

The Effect of Media Influence on Smoking Susceptibility in Adolescents

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Abstract

Cigarette smoking is the leading cause of preventable death in the United States. Most smokers begin smoking before age 18, so efforts to disrupt the trajectory from susceptible smoker to established smoker are critical. Although the etiology of adolescent smoking is complex, one recent body of literature has addressed the role of smoking in the movies and on television on adolescents' susceptibility to cigarette smoking. Susceptibility is a measure of willingness to try a cigarette among youth who have never puffed on a cigarette. The objective of this poster is to examine the relationship of susceptibility to smoking among middle schools students with exposure to actors using tobacco. To examine this relationship, we used a logistic regression model to regress susceptibility to smoking on exposure to actors smoking; while statistically controlling for other social influences, attitudes about the tobacco companies, and household smoking restrictions; using data from the 2008 Mississippi Youth Tobacco Survey (MS YTS). With technical assistance from the CDC, we administered the MS YTS to 3,906 public middle school student in the spring semester of 2008. Crude odds ratios indicated that middle school youth who reported heavy exposure to actors smoking were 1.85 times as likely to be susceptible to smoking as those who did not report heavy exposure. Adjusted odds ratios (AOR=1.863, p<.001) demonstrated that the risk for susceptibility persisted, even after controlling for social and contextual influences. Given the ease of prevention relative to cessation of smoking, CDC guidelines encourage efforts to reduce susceptibility or to prevent susceptible youth from experimenting with tobacco. Tobacco control efforts should strive to counterbalance the influence of actors smoking, and to advocate for the elimination of smoking in movies targeted towards teens.

Table 1 a. High School Demographics

Demographics	Statistics (%)
Gender	
Male	53.8
Female	46.2
Grade	
9 th	30.5
10 th	27.1
11 th	24.0
12 th	18.4
Race	
White	48.3
Non-White	51.7
Susceptible to Smoking	
Yes	34.7
No	65.3
Exposure to Smoking in Movies	
Most of the Time	36.5
Some of the Time, Hardly Ever, or Never	61.0

Introduction

Much of the social psychological research regarding cigarette smoking use and adolescents focuses on social influences, with an emphasis on the role of societal factors, peer groups, and social norms. A developing and persuasive body of research focuses on the effect of media, advertising, and targeted propagation of tobacco companies on youth smoking. Although the relationship of knowledge and social influence concerning smoking among adolescents is well documented, the relationship between media and youth susceptibility to initiating smoking merits further exploration.

Several studies have found a robust relationship between youth exposure to pro-tobacco media and intention to smoke. Likelihood of initiating smoking after being repeatedly exposed to pro-tobacco images and advertising has been found to be anywhere from 1.7 times as likely (Sargent et al., 2001) to 2.71 times as likely (Dalton et al., 2003). A more recent longitudinal study by Weiss and colleagues (2006) found that exposure to either TV or market pro-tobacco media increased youth susceptibility by 41.7%. This percentage increased to 56.3% with exposure to both types of media influence. Furthermore, in a study by Tickle, Hull, Sargent, Dalton, and Heatherton (2006), they applied a structural equation model to measure for exposure to media smoking on adolescent smoking intention and initiation. Their analyses found that media exposure to smoking increased identification with smokers which was directly related to a higher intention to smoke. Additionally, media exposure was associated with increased endorsement of positive expectancies about smoking which, in turn, was related to smoking susceptibility.

Our study focuses on exposure to television actors and movie actors engaging in smoking behaviors and how that exposure affects youth smoking susceptibility. Furthermore, we examined differences in adolescents at middle school age versus adolescents in high school. Guided by both theory and research, this study examines the relationship of adolescent smoking susceptibility and media influence. Based on previous research, we predict that adolescents who have been exposed to pro-tobacco advertising, television, and movies will be more susceptible than those who have not been exposed to these types of influences. Additionally, we predicted higher percentages of susceptibility among middle school youth versus high school youth.

Table 1 b. Middle School Demographics

Demographics	Statistics (%)
Gender	
Male	51.3
Female	48.7
Grade	
6 th	35.5
7 th	34.6
8 th	29.9
Race	
White	45.2
Non-White	54.8
Susceptible to Smoking	
Yes	28.4
No	71.6
Exposure to Smoking in Movies	
Most of the Time	32.5
Some of the Time, Hardly Ever, or Never	64.8

Methods

The Mississippi Youth Tobacco Survey (YTS) assesses self-reported tobacco use, exposure to secondhand smoke, knowledge and attitudes, and smoking susceptibility factors. The YTS was designed by the CDC to enhance the capabilities of states agencies to design, implement, and evaluate their statewide tobacco control program. Data was collected in the fall semester of 2007 via anonymous self-administered questionnaires. A multi-stage sample design was applied with public high schools selected with a probability proportional to enrollment size. Classrooms were chosen randomly within the selected schools and all of the students in selected classes were eligible for participation. A weighting factor was applied to each student record to adjust for non-response at the school, class, and student levels. The complex sampling package from SPSS was used to calculate standard errors for estimates and 95 percent confidence intervals. Multivariate logistic regression models were specified to examine the relationship of smoking susceptibility with youth exposure to pro-smoking media while controlling for age, grade, and race.

Four items were used to assess students' susceptibility. These questions involved peer and parental influence, which have been found to be strong indicators of adolescents' initiation of smoking and have been used by researchers to measure susceptibility. Before running analyses, we removed those students who had been shown susceptible to smoking, but had already initiated smoking or become an established smoker. Therefore, only students who had never engaged in any smoking activity was included in this susceptibility examination. This measure of susceptibility was then used in our multivariate regression models with questions regarding exposure to smoking in media advertising and actors in movies and/or television.

Results and Discussion

The overall response rate for middle school students was 63.2% (82.6% of the sampled schools participated and 76.5% of the 3,906 sampled students completed usable questionnaires.) Overall response rate for high school students was 58.0% (80.0% of the sampled schools participated and 72.5% of the 3,598 students completed usable questionnaires.) Table 1 summarizes the demographic characteristics of the sample.

We conducted a series of multivariate logistic regression models, controlling for gender, grade, and race, in order to investigate the relationship between youth susceptibility and pro-tobacco media influence. The crude and adjusted odds ratios for each risk factor are presented in Table 2.

As illustrated in Table 2, our results showed that of the middle school students who have never smoked and were highly exposed to pro-tobacco media, 36.4% were susceptible to initiating smoking as opposed to 23.6% of students who were not highly exposed to this media influence. These results point to a higher risk of susceptibility with increasing exposure to pro-tobacco media. This discrepancy was not as pronounced with high school students. Our logistic regression model indicated middle school students to be 1.86 times as likely to be susceptible to smoking after exposure to pro-tobacco media. This effect was not as robust with the high school sample; however, with those who were susceptible to initiating smoking, social value had a more powerful effect.

These findings add to the growing body of research regarding media exposure and susceptibility among adolescents, demonstrating a robust relationship between the two. This study confirmed that viewing actors on television and in movies has an influence over impressionable youth- an event that obviously precedes initiation in the trajectory of smoking behaviors. Specifically, our research has shown that younger adolescents who view higher amounts of pro-tobacco media are more highly influenced by television and movie actors when making decisions about initiating smoking.

However, our findings do merit further research into the role mediating and moderating effects on exposure to anti-tobacco media on susceptibility. Future directions the authors would like to explore is how Mississippi compares in relation to national data regarding media exposure and youth susceptibility and initiation, as well as comparing trend data in those respective areas. From a programmatic perspective, these results are important in identifying which risk factors are most important to the susceptibility of adolescents. Particularly, these findings could be implemented to further reduce the amount of pro-tobacco media young children are viewing in movies and television.

Table 2. Results

		High School	Middle School
Susceptibility	Adjusted Odds Ratio	1.32	1.86
	with Social Value	1.18	1.85

	High School		Middle School	
Media Exposure	High	Not high	High	Not high
Susceptibility	38.4%	32.5%	36.4%	23.6%

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