0.96-1.03)	0.758	1.11	(1.06-1.16)	<0.001	1.03	(0.99-1.07)	0.190	1.16	(1.10-1.23)	<0.001

Note: OR = Adjusted Odds Ratio; CI = 95% Confidence Interval.
Nagelkerke $R^2 = 0.139; 0.440; 0.394; \text{ and } 0.454$, respectively.