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Factors Associated with Former Smokers
among Female Adolescents in Rural Virginia¹

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Abstract

We examined multiple ecological factors (individual, family, peer, school, and community) associated with female adolescent former smokers (FS) and current smokers (CS) in a sample of 2,029 7th-12th grade girls living in a rural area of Virginia. Compared to CS, FS reported lower levels of delinquency, less coping by taking drugs, less availability of cigarettes, and less alcohol and marijuana use. They also reported less depression, few suicidal thoughts, and few suicide attempts than CS. FS reported spending more time in community clubs, higher self esteem, higher grades, more parental monitoring, more parent attachment, and more school attachment than CS. Logistical regression analyses revealed significant effects on coping by taking drugs, alcohol use, depression, grades, parental monitoring, and perceived availability of cigarettes. The findings have implications for smoking intervention programs with adolescent girls in rural areas.

Tobacco use is the single most preventable cause of death and disease in our society today (CDC, 1999). Each year, tobacco use causes more than 430,000 deaths and costs the Nation approximately \$50–\$73 billion in medical bills alone. It is the leading cause of lung cancer, pulmonary disease, heart disease, stroke, vascular disease, and peptic ulcer disease (Slade, 1993). Nearly all smokers begin as adolescents (U.S. Department of Health and Human Services, 1994). While not all adolescents who try cigarettes continue to smoke as adults, those who smoke only a few cigarettes during their teens are twice as likely to become adult smokers as those who do not (Chassin, Presson, Sherman, & Edwards, 1990). This smoking activity is only the beginning of a lifetime of health problems for tens of thousands of people because about 60 % of current smokers began by the age of 14 (Gold, 1995).

Although overall rates of smoking among adolescents have declined slightly (Johnston, et al. 2002), adolescent girls have become a major target of the tobacco industry's effort to keep smoking in the mainstream (Gold, 1995). According to a nationally representative cross-sectional study, girls are more susceptible to smoking behavior than boys evidenced by reports that although they have not smoked in the past, they might in the future (Kaufman et al., 2002). Based on data from the *National Health Interview Surveys*, Pierce and Gilpin (1996) estimated the smoking duration for female adolescent smokers who initiated the behavior at age 16 was 20 years. About half of those who continue to smoke regularly will die prematurely as a result of tobacco related diseases (CDC, 1996).

Many adolescent smokers report a desire and attempts to quit. For example, in a study of 1,210 high school seniors who smoked, Burt and Peterson (1998) found that 67% wanted to quit and 60% had actually made at least one attempt within the past year. However, only 21% of those who had attempted to quit were still smoke-free at the time of the survey and only 3% had remained smoke-free for a whole year. Other researchers have reported similar findings with

respect to the difficulty for adolescent smokers to quit (e.g., Burt & Peterson, 1998; Ershler, Leventhal, Fleming, & Glynn, 1989; Zhu, Sun, Billings, Choi, & Malarcher, 1999).

Gender differences in cessation rates are apparent. In their study of adolescents, Burt and Peterson (1998) reported that girls are much less likely than boys to maintain a cessation attempt. Studies of adults suggest that women have a more difficult time quitting than men in part because they become more physiologically addicted to nicotine (Fiore, 1992; Gilchrist, Schinke, & Nurius, 1989; Sussman et al. 1998). Despite the fact that 38% of youth smokers report an interest in attending youth-oriented smoking cessation programs (Gallup, 1992), few such programs exist (Henningfield, Michaelides, & Sussman, 2000).

Given these findings, a focus on factors related to smoking cessation among adolescent girls is warranted. Additionally, because several researchers have concluded that rates of smoking behavior are higher among rural than urban youth (Aloise-Young, Wayman & Edwards, 2002; Cronk & Sarvela, 1997; Harrell, Bangdiwala, Deng, Webb, & Bradley, 1998; Horn, Dino, & Momani, 1999), this study will focus on factors related to smoking cessation among adolescent girls from rural communities.

Literature Review

Predictors of Smoking Behavior

Behavior is influenced by a host of factors both internal and external to the individual. Ecological theory (Bronfenbrenner, 1979, 1986), developmental contextualism (Lerner, 1991, 1995), and risk and protective factor theory (Bogenschneider, 1996), all of which support the notion of an interactive effect between the individual and his or her multiple contexts, provide the theoretical rationale for examining multiple influences on adolescent smoking behaviors. For the purpose of this study, we focus our attention on a multitude of factors located in the individual, family, peer, school, and community contexts.

Much research has focused on ecological factors related to adolescent smoking behavior. Most of these, however, have focused on factors related to smoking initiation and frequency of use. For example, at the individual level, a positive relationship has been established between adolescent smoking and delinquency (Kandel et al., 1997; Luthar & D'Avanzo, 1999), depression (Griesler, Kandel, & Davis, 2002; Sarigiani, Ryan, & Peterson, 1999; Wagner & Atkins, 2000), use of alcohol (Griffin, Botvin, Doyle, Diaz, & Epstein, 1999; O'Byrne, Haddock, Poston, & Mid-American Heart Institute, 2002; Tucker, Ellickson, & Klein, 2003), and dieting behavior (Austin & Gormaker, 2001; National Center on Addiction and Substance Abuse, 2003; Simantov, Schoen, & Klein, 2000). An inverse relationship has been demonstrated between adolescent smoking and religiosity (Amey, Albrecht, & Miller, 1996; Kaufman et al., 2002; National Center on Addiction and Substance Abuse, 2002), grade point average (Griffin et al., 1999; O'Byrne et al., 2002; Ritchey, Reid, & Hasse, 2001), stress and coping style (Byrne et al., 1995; Horn et al. 1999; National Center on Addiction and Substance Abuse, 2003; Sarigiani et al. 1999; Simantov et al. 2000) and participation in extracurricular activities (Aaron et al. 1995; Escobedo, Marcus, Hotlzman, & Giovino, 1993; Simantov et al., 2000; Simons-Morton et al., 1999). The research is mixed with respect to the relationship between smoking and self-esteem (Jackson, 1997; Lewis, Harrell, Bradley, & Deng, 2001; Michell & Amos, 1997; Moore, Laflin, & Weis, 1996). Additionally, smoking behavior appears to be more prevalent in White versus African-American adolescent girls (e.g. Gittlesohn, Roche, Alexander, & Tassler, 2001; Kelder et al., 2003; Mermelstein & the Tobacco Control Network Writing Group, 1999),

At the family level, researchers have found that predictors of adolescent smoking behavior include coming from a single-parent household, (Ritchey et al., 2001, Simantov et al., 2000; Tucker et al., 2003), the perception of low parental monitoring (Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Lucas & Lloyd, 1999), and low parent-adolescent communication or poor relationship with parents (National Center on Addiction and Substance Abuse, 2003).

At the peer level, susceptibility to peer pressure (Ritchey, et al. 2001; Sarason, Mankowski, Peterson, & Dinh, 1992; Urberg, Cheng, & Shyu, 1991) has been linked with smoking behavior. Attachment to teachers and school is related to lower levels of smoking behavior (Lloyd, Lucas, & Fernbach, 1997; MacDonald & Wright, 2002) while skipping school is related to higher levels (Kaufman et al., 2002). At the community level, perceived availability of cigarettes is associated with smoking behavior (Castrucci, Gerlach, Kaufman & Orleans, 2002; Emery, Gilpin, White & Pierce, 1999)

Although few in number, those researches who have examined predictors of smoking cessation (i.e. quitting) in adolescents suggest that adolescent smoking cessation is also influenced by a variety of ecological factors. For example, at the individual level, school performance and socioeconomic status are inversely related to cessation attempts (Hu, Lin, & Keeler, 1998). Female adolescents who have successfully quit smoking report lower levels of depression (Zhu et al., 1999), and less marijuana use (Ellickson, Tucker, & Klein, 2001) than do current smokers. At the peer level, female adolescents who have successfully quit smoking tend to have more non-smoking friends than do smokers (Ellickson et al., 2001; Riedel, Robinson, Klesges, & McLain-Allen, 2002). At the family level, female adolescents who have successfully quit smoking seem to come from intact nuclear families (Ellickson et al., 2001) and experience higher levels of parental monitoring and attachment than do smokers (Skinner, Massey, Krohn, & Lauer, 1985).

Research Question

In sum, while much is known about factors predicting smoking behavior, an exploration of factors related to smoking cessation is less common, especially in populations of rural adolescent girls. This study examines ecological variables previously identified in the literature on smoking behavior in those adolescent girls who are former smokers and compares them to those who are current smokers as well as to those who have never smoked. A closer examination

of those who have successfully quit smoking may provide useful information for developing intervention programs for those adolescent girls who continue to smoke.

Method

Sample

Data were gathered from 2,029 7th-12th grade girls living in one of seven rural contiguous counties in Southeastern Virginia. Sixty-three percent reported their ethnic group as “White/Anglo/Caucasian,” 28% as “Black or African-American,” 3% as “mixed race/biracial,” 2% as “Other,” 1% as “Hispanic or Latino,” 1% as “Asian,” and 1% as Native American. The mean age was 15.4 years. Based on a composite score of parent education and employment status, approximately 31% of participants were classified as low SES, 57% as middle SES, and 12% as high SES.

Procedure

This study is part of a larger comprehensive survey of the attitudes, behaviors, values, worries and hopes of Virginia teens enrolled in the 7th-12th grades constructed by a group of youth and adults in partnership with the university faculty as part of a community-based action research effort (see Huebner 2002, for details of this process). The resulting 174-item survey was administered during regular classes on one day to all students who were present, had parent permission and chose to participate. Teachers were trained to administer the survey, to answer questions about the survey and to collect the answer sheets in a manner that would respect the confidentiality of each student. Students were assured that their answers were anonymous and reminded not to put their names on the booklets or response sheets.

Measures

Unless otherwise noted, all measures were drawn from the Teen Assessment Project (Small & Rodgers, 1995) or the Youth Risk Behavior Survey (CDC, 2000). Reliability of the Youth Risk Behavior Survey items has been established and is reported by Brener et al. (1995).

Smoking Frequency. One item asked participants “During the past 30 days, on how many days did you smoke cigarettes, cigars or use chewing tobacco products?” Responses ranged from (0) = 0 days, to (6) = all 30 days.

Individual Factors

Ethnicity. Participants self reported their ethnicity. Responses were coded such that (0) = White and (1) = minority.

Delinquency. This 9-item scale measured the frequency with which respondents reported participation in a variety of delinquency activities including: cheating on a test, skipping school, using fake identification, running away, driving a car without the owner’s permission, purposely damaging property, stealing, breaking into a car or building, and getting into trouble with the police. Response options ranged from (0) = never to (3) = five or more times. Higher scores reflect higher participation in delinquent acts. Cronbach’s alpha for this summed measure was .78.

Grades. Participants were asked to self-report on the average grades they usually received in their school courses. Responses ranged from (0) = mostly below D’s to (7) = mostly A’s. Higher scores reflect higher grades.

Self-esteem. Rosenberg’s (1965) 10-item scale was used to examine participants’ global self-esteem. Item responses ranged from (1) = strongly disagree to (4) = strongly agree. Items were recoded such that high scores indicate higher levels of self-esteem. Cronbach’s alpha for the scale was .86.

Depression. One item asked, “During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?” Responses included (0) = no or (1) = yes

Suicidal Ideation. One item asked, “During the past 12 months, did you make a plan about how you would attempt suicide?” Responses included (0) = no or (1) = yes.

Suicide Attempt. One item asked, “During the past 12 months, how many times did you actually attempt suicide?” Responses ranged from (0) = 0 times to (4) = 6 or more times.

Coping Mechanism. One question asked, “When you face difficulties or feel tense, how often do you smoke, drink or use drugs not prescribed by a doctor?” Responses ranged from (0) = never to (4) = most of the time.

Alcohol use. One item asked, “During the past 30 days, on how many days did you have at least one drink of alcohol?” Responses ranged from (0) = 0 days to (6) = all 30 days.

Marijuana use. One item asked, “During the past 30 days, on how many times did you smoke marijuana (dope, pot, weed)?” Responses ranged from (0) = 0 times to (5) = 40 or more times.

Involvement in conventional activities. Five items measured participants’ involvement in conventional activities. Participants were asked how often on average they spent time in several different types of activities. These activities included school-based non-sport extracurricular activities, volunteering in the community, church or other religious-related activities, school or community-based sports, and non-school related clubs. Responses ranged from (0) = never, to (9) = daily. Responses were summed such that higher scores represent higher overall involvement. Internal consistency was not computed on these items since conceptually they were not expected to be interrelated. This measure yields a global picture of involvement in pro-social activities.

Dieting behavior. One item asked participants to describe their behavior related to weight. Responses were coded such that (0) = being satisfied with weight or trying to gain weight and (1) = trying to lose weight.

Family Factors

Socioeconomic status (SES). SES was computed using a composite score of parent education and employment status.

Family structure. One question asked participants “Whom do you live with most of the time?” Responses were coded such that (0) = living with non-intact nuclear family and (1) = living with biological mother and father.

Parental monitoring. The Parental Monitoring Scale consisted of eight items assessing participants’ perception of how well their parents monitoring their whereabouts and friends. Responses ranged from (0) = never to (4) = always (cronbach’s alpha .80). Higher scores indicate higher levels of parental monitoring.

Parent quality. The Parental Quality Scale consisted of three items: “My parents are good parents,” “My parents care about me” and “My parents respect me”. Responses ranged from (0) = never to (4) = always (cronbach’s alpha .82). Higher scores indicate higher levels of parent quality.

Parent-adolescent communication. The Parent-Adolescent Communication Scale consisted of seven items. Participants were asked to report how often during the past year they had communicated with their parents about a variety of topics ranging from drugs and alcohol to teachers or classes in school. Response categories ranged from (0) = never to (4) = very often (cronbach’s alpha .81). Higher scores indicate greater frequency of communication.

Peer Factors

Peer pressure. Two items assessed participants’ level of perceived pressure. These items asked participants to rate how often they let their friends talk them into doing things they did not

want to do, and how often they were afraid to do things their friend would not approve of.

Responses ranged from (0) = never to (4) = very often. These items were summed. Higher scores reflect higher levels of pressure.

School Factors

School attachment. Four items were used to assess school attachment. They were: “I enjoy going to school”; “Teachers in my school encourage me to do and be the best I can”; “Teachers in my school respect and listen to me”; and “I believe I am getting a good, high quality education at my school”. Response options ranged from (0) = strongly disagree to (3) = strongly agree. These items were combined into a scale by computing an average score (cronbach’s alpha.75). Higher scores reflect greater attachment to school.

Community Factors

Perceived availability of cigarettes. One question asked: “How easy would it be for you to get cigarettes, chewing tobacco, cigars, cigarillos, etc.” Responses ranged from (0) = very difficult to (4) = very easy.

Results

In this study, 49% of respondents were classified as never smokers (n=989), 25% as former smokers (n=500) and 26% as current smokers (n=526). To examine differences between factors that distinguish Never Smokers, Former Smokers, and Current Smokers, an Analysis of Variance (ANOVA) was conducted comparing the ecological variables for Never Smokers, Former Smokers, and Current Smokers. Results are presented in Table 1.

Insert Table 1 about here

Even though we set the critical alpha level at .01 to control for possible alpha error, significant mean differences were evident in terms of: Age $F(2, 2010) = 39.94$ $p = .000$; Dieting

Behavior $F(2, 2008) = 4.22 p=.015$; Delinquency $F(2, 28) = 187.17 p=.000$; Hours in Extra-Curricular Activities $F(2, 2008) = 22.06 p=.000$; Hours in Clubs $F(2, 2006) = 9.51 p=.000$; Hours in Church Related Activities $F(2, 2001) = 20.33 p=.000$; Hours Volunteering $F(2, 2001) = 6.23 p=.001$; Hours in Community Based Sports Clubs $F(2, 2002) = 9.51 p=.000$; Coping by Using Drugs $F(2, 1997) = 661.75 p=.000$; Availability of Cigarettes $F(2, 2004) = 259.24 p=.000$; Frequency of Alcohol Use $F(2, 2008) = 322.59 p=.000$; Frequency of Marijuana Use $F(2, 2007) = 2.88.31 p=.000$; Depression $F(2, 1975) = 54.46 p=.000$; Suicidal Plans $F(2, 1975) = 28.36 p=.000$; Suicide Attempt $F(2, 1995) = 28.70 p=.000$; Self-Esteem $F(2, 1758) = 28.14 p=.000$; Grades $F(2, 2000) = 81.30 p=.000$; Parental Monitoring $F(2, 1951) = 15.60 p=.000$; Parent Attachment $F(2, 1985) = 43.79 p=.000$; Parent Communication $F(2, 1962) = .805 p=.000$; Socioeconomic Status $F(2, 1631) = 10.62 p=.000$; Parent Attitudes about Underage Drinking $F(2, 1974) = 50.67 p=.000$; Parent Attitudes about Premarital Sex $F(2, 1966) = 2.19 p=.000$; School Attachment $F(2, 1976) = 71.47 p=.000$, and Availability of Cigarettes $F(2, 1592) = 116.40 p=.000$. Peer pressure was the only variable that was not significantly different across the three groups.

Bonferroni post-hoc comparisons were conducted to examine where the significant differences occurred between Current Smokers (CS), Former Smokers (FS), and Never Smokers. Compared to CS, FS reported lower levels of delinquency, less coping by taking drugs, less availability of cigarettes, and less alcohol and marijuana use. They also reported less depression, few suicidal thoughts, and few suicide attempts than CS. FS reported spending more time in community clubs, higher self esteem, higher grades, more parental monitoring, more parent attachment, and more school attachment than CS.

Compared to Never Smokers, Former Smokers were older, reported slightly more delinquency, spent less time in school-based extracurricular activities, non-school clubs, and volunteering. FS were more likely to report coping by taking drugs, greater availability of cigarettes, and more alcohol and marijuana use. FS reported less parental monitoring, slightly

lower parental attachment, and lower parent-adolescent communication. They also reported slightly lower socioeconomic status, lower grades, and less attachment to school.

A logistical regression analysis was conducted to examine predictors of smoking status. For this analysis, only CS and FS were of interest. FS were scored zero and CS were scored 1. As illustrated in Table 2, significant effects were evidenced in coping by taking drugs, alcohol use, depression, grades, parental monitoring, and perceived availability of cigarettes. CS were more likely than FS to use drugs as a coping mechanism, to report higher levels of alcohol use and depression and lower grades than were Former Smokers. For each unit increase in using drugs to cope, the odds of being classified as a CS multiplied by 1.79. For each unit increase in alcohol use, the odds of being classified as a CS multiplied by 1.52. For each unit increase in depression, the odds of being classified as a CS multiplied by 1.59. For each unit increase in grades, the odds of being classified as a CS multiplied by .79. CS were less likely than FS to experience high levels of parental monitoring. For each unit increase in parental monitoring, the odds of being classified as a CS multiplied by .68. Finally, CS were more likely to perceive greater accessibility to cigarettes with the odds of being classified as a CS multiplied by 1.31.

Discussion

This study examines ecological variables associated with former, current and never smoking behavior among rural adolescent girls. Given that little research has focused on adolescent smoking cessation in general (Henningfield et al., 2000), the current focus on rural adolescent female smokers is a unique. Additionally, the inclusion of factors from multiple ecological levels provides a comprehensive view of the phenomenon.

The reported mean level differences in ecological variables across smoking groups suggest that their influence differs by smoking status. Consistent with previous research, NS appear to have higher scores than smokers on protective factors such as good grades (Griffin et

al., 1999; O-Byrne et al., 2002; Ritchey, Reid, & Hasse, 2001), greater participation in conventional activities (Aaron et al., 1995; Escobedo, et al., 1993; Simantov et al., 2000; Siimons-Morton et al., 1999), mental health (Griesler et al., 2002; Sarigiani et al., 1999; Wagner & Atkins, 2000), parental monitoring (Griffin et al., 2000; Lucas & Loyd, 1999), parental attachment (National Center on Addiction and Substance Abuse, 2003), parental communication (National Center on Addiction and Substance Abuse, 2003), and attachment to school (Lloyd et al., 1997; MacDonald & Wright, 2002). They also have lower scores on risk factors such as delinquency (Kandel et al., 1997; Luthar & D'Avanzo, 1999), coping by taking drugs (Byrne et al., 1995; Horn et al. 1999; National Center on Addiction and Substance Abuse, 2003; Sarigiani et al. 1999; Simantov et al. 2000), perceived availability of cigarettes (Castrucci et al., 2002; Emery et al., 1999), and alcohol and drug use (Griffin et al., 1999; O'Byrne et al., 2002; Tucker et al., 2003).

CS have the lowest scores on the protective factors and the highest scores on risk factors. FS fall between the other two groups. Several of the differences between FS and CS were consistent with previous research including FS's reports of better grades (Hu et al., 1998), lower depression (Zhu et al., 1999), less marijuana use (Ellickson et al., 2001) and parental monitoring (Skinner et al., 1985) compared to CS. Given the cross-sectional nature of the data, it is not possible to conclude a causal relationship between these factors and smoking status. It could be that ecological factors influence smoking status or that the individual's smoking status influenced the ecological factors. It could be that girls currently classified as FS were qualitatively different from the other two groups prior to smoking initiation.

Regardless of causal directorate, the factors that discriminate the three groups may be considered as useful markers to help us construct assessment and intervention efforts to simultaneously address mental health, substance abuse, and family factors that are clearly related to whether a girl begins smoking and is able to quit. Several factors were related to increased

odds of being a FS. These include better coping skills and less depression, higher grades, greater parental monitoring, and less availability of cigarettes. Targeting these factors as part of community-wide intervention efforts may be particularly useful for adolescent girls. For example, girls could be given greater access to mental health services or be provided services tailored to issues of importance to adolescent females. Interventions, for example, might focus on issues of affiliation (e.g. peer intervention or social influence models) as a means of addressing or preventing depression and drug use (O'Donnell, Hawkins, Catalano, Abbott, & Day, 1995; Santi, Cargo, Brown, Best, & Cameron, 1994). School-based mental health services have been shown to be particularly effective for hard to reach adolescents (Juszczak, Melinkovich, & Kaplan, 2003). Such access is often an issue in rural areas of Virginia because mental health facilities are not consistently available in schools or communities (C. Matteo-Kearny, personal communication, June 25, 2003). Through parenting classes, newsletters or public service announcements, parents could be given more information about the importance of parental monitoring and strategies for providing it. Similar tactics could be used to educate community members about limiting adolescents' access to cigarettes. This is especially important given findings that adolescent girls are more likely than boys to get their cigarettes from noncommercial sources. This includes getting them from friends, or borrowing them from parents, siblings or other adults (Castrucci, Gerlach, Kaufman, & Orleans, 2002).

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Table 1: Mean Level Differences Across Smoking Groups

	Never-Smokers (n=989)	Former Smokers (n=500)	Current Smokers (n=526)
Variable	Mean (SD)	Mean (SD)	Mean (SD)
Age	3.09 ^a (1.61)	3.65 ^b (1.47)	3.73 ^b (1.42)
Dieting	.52 ^a (.50)	.52 (.50)	.59 ^b (.50)
Delinquency	.17 ^a (.26)	.31 ^b (.31)	.56 ^c (.54)
Hours in Activities	2.88 ^a (2.64)	2.35 ^b (2.62)	1.97 ^b (2.54)
Hours in Clubs	1.11 ^a (1.9)	.68 ^b (1.61)	.74 ^b (1.76)
Hours Volunteering	1.56 ^a (2.08)	1.25 ^b (1.84)	1.22 ^b (2.01)
Hours in Church	2.28 ^a (2.08)	2.03 (2.03)	1.57 ^b (2.00)
Hours Community Clubs	2.99 ^a (3.06)	2.98 ^a (3.11)	2.31 ^b (2.98)
Coping/drugs	.19 ^a (.62)	.66 ^b (.93)	2.09 ^c (1.43)
Alcohol Use	.34 ^a (.80)	.61 ^b (.94)	1.76 ^c (1.48)
Marijuana Use	.04 ^a (.30)	.20 ^b (.61)	1.09 ^c (1.46)
Depression	.26 ^a (.44)	.31 ^a (.46)	.52 ^b (.50)
Suicidal Thoughts	.13 ^a (.33)	.15 ^a (.36)	.28 ^b (.45)
Suicide Attempts	.12 ^a (.46)	.15 ^a (.48)	.35 ^b (.82)
Self-Esteem	3.16 ^a (.61)	3.14 ^a (.57)	2.91 ^b (.64)
Grades	5.40 ^a (1.48)	4.77 ^b (1.64)	4.34 ^c (1.75)
Parental Monitoring	3.07 ^a (.60)	2.81 ^b (.61)	2.45 ^c (.77)
Parent Attachment	3.57 ^a (.61)	3.46 ^b (.66)	3.21 ^c (.91)

Parent	2.27 ^a (.86)	2.13 ^b (.90)	2.09 ^b (.93)
Communication			
Socioeconomic Status	2.19 ^a (1.07)	1.92 ^b (1.06)	1.98 ^b (1.01)
Peer Pressure	1.63 (1.57)	1.47 (1.47)	1.64 (1.59)
School Attachment	1.76 ^a (.60)	1.57 ^b (.62)	1.36 ^c (.66)
Availability of			
Cigarettes	2.53 ^a (1.57)	3.30 ^b (1.08)	3.59 ^c (.79)

Note: Row means with different superscripts reflect mean differences at $p < .05$.

Table 2: Logistic Regression Model of the Probability of Smoking Status

Variable	B	SE	Exp (B)
Age	-.043	.079	.958
Dieting Behavior	.150	.209	1.16
Hours in Activities	.055	.047	1.06
Hours in Clubs	.031	.067	1.03
Hours Volunteering	.008	.059	1.00
Hours in Church	-.047	.059	.96
Hours in Community Clubs	-.045	.037	.96
Coping by taking Drugs	.581**	.097	1.79
Alcohol Frequency	.415**	.105	1.52
Marijuana Frequency	.168	.130	1.18
Depression	.465*	.235	1.59
Suicidal Thoughts	-.013	.342	.99
Suicide Attempts	.094	.223	1.10
Delinquency	-.045	.360	.96
Self-esteem	-.139	.207	.87
Grades	-.235**	.067	.79
Parental Monitoring	-.379*	.191	.68
Parent Quality	.131	.172	1.14
Parent Communication	.195	.135	1.22
Socioeconomic Status	.140	.105	1.15
Family Structure	-.124	.207	.88
Peer Pressure	.063	.076	1.07

School Attachment	.065	.188	1.07
Availability of Cigarettes	.269*	.119	1.31
-2 log likelihood	614.90		
Logistic regression X^2	234.93**		

* $p < .05$. ** $p < .001$.