

Family and Peer Influences on Smoking Behavior Among American Adolescents: An Age Trend

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Abstract:

Purpose: To study the age trend of family and peer influence on adolescent smoking behavior using a national sample.

Methods: Adolescents (N = 6,900), ages 14 through 18 years, from the 1988-89 Teenage Attitudes and Practices Survey, were selected for analyses. Data collected included measures for smoking status of the adolescent and their family and peers.

Results: Peer influence, such as the smoking status of best male/female friends, proved to be the most significant and consistent predictor across all ages, while parental influence had little effect on adolescent smoking status. Gender-specific effects were noted in the peer influence of adolescent smoking.

Conclusions: The peer influence on adolescent smoking, across ages 14 through 18 years, confirmed previous literature. However, no differential effect of family and peer influence on adolescent smoking was evident.

KEY WORDS: Adolescent smoking, Parental influence of smoking, Peer influence of smoking, Family and peer influence of smoking

Article:

The concept that the behavior of adolescents is influenced by that of their parents and peers has been documented (1-3). And among these social environmental influences a trend is observed which is characterized by a gradual shift away from parents and toward peers (3,4). Consequently, parental influence on the behavior of adolescents would be expected to decrease throughout adolescence, while the level of peer influence would increase.

This concept has been repeatedly supported by studies which find that family and peer influences are among the strongest predictors of adolescent smoking (5-11). However, only a limited number of studies have examined a possible age trend in the magnitude of family and peer influences on adolescent smoking (12,13). And within these studies the findings have been inconsistent on age-related differences between parental and peer influences. For example, cross-sectional data show some evidence of increased peer influence in conjunction with a decrease in parental influence on adolescent smoking (12,13). Conversely, longitudinal data show that across adolescence, both parental and peer influences in cigarette smoking remain significant and constant in strength (13).

These previous studies of the age trend of social environmental influences on adolescent smoking included only regional samples containing relatively small sample sizes. In 1989, as a part of the National Tobacco Surveillance Surveys, the National Center for Health Statistics conducted the Teenage Attitudes and Practices Survey (TAPS) for adolescents ages 12— 18 years (14). For the first time smoking behavior and related information were obtained from a representative sample of American adolescents. The TAPS data allows researchers to verify findings from previous smoking studies. This study examined the age trend of family and peer influences on adolescent smoking behavior using the TAPS.

Methods

Subject Selection

The TAPS sample contained 12,097 adolescents between the ages of 12 and 18 years, who resided in households interviewed for the 1988-1989 National Health Interview Survey. Approximately 82% (N = 9,965) of the total sample completed the interview. Only adolescents ages 14 to 18 years (N = 6,900) were included in the subsequent analysis because smoking prevalence increases substantially during this age span and reaches its highest prevalence by late adolescence (15,16). Moreover, the preliminary analysis of the TAPS data indicated that the smoking prevalence for ages 12 and 13 years was small (<2%).

The Taps used computer-assisted telephone interviewing for the purpose of data collection. The responses were confidential and no names of respondents were released in the data set. The information obtained from this survey included measures of smoking behavior and a series of factors related to social environmental influences (14).

Data Analysis

The odds ratio analysis examined whether family and peer factors were associated with smoking behavior, separately by age and gender (17). In addition, multivariate logistic regression was conducted in order to identify the most significant family and peer predictors in relation to smoking behavior. The dependent variable of smoking was dichotomized as current regular smoker versus never smoked. Regular smokers were defined as those who were currently smoking, had smoked in the past 30 days, and had smoked at least 100 cigarettes in their life. Former smokers and individuals with unknown smoking status were excluded, which consisted of only a small percentage of the total sample (1.45% and 0.59% respectively)

Results

Tables 1 and 2 present association (odds ratios) of adolescent smoking and family and peer smoking behavior for males and females, respectively. No systematic increase or decrease of odds ratios across the ages 14 to 18 years was evident for either males or females. Although the magnitude of odds ratios fluctuated, the strongest predictors remained strongest at each cross-section, regardless of age. For example, among males the strongest predictor was best male friend's smoking, followed by best female friend's smoking for all age levels. The odds of male adolescent's smoking were the greatest when they reported that their best three or four male and female friends were smokers. Having a steady girl friend who smoked was also significantly associated with a male adolescent's smoking across ages 14 to 18 years. The smoking behavior of an older brother was a significant factor for males at each age level except for age 14 years. Older sister and parental smoking behavior had little effect on smoking by males.

The effect of same-gender friend was apparent. For females, the strongest predictor was best female friend's smoking, followed by best male friend's smoking for all age levels. In a pattern similar to the one found for male adolescents, the odds of a female adolescent smoking were the greatest when she reported that her best three or four male and female friends were smokers. A steady boy friend who smoked was significantly associated with female adolescent's smoking across ages 14 to 18 years. Having an older sister who smoked was also significant for females at each age level. Older brothers' smoking and parental smoking status had little effect on female smoking.

Table 1. Odds Ratios(OR) of Male Smoking Behavior According to Family and Peer Influences by Age

Variable	Age (years)				
	14	15	16	17	18
Mother Smokes					
Yes vs. No	1.6	1.4	1.8	1.3	1.4
Father Smokes					
Yes vs. No	0.8	1.4	1.2	1.4	1.0
Older brother(s) smokes					
Yes vs. No	2.2	2.5*	3.1*	3.5*	2.6*
Older sister(s) smokes					
Yes vs. No	2.5	3.1	3.4	0.8	4.3*
Of four best <i>male</i> friends, how many smoke?					
1-2 vs. 0	9.5*	10.7*	5.3*	6.0*	7.3*
3-4 vs. 0	45.0*	33.5*	36.1*	24.2*	48.2*
Of four best <i>female</i> friends, how many smoke?					
1-2 vs. 0	6.6*	4.2*	5.3*	4.9*	4.3*
3-4 vs. 0	16.1*	19.1*	11.9*	10.6*	13.7*
Steady girl friend who smokes					
Yes vs. No	13.9*	13.4*	8.9*	5.8*	7.7*
When I'm older my parents won't mind if I smoke					
Agree vs. Disagree	4.7*	5.6*	6.7*	4.2*	3.3*
How do you think your best friends would feel about your smoking one or more packs of cigarettes a day					
Agree vs. Disapprove	2.0	4.3	3.6	2.6	2.8

* The odds ratio was significant, $p < .05$.

For both male and female adolescents, the perceived approval of smoking from parents was significant across all ages. The perceived approval or disapproval of smoking by best friends did not show any effect on male adolescents' smoking behavior. For females, the odds ratios of perceived best friends approval fluctuated across ages. Finally, a multivariate logistic regression with all family and peer factors as the independent variables was conducted for each age-gender category. Results indicated that the best male friend's smoking was the only significant consistent predictor of male adolescent smoking across all age levels. While for females, the best female friend's smoking was the only consistent significant factor across all age levels. No other family and peer factors were consistently predictive of adolescent smoking at all age levels.

Discussion

The smoking behavior of best friends turned out to be the strongest social environmental risk factor for both male and female adolescent smoking through-out the 14 to 18 year old age levels. This is especially so when adolescents report that three or four of their best male or female friends smoke. The effect of best same-gender friend smoking is noted. In the multivariate analysis, only best male friend's smoking was consistently predictive of male adolescent smoking, while best female friend's smoking was consistently predictive of female adolescent smoking. These findings reinforce previous literature in which peer smoking behavior is generally considered to be the major social environmental factor influencing adolescent smoking (18).

However, over this age span, the magnitude of peer influence did not increase and the parental influence did not weaken. This was not consistent with the social psychological concept that social influence is characterized by a

gradual shift away from parents and toward peers during adolescence (12,13). In fact, the influence of parental smoking on adolescents was not significant at any age level from 14 to 18 years.

The contrast of these findings with the social psychological concept may stem from two methodological issues. First, only adolescents ages 14 to 18 years were included in the study. The differential effect of family and peer influences on adolescent smoking may have occurred before the age of 14 years. An initial analysis of adolescents ages 12 through 13 years from the TAPS indicated that the smoking prevalence for these age levels was too low (<2%) to allow reliable odds ratio computations. Second, the TAPS was a cross-sectional study, which may not rule out a possible selection bias. It is believed, however, this bias may be small since the TAPS is a national representative sample with an adequate response rate (82%) (14). A previous longitudinal study found little evidence of grade differences of parental and peer influences on adolescent smoking, which was consistent with the present finding (13).

Having a steady boy/girl friend who smoked turned out to be the next most significant predictor (in addition to the best male/female friend a smoker) of adolescent smoking. This finding seemed to be consistent with previous result, which showed that smoking status of a close friend of the opposite sex was one of the strongest predictors of adolescent smoking (19). A gender difference was also evident in the influence of sibling smoking behavior. The risk of becoming a male adolescent smoker increased significantly when older brothers, but not older sisters, were smokers. On the other hand, the risk of becoming a female adolescent smoker increased significantly when older sisters, but not older brothers, were smokers.

Table 1. Odds Ratios(OR) of Male Smoking Behavior According to Family and Peer Influences by Age

Variable	Age (years)				
	14	15	16	17	18
Mother Smokes					
Yes vs. No	1.2	1.4	1.8	1.1	1.5
Father Smokes					
Yes vs. No	0.9	0.7	1.1	1.3	1.3
Older brother(s) smokes					
Yes vs. No	4.0*	2.5	1.7	2.0	1.9
Older sister(s) smokes					
Yes vs. No	3.3*	7.7*	3.3*	3.4*	3.6*
Of four best <i>male</i> friends, how many smoke?					
1-2 vs. 0	1.9	3.4*	3.4*	4.3*	4.0*
3-4 vs. 0	17.3*	14.0*	16.4*	10.5*	19.2*
Of four best <i>female</i> friends, how many smoke?					
1-2 vs. 0	5.1*	9.8*	5.5*	5.2*	5.7*
3-4 vs. 0	40.2*	26.0*	17.3*	16.3*	29.5*
Steady boy friend who smokes					
Yes vs. No	8.1*	4.6*	5.7*	5.9*	7.7*
When I'm older my parents won't mind if I smoke					
Agree vs. Disagree	3.2*	3.6*	3.2*	2.6*	2.5*
How do you think your best friends would feel about your smoking one or more packs of cigarettes a day					
Agree vs. Disapprove	14.3*	4.0*	1.9	3.6*	3.2

* The odds ratio was significant, $p < .05$.

It is interesting to note that, while parental smoking did not influence adolescent smoking, perceived smoking approval from parents was significant for both male and female adolescents at all ages. On the other hand, while smoking behavior of the best male friends, best female friends, and steady boy/girl friends were all significant, the best friend's perceived approval of smoking was not significant. The magnitude of the parental approval, however, showed no distinctive trend over the 14 to 18 year old age levels. These data provided a partial replication for a previous study (6), which found that the perceived parents support by adolescents did not decline over time. However, the same study also found that the perception of peer supportiveness increased steadily throughout the 6th to 11th grades, both cross-sectionally and longitudinally.

In conclusion, the age trend of family and peer influences on adolescent smoking was examined for the first time using a national sample. Peer influence, such as the smoking behavior of best male/female friends, proved to be the most significant and consistent predictor of adolescent smoking across all ages from -14 to 18 years, while family influences were restricted only to the smoking of older same sex siblings. These findings may be useful in the implementation of smoking prevention programs sensitive to gender and peer contexts.

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