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Parental Influence on Adolescent Smoking Cessation: Is there a Gender Difference?

Grace Kong, Ph.D.^a, Deepa Camenga, M.D.^b, and Suchitra Krishnan-Sarin, Ph.D.^a

^aDepartment of Psychiatry, Yale University School of Medicine, New Haven, CT

^bRobert Wood Johnson Foundation Clinical Scholars, Yale University School of Medicine, New Haven, CT

Abstract

We examined the association of parental disapproval of adolescent smoking and parental smoking status, with past smoking quit behaviors among daily-smoking, high school-aged adolescents, and also tested whether these associations differ for boys and girls. Adolescent regular smokers ($N = 253$) completed questions on smoking behaviors, past smoking cessation behaviors, parental disapproval of smoking, and parental smoking. Past smoking cessation behaviors were defined as “the number of quit attempts that lasted longer than 24 hours” and “the longest number of days of abstinence”. Logistic regression analyses showed that for all adolescents, even having one smoking parent was associated with decreased odds of being abstinent for longer than 2 days. However, for girls, not having any smoking parents was associated with greater duration of abstinence (> 2 weeks). Having both parents, compared with not having any parents disapprove of smoking, was associated with greater number of quit attempts in boys, but this effect was not found in girls. The results indicate that parents have a salient role in adolescent smoking cessation behaviors, and this association appears to be gender-specific. However, further research is needed to understand the mechanisms that explain gender differences in parental influence on adolescent smoking cessation behaviors.

Keywords

adolescents; gender; smoking cessation; parents

1. Introduction

Despite an overall decrease in the prevalence of smoking in youth, nearly half (45%) of American adolescents have tried a cigarette and 11% are daily smokers by 12th grade (age

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Corresponding author: Grace Kong, Ph.D. Department of Psychiatry, Yale School of Medicine 34 Park Street, Room S-201, New Haven CT 06519. Tel: (203) 974-7601. Fax: (203) 974-7606. grace.kong@yale.edu.

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Contributors: Dr. Krishnan-Sarin designed the protocol of the broader adolescent smoking treatment study in which the baseline data for this study was collected. Dr. Kong designed this study, conducted literatures searches, and data analyses. Dr.'s Kong, Camenga, and Krishnan-Sarin interpreted the results. Dr. Kong wrote the first draft of the manuscript and all authors contributed to and have approved the final manuscript.

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18; Johnston, O'Malley, Bachman, & Schulenberg, 2009). It appears that many adolescent smokers want to quit. Approximately 85% have thought about quitting and 55% have made attempts to quit (Zhu, Sun, Billings, Choi, & Malarcher, 1999), but the actual cessation rates are much lower at about 12% when aided by an intervention and even at a lower rate of 7% when unaided (Sussman, 2002). Heavy smokers, such as those who smoke 10 or more cigarettes per day have greater difficulty achieving abstinence than non-daily smokers do (Sargent, Mott, & Stevens, 1998). Therefore, identifying immediate psychosocial factors that contribute to the smoking cessation behaviors in this subset of daily smokers may have valuable treatment implications.

Parents are central figures who can preclude or facilitate the initiation of cigarette smoking in adolescents through modeling their own smoking behaviors and expressing disapproval of adolescent smoking (Jackson, & Henriksen, 1997; den Exter Blokland, Engels, Hale, Meeus, & Willemsen, 2004; Gilman et al., 2009; Melchior, Chastang, Mackinnon, Galera, & Fombonne, 2010; van Zundert, van de Ven, Engels, Otten, & van den Eijnden, 2007). The salience of parental influence is consistent with the social learning model of smoking in that attitude, belief, and behavior toward cigarette use are learned via both indirect and direct modeling of cigarette smoking (Akers & Lee, 1996). Adolescent never smokers who perceived both parents to disapprove of smoking were less than half times likely to become an established smoker two years later (Sargent & Dalton, 2001). Another study observed that the likelihood that adolescents initiated cigarette smoking increased depending on whether they grew up in an environment where one or both parents smoked, and adolescents living with parents who have never smoked were the least likely to experiment with cigarettes (den Exter Blokland et al., 2004). Parents can also influence adolescent quit behaviors, and some researchers have found that parental disapproval of adolescent smoking rather than the parents' actual smoking behavior has a stronger effect on adolescent's smoking quit behaviors (Ellickson, Tucker, & Klein, 2001; McGee, Williams, & Reeder, 2006; Sargent & Dalton, 2001). In contrast, van Zundert and Engels (2009) found that parental smoking and other parental factors such as perceived parental norms against smoking did not influence the smoking cessation behaviors in adolescents. These conflicting findings suggest that parental role in adolescent smoking cessation behaviors needs further examination.

Evidence also suggests that parental influence may differentially affect the smoking behaviors of boys and girls. Initiation of smoking behaviors among girls, when compared with boys, is more influenced by parental smoking and perceived parental approval of smoking (Ashley et al., 2006; Griffin, Botvin, Doyle, Diaz, & Epstein, 1999), suggesting that girls may be more susceptible to parental influence than boys. However, other findings revealed that parental smoking has stronger effect on boys' smoking behavior than girls' (Gilman et al., 2009; Paul, Blizzard, Patton, Dwyer, & Venn, 2008). But, while most studies to date have focused on the gender differences in the initiation of smoking behaviors, less is known about the influence of parents on adolescent smoking cessation. Understanding these differences is crucial for better informing how parents can differently influence the smoking quit behaviors of boys and girls. To our knowledge, only one longitudinal study by Ellickson and colleagues (2001) examined gender differences on parental influence on smoking quit behaviors and found that among other predictors, perception of parental disapproval of smoking assessed in 10th grade predicted the likelihood of smoking cessation for girls two years later, with a weaker effect for boys.

1.1. The Current Study

Given the above evidence, we examined parental influences (parental smoking and disapproval of smoking) on past adolescent smoking cessation behaviors (number of quit attempts and duration of abstinence) and assessed whether this relationship differed for boys

and girls among adolescents who are treatment-seeking, daily smokers. We chose to examine these associations in regular, daily smokers because this group faces the highest health risk due to smoking and has poor success at achieving abstinence despite the desire to quit (Burt & Peterson, 1998). We hypothesized that parental influences (i.e., parental smoking/disapproval) would be more strongly associated with previous smoking quit behaviors of girls than boys, and these associations would be affected by the dosage effect of parents. For instance, having one or both parents smoke or disapprove of smoking would be strongly associated with adolescent previous smoking quit behaviors than having no parents smoke or disapprove.

2. Method

2.1. Sample

Adolescent smokers ($N = 319$) between the ages of 14 and 18, who were mostly Caucasian (93%), were recruited from high schools in New Haven County, Connecticut to participate in a smoking cessation treatment program detailed elsewhere (See Cavallo et al., 2007; Krishnan-Sarin et al., 2006). Parents/guardians provided passive consent, and assent was obtained from adolescents who were 14–17 years-old and consent was obtained from those who were 18 years-old. This study and consent procedures were approved by the Yale University School of Medicine Institutional Review Board.

Adolescents were recruited during lunch and study hall periods using informational flyers and posters in the school. Daily smokers who smoked at least 5 cigarettes per day for the past 6 months and were seeking smoking cessation treatment were eligible for this study. The data used for this study were collected at baseline prior to the start of treatment to determine eligibility.

2.2. Measures

Open-ended questions assessed the smoking behaviors: “How many cigarettes do you currently smoke per day?” and “How old were you when you started smoking daily?”. Modified Fagerstrom Tolerance Questionnaire (mFTQ; Prokhorov, Moor, Pallonen, Suchanek Hudmon, Koehly, & Shaohua, 2000) assessed the level of dependence. We modeled two separate dependent variables, past quit attempts and past duration of abstinence. The number of past quit attempts was ascertained from the question, “How many attempts have lasted longer than 24 hours?”, and the length of abstinence was determined from the question, “What was your longest period of abstinence from smoking (in days)?”. Based on the distribution of the data, the responses to the questions were categorized to three levels: no quit attempts, 1 quit attempt, and more than 1 quit attempts and low duration of abstinence (less than 2 days), moderate duration of abstinence (2–14 days), and high duration of abstinence (14 days and longer), with each category endorsed by 28–36% of the respondents. Of these levels, comparisons were made between none vs. 1 or more quit attempts, none or 1 quit attempt vs. more than 1 quit attempts, low vs. moderate/high duration of abstinence, and low/moderate vs. high duration of abstinence, because we wanted to distinguish whether having no quit attempts differed from having more frequent quit attempts and whether no days of abstinence differed from longer period of abstinence.

The three-level parental smoking variable was created by asking the respondents whether their mother and father currently smoke daily, using a response category of: 0 = “no” and 1 = “yes.” The categories were “both parents smoke”, “one parent smokes” and “no parent smokes.” Parental disapproval of adolescent smoking was assessed using a 5-point item scale, “If your mother knows you smoke, how does she feel about your smoking?” and “If your father knows you smoke, how does he feel about your smoking?” The item responses were: 1 = “She/he does not know I smoke,” 2 = “She/he strongly disapproves,” 3 = “She/he

disapproves,” 4 = “She/he neither approves nor disapproves,” 5 = “She/he approves,” 6 = “She/he strongly approves.” Based on the responses, three parental disapproval groups were formed: “both parents disapprove” if an adolescent indicated that mother and father “strongly disapproves” or “disapproves” of smoking, “one parent disapproves” if mother or father “strongly disapproves” or “disapproves” of smoking and “no parent disapproves” if neither parents indicated “strongly disapproves” or “disapproves” of smoking.

Those who indicated that both parents did not know that they smoke ($n = 43$) and those missing either parental disapproval or parental smoking status ($n = 35$) were excluded from the analysis because they did not fit into the apriori formed parental disapproval and parental smoking groups.

The total number of participants with complete data on all study variables included in the analysis was 253 (79% of the total sample). Those with complete data and with missing data did not differ on any of the study variables.

2.3. Statistical Analyses

All analyses were conducted using PASW version 18. Series of t-tests for continuous variables and chi-square tests for categorical variables were used to assess the differences between those with complete and with incomplete data and between boys and girls. Logistic regression analyses were conducted to test for significant associations between parental variables and adolescent past smoking quit behaviors for the total sample. The independent variables were age, gender, parental smoking (no parents smoking vs. both parents smoking, no parents smoking vs. one parent smoking), parental disapproval of smoking (not having any parents disapprove of smoking vs. having both parents disapprove of smoking, not having any parents disapprove of smoking vs. having one parent disapprove of smoking), and the interaction terms (parental smoking $\times$ gender, parental disapproval of smoking $\times$ gender). All models were fit separately for two separate dependent variables: the number of quit attempts (none vs. 1 or more quit attempts, none or 1 quit attempt vs. more than 1 quit attempts) and days abstinent (low vs. moderate/high duration of abstinence, low/moderate vs. high duration of abstinence). As stated above, the categorization of each variable was determined by the distribution of the data. Models were then run for each DV separately for boys and girls, with age and parental smoking and parental disapproval of smoking as IVs.

3. Results

As shown on Table 1, all adolescents were daily smokers and smoked an average 15.75 ($SD = 7.91$) cigarettes daily. The number of previous smoking quit attempts and previous days of abstinence varied among participants. Making more quit attempts was related to more days of abstinence ($\chi^2(4, N = 253) = 68.94, p < .01$) and having at least one smoking parent was associated with at least one parent disapproving of adolescent smoking, $\chi^2(1, N = 253) = 17.84, p < .01$.

Gender differences were noted; girls tended to smoke daily at a younger age than boys did ($t(253) = 2.13, p = .03$), and boys were abstinent for a longer period of time than girls were, $\chi^2(2, N = 253) = 7.43, p = .02$. However, boys and girls did not differ in their level of dependence based on the mFTQ score, $t(245) = -0.05, p = .96$.

3.1 Duration of Abstinence

Logistic regression analyses showed that for both boys and girls, having one smoking parent, compared to no smoking parents, was associated with a 63% decreased odds of moderate/high duration of abstinence (Table 2). However, for girls, having both smoking parents when compared with no smoking parents was associated with a 92% decreased odds

of high duration of abstinence. Parental disapproval of adolescent smoking was not associated with past duration of abstinence for both boys and girls.

3.2 Quit Attempts

In determining previous number of quit attempts, while having both parents, compared with not having any parents disapproving of smoking, increased the odds of making more than one quit attempt by 9 times for boys; this effect was not detected in girls. Additionally, parental smoking was not associated with past duration of abstinence for both boys and girls.

4. Discussion

The goal of this study was to investigate the role of parental smoking and parental disapproval of smoking on past smoking quit attempts and previous days of abstinence of daily-smoking adolescents seeking treatment and to assess whether these influences differ for boys and girls. The results indicate that for all adolescents, even having one smoking parent compared with having non-smoking parents decreased the odds of being abstinent for two days or longer. Gender differences were noted; specifically, among girls, having both smoking parents was associated with less likelihood of high duration of abstinence (defined as abstinence lasting for longer than two weeks), but parental disapproval of smoking did not influence the number of quit attempts. In boys, the presence of a smoking parent was not related to duration of abstinence, but boys who perceived that both parents disapproved of smoking were nine times more likely to make more than one quit attempt.

The findings of this study are consistent with other study findings that observed that having smoking parents compared to not having any parents smoking put adolescents at greater risk for smoking (Wilson, McClish, Heckman, Obando, & Dahman, 2007; Kleinjan et al., 2009; Zhu et al., 1999). Compared to smoking parents, a non-smoking parent may be more likely to engage in antismoking socialization practices, such as banning cigarette smoking in the home, which may facilitate adolescents' abstinence during a quit attempt. Additionally, parental smoking statuses differentially influenced adolescent smoking cessation behaviors for boys and girls. While having one parent smoking decreased the odds of longer duration of abstinence for all adolescents, having both parents smoking was associated with decreased odds of long-term abstinence lasting longer than two weeks in girls. Existing literature suggests that parental smoking is more strongly associated with girls' than with boys' smoking (Hu et al., 1995; Ashley et al., 2008), and our results suggest that these relationships may extend to smoking cessation efforts.

We also observed that perception of both parents disapproving of smoking is positively associated with making more quit attempts, a finding that is present in boys but not in girls. A possible explanation of this finding is that parents who disapprove of smoking may make more efforts to restrain their children from smoking, therefore, their children tend to be less addicted to cigarettes and more likely to make quit attempts. Furthermore, some researchers have suggested that compared to boys, girls are less likely to have quit in the past, have more withdrawal symptoms during a quit attempt, and report more subjective dependence to cigarettes (Sussman, Dent, Nezami, Stacy, Burton, & Flay, 1998). This cumulative evidence suggests that boys may be less addicted to cigarettes, and therefore, they may be more inclined to make a quit attempt if they perceive their parents to disapprove of smoking. Although we did not find that boys and girls differ in their current smoking rates or in nicotine dependence scores, girls did report starting daily smoking at a younger age, were less likely to stay abstinent for longer period of time, and showed a trend towards making less quit attempts than boys did, suggesting that they may be more addicted.

The associations detected in the study suggest that parents may be important in influencing adolescent smoking quit behaviors. However, the cross-sectional, correlational design of this study prohibits us from testing this hypothesis. Future studies should assess whether incorporating parental smoking cessation as a component of adolescent smoking cessation intervention can enhance its efficacy. The parent component can also include parenting skills that teaches parents to effectively express their disapproval of adolescent smoking, and perhaps even restrict access to cigarettes in the household and prohibit smoking by adolescents in the home or in their presence. Although parental smoking and parental disapproval of smoking were differently associated with boys' and girls' past smoking quit behaviors, it appears that parental influences are important to both genders. However, the mechanisms in which parental influences affect boys' and girls' smoking behaviors should be examined in future studies.

Several limitations of this study warrant attention. First, we did not control for multiple comparisons in logistic regression analyses. Although controlling for multiple comparisons will protect against Type I error, it can inflate Type II error, thus reduce power. Type II error is especially concerning in psychological research that often tends to be underpowered, and it may even hinder the development of coherent scientific literature when the goal is to explore initial potential relationships that have not been established before (Maxwell, 2004), such as the goal of this paper in exploring the role of parents in previous smoking quit behaviors of adolescents and gender differences in this relationship. Therefore, we present the research findings in its current state with the acknowledgment of the limitation that Type I error may be present.

Second, retrospective self-report data limits our ability to infer causality and caution should be taken when interpreting the findings of the study. Third, although evidence suggests adolescents' perceptions of parents' attitudes about smoking may be more important than their actual attitudes; direct assessment of parental disapproval of smoking and parental smoking behavior should be obtained in future studies.

Fourth, it is possible that the periods of abstinence that the adolescents reported in our study may not be related to intentional quit attempts. Adolescents may have been abstinent because of external factors that restricted their smoking such as a family vacation or athletic events. However, abstaining from smoking, whether or not it is intentional, is still an important cessation behavior to assess because repeated periods of abstinence could lead to eventual abstinence (Zhu et al., 1999). A fifth limitation is that we did not assess the family composition such as intact or divorced families. Social influences from parents to their adolescent children may differ as a result of the family structure. For instance, parents who live with their children may exert greater influence on the smoking cessation behavior of adolescents than parents who do not live with their children. Future research needs to focus on this important issue. A final limitation is that our results cannot be generalized to all adolescent smokers because our sample is a self-selected, daily-smoking adolescents seeking treatment. Despite these limitations, these study findings provide good preliminary evidence that parental disapproval of smoking and parental smoking are related to past smoking quit behaviors of daily-smoking adolescents seeking treatment and these influences differ for boys and girls.

This study has several strengths. First, we examined the incremental effect of parents on smoking cessation behaviors by examining three different parental smoking (two smoking parents, one smoking parent, and no smoking parent) and parental disapproval groups (two parents disapproving, one parent disapproving, neither disapproving) on adolescent past smoking quit behaviors and observed a dosage effect of parents (e.g., none, one, and both parents). Another advantage of this study is the inclusion of two different adolescent past

smoking cessation behaviors: the number of quit attempts and the longest days of abstinence. Currently, there is no single, consensual definition of a cessation attempt for adolescents; therefore, examining heterogeneous cessation outcomes better represents adolescent smoking cessation behaviors (Bancej et al, 2007).

In conclusion, parents are important figures who can influence the smoking cessation behaviors of daily-smoking adolescents who are treatment seeking. Gender differences in this association were detected but further studies are needed to specify the mechanisms to explain them.

Highlights

We examined parental disapproval of smoking and parental smoking on quit behaviors in adolescents. For all adolescents, having one smoking parent was associated with decreased odds of abstinence. For girls, not having any smoking parents was associated with abstinence longer than 2 weeks. For boys, both parents disapproving of smoking was associated with greater number of quit attempts.

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References

- Akers RL, Lee G. A longitudinal test of social learning theory: Adolescent smoking. *Journal of Drug Issues*. 1996; 26:317–343.
- Ashley OS, Penne MA, Loomis KM, Kan M, Bauman KE, Aldridge M, Novak SP. Moderation of the association between parent and adolescent cigarette smoking by selected sociodemographic variables. *Addictive Behaviors*. 2008; 33:1227–1230. [PubMed: 18555618]
- Bancej C, O’Loughlin J, Platt RW, Paradis G, Gervais A. Smoking cessation attempts among adolescent smokers: a systematic review of prevalence studies. *Tobacco Control*. 2007; 16:e8. [PubMed: 18048598]
- Burt RD, Peterson AV Jr. Smoking cessation among high school seniors. *Preventive Medicine*. 1998; 27:319–327. [PubMed: 9612822]
- Cavallo DA, Cooney JL, Duhig AM, Smith AE, Liss TB, McFetridge AK, Krishnan-Sarin S. Combining cognitive behavioral therapy with contingency management for smoking cessation in adolescent smokers: A preliminary comparison of two different CBT formats. *The American Journal on Addictions*. 2007; 16:468–474. [PubMed: 18058412]
- Chassin L, Presson CC, Todd M, Rose JS, Sherman SJ. Maternal socialization of adolescent smoking: The intergenerational transmission of parenting and smoking. *Developmental Psychology*. 1998; 34:1189–1201. [PubMed: 9823504]
- den Exter Blokland EAW, Engels RCME, Hale WWH III, Meeus W, Willemsen MC. Lifetime parental smoking history and cessation and early adolescent smoking behavior. *Preventive Medicine*. 2004; 38:359–368. [PubMed: 14766120]
- Ellickson PL, Tucker JS, Klein DJ. Sex differences in predictors of adolescent smoking cessation. *Health Psychology*. 2001; 20:186–195. [PubMed: 11403216]
- Gilman SE, Rende R, Boergers J, Abrams DB, Buka SL, Clark MA, Niaura RS. Parental smoking and adolescent smoking initiation: an intergenerational perspective on tobacco control. *Pediatrics*. 2009; 123:e274–e281. [PubMed: 19171580]

- Griffin KW, Botvin GJ, Doyle MM, Diaz T, Epstein JA. A six-year follow-up study of determinants of heavy cigarette smoking among high-school seniors. *Journal of Behavioral Medicine*. 1999; 22:271–284. [PubMed: 10422618]
- Henriksen L, Jackson C. Anti-smoking socialization: Relationship to parent and child smoking status. *Health Communication*. 1998; 10:87–101. [PubMed: 16370991]
- Hu FB, Flay BR, Hedeker D, Siddiqui O, Day LE. The influences of friends' and parental smoking on adolescent smoking behavior: The effects of time and prior smoking. *Journal of Applied Social Psychology*. 1995; 25:2018–2047.
- Jackson C, Henriksen L. Do as I say: Parent smoking, antismoking socialization, and smoking onset among children. *Addictive Behaviors*. 1997; 22:107–114. [PubMed: 9022876]
- Johnston, LD.; O'Malley, PM.; Bachman, JG.; Schulenberg, JE. Monitoring the Future national results on adolescent drug use: Overview of key findings, 2008 (NIH Publication No. 09-7401). Bethesda, MD: National Institute on Drug Abuse; 2009.
- Kleinjan M, Engels RCME, van Leeuwe J, Brug J, van Zundert RMP, van den Eijnden RJJM. Mechanisms of adolescent smoking cessation: Roles of readiness to quit, nicotine dependence, and smoking of parents and peers. *Drug and Alcohol Dependence*. 2009; 99:204–241. [PubMed: 18848408]
- Krishnan-Sarin S, Duhig AM, McKee SA, McMahon TJ, Liss T, McFetridge A, Cavallo DA. Contingency management for smoking cessation in adolescent smokers. *Experimental and Clinical Psychopharmacology*. 2006; 14:306–310. [PubMed: 16893273]
- Maxwell SE. The persistence of underpowered studies in psychological research: causes, consequences, and remedies. *Psychological Methods*. 2004; 9:147–163. [PubMed: 15137886]
- McGee R, Williams S, Reeder A. Parental tobacco smoking behaviour and their children's smoking and cessation in adulthood. *Addiction*. 2006; 101:1193–1201. [PubMed: 16869849]
- Melchoir M, Chastang J, Mackinnon D, Galera C, Fombonne E. The intergenerational transmission of tobacco smoking – The role of parents' long-term smoking trajectories. *Drug and Alcohol Dependence*. 2010; 107:257–260. [PubMed: 20004064]
- Paul SL, Blizzard GC, Patton GC, Dwyer T, Venn A. Parental smoking and smoking experimentation in childhood increase the risk of being a smoker 20 years later: the Childhood Determinants of Adult Health Study. *Addiction*. 2008; 103:846–853. [PubMed: 18412765]
- Prokhorov AV, de Moor C, Pallonen UE, Suchanek Hudmon K, Koehly L, Shaohua H. Validation of the modified Fagerstrom Tolerance Questionnaire with salivary cotinine among adolescents. *Addictive Behaviors*. 2000; 25:429–433. [PubMed: 10890296]
- Sargent JD, Dalton M. Does parental disapproval of smoking prevent adolescents from becoming established smokers? *Pediatrics*. 2001; 108:1256–1262. [PubMed: 11731645]
- Sargent JD, Mott LA, Stevens MS. Predictors of smoking cessation in adolescents. *Archives of Pediatric Adolescent Medicine*. 1998; 152:388–393.
- Sussman S. Effects of sixty six adolescent tobacco use cessation trials and seventeen prospective studies of self-initiated quitting. *Tobacco Induced Disease*. 2002; 1:35–81.
- Sussman S, Dent CW, Nezami E, Stacy AW, Burton ID, Flay BR. Reasons for quitting and smoking temptation among adolescent smokers: gender differences. *Substance Use & Misuse*. 1998; 33:2703–2720. [PubMed: 9869439]
- van Zundert RMP, Engels RCME. Parental factors in association with adolescent smoking relapse. *European Addiction Research*. 2009; 15:209–215. [PubMed: 19657196]
- van Zundert RMP, van de Ven MOM, Engels RCME, Otten R, van den Eijnden RJJM. The role of smoking cessation-specific parenting in adolescent smoking specific cognitions and readiness to quit. *Journal of Child Psychology and Psychiatry*. 2007; 48:202–209. [PubMed: 17300559]
- Wilson DB, McClish DK, Heckman CJ, Obando CP, Dahman BA. Parental smoking, closeness to parents, and youth smoking. *American Journal of Health Behavior*. 2007; 31:261–271. [PubMed: 17402866]
- Zhu S-H, Sun J, Billings SC, Choi WS, Malarcher A. Predictors of smoking cessation in U.S. adolescents. *American Journal of Preventive Medicine*. 1999; 16:202–207. [PubMed: 10198659]

Table 1

Characteristics of the Sample

Variable	Total <i>N</i> = 253	Boys <i>n</i> = 129 (51%)	Girls <i>n</i> = 124 (49%)	<i>p</i>
Age (M, CI)	16.51 (16.37, 16.66)	16.66 (16.46, 16.86)	16.36 (16.15, 16.58)	.05
Current number of cigarettes smoked per day (M, CI)	15.75 (14.78, 16.73)	16.26 (14.88, 17.64)	15.23 (13.83, 16.64)	.31
Age started daily smoking (M, CI)	13.87 (13.66, 14.07)	14.09 (13.80, 14.37)	13.64 (13.33, 13.94)	.03
mFTQ (M, CI) ¹	3.34 (3.17, 3.51)	3.33 (3.10, 3.57)	3.34 (3.09, 3.59)	.96
Parent smoking				.90
No parents smoke	34.4%	35.7%	33.1%	
One parent smokes	39.9%	39.5%	40.3%	
Both parents smoke	25.7%	24.8%	26.6%	
Parent disapproval				.09
No parents disapprove	10.7%	14.7%	6.5%	
One parent disapproves	45.1%	41.1%	49.2%	
Both parents disapprove	44.3%	44.2%	44.4%	
Quit attempts				.06
0 attempt	36.4%	29.5%	43.5%	
1 attempt	31.6%	36.4%	26.6%	
≥ 2 attempts	32.0%	34.1%	29.8%	
Abstinent days				.02
0–2 days abstinent	36.0%	27.9%	44.4%	
2–14 days abstinent	36.0%	40.3%	31.4%	
≥14 days abstinent	28.1%	31.8%	24.2%	

Note. Independent t-tests were conducted for continuous variables and chi square tests were conducted for categorical variables. mFTQ = modified Fagerstrom Tolerance Questionnaire.

¹ mFTQ on 8 participants (males = 4; females = 4) were missing.

Table 2
Parental Smoking and Parental Disapproval of Adolescent Smoking on Adolescent Smoking Quit Behaviors using Logistic Regression Analyses

	Duration of Abstinence					
	Total (N = 253)		Boys (N = 129)		Girls (N = 124)	
	Low vs. moderate/high abstinence	Low/moderate vs. high abstinence	Low vs. moderate/high abstinence	Low/moderate vs. high abstinence	Low vs. moderate/high abstinence	Low/moderate vs. high abstinence
	OR (CI)	OR (CI)	OR (CI)	OR (CI)	OR (CI)	OR (CI)
None vs. one parent smokes	0.37* (0.14, 1.01)	0.94 (0.35, 2.53)	.37* (0.14, 1.01)	0.60 (0.25, 1.44)	0.31* (0.12, 0.80)	1.62 (0.43, 6.04)
None vs. both parents smoke	1.67 (0.47, 5.91)	2.54 (0.90, 7.15)	1.65 (0.47, 5.85)	.47 (0.18, 1.25)	0.08** (0.02, 0.41)	0.28 (0.06, 1.38)
None vs. one parent disapproves	3.57 (0.95, 13.46)	1.49 (0.43, 5.10)	3.50 (0.93, 13.24)	2.49 (0.51, 12.19)	0.55 (0.08, 3.86)	0.68 (0.09, 5.30)
None vs. both parents disapprove	2.26 (0.63, 8.13)	1.03 (0.31, 3.47)	2.23 (0.62, 8.03)	1.71 (0.35, 8.43)	0.59 (0.09, 4.05)	0.75 (0.10, 5.76)

	Quit Attempts					
	None vs. 1 or more quit attempts	None/1 quit attempt vs. more than 1 quit attempts	None vs. 1 or more quit attempts	None/1 quit attempt vs. more than 1 quit attempts	None vs. 1 or more quit attempts	None/1 quit attempt vs. more than 1 quit attempts
	OR (CI)	OR (CI)	OR (CI)	OR (CI)	OR (CI)	OR (CI)
None vs. one parent smokes	1.06 (0.41, 2.74)	.58 (0.23, 1.50)	1.06 (0.41, 2.74)	0.61 (0.26, 1.43)	0.80 (0.32, 2.00)	1.38 (0.37, 5.12)
None vs. both parents smoke	1.06 (0.36, 3.11)	1.26 (0.44, 3.60)	1.07 (0.36, 3.13)	0.97 (0.36, 2.57)	0.89 (0.31, 2.47)	0.91 (0.21, 3.88)
None vs. one parent disapproves	1.50 (0.45, 5.00)	5.01 (0.93, 27.03)	1.51 (0.45, 5.07)	1.04 (.22, 4.91)	0.84 (0.18, 3.97)	0.70 (0.10, 4.93)
None vs. both parents disapprove	1.73 (0.52, 5.75)	9.10** (1.75, 47.44)	1.74 (0.52, 5.79)	.63 (.13, 3.01)	0.55 (0.11, 2.71)	0.36 (0.05, 2.61)

Note. All analyses controlled for age. Low duration of abstinence = less than 2 days, moderate duration of abstinence = 2–14 days, and high duration of abstinence = 14 days and longer. OR = odds ratio; CI = 95% confidence interval.

* $p < .05$.

** $p < .01$.

*** $p < .001$.