

Smoking Initiation and Exposure to Actors Using Tobacco

Brittany Wright, Annaliese Simms, & Robert McMillen, Ph.D.



Abstract

Cigarette smoking is the leading cause of preventable death in the United States. It is estimated that every day in the U.S. approximately 4,000 adolescents initiate cigarette smoking for the first time. Individuals typically try cigarettes for the first time before they reach adulthood, so it is important to identify risk factors for initiation of smoking for adolescents. Recent research has identified exposure to actors smoking cigarettes as one significant risk factor for initiation. In this poster, we examined the relationship between smoking initiation (defined as ever trying a cigarette, even a puff) and exposure to actors smoking in movies and television. Using a logistic regression, we controlled for several significant predictors of smoking initiation -- household smoking rules, friends who smoke, living with smokers, and attitudes about the tobacco industry. Analyses are based on 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 and 3,598 high school students in the spring semester of 2008. After examining media exposure alone, we found that middle school students were 1.94 times as likely to initiate smoking if they were heavily exposed to actors smoking in movies. This relationship persisted, even after controlling for other social value factors. Middle school students who were heavily exposed to media were 1.87 (p<.001) times as likely to initiate smoking than those students who were not. High school students were still significantly more likely to initiate smoking after heavy exposure to smoking in the media, but were less influenced than middle school students (AOR=1.55 p<.001). These findings are important considering the recent increased prevalence of smoking in the movies -- particularly movies targeting a teen audience. In 1998, several states obtained a legal settlement from the tobacco industry that included provisions to restrict tobacco advertisements in youth magazines and on billboards. These findings highlight the need for tobacco control media to counterbalance the influence of smoking in the movies and on television.

Contact Information:

Brittany Wright: brittany.wright@ssrc.msstate.edu

Annaliese Simms: annaliese.simms@ssrc.msstate.edu

Robert McMillen: robert.mcmillen@ssrc.msstate.edu

For more information please visit: www.mstobaccodata.org

Table 1. Demographics

Middle School Sample		High School Sample	
Demographics	Statistics (%)	Demographics	Statistics (%)
Gender		Gender	
Male	50.5	Male	52.5
Female	49.5	Female	47.5
Grade		Grade	
6th	33.8	9th	30.1
7th	34.0	10th	27.5
8th	32.2	11th	23.3
		12th	19.1
Race		Race	
White	45.9	White	52.7
Non-White	54.1	Non-White	47.3
Initiated Smoking		Initiated Smoking	
Yes	31.2	Yes	52.2
No	68.8	No	47.8
Exposure to Smoking in Media		Exposure to Smoking in Media	
Heavy Exposure	34.3	Heavy Exposure	37.1
Little to No Exposure	62.3	Little to No Exposure	59.7

Introduction

In recent years, many researchers have found that exposure to smoking in movies and television can predict smoking initiation in a youth sample. A number of surveys have shown that exposure to actors smoking in movies predicts the likelihood of smoking initiation, even when accounting for numerous other variables (Wills, et al., 2007; Dalton, et al., 2003). There have also been similar experimental studies that have found a causal link between smoking in movies and one's thoughts about smoking (Dal Cin, et al., 2007) and an increased self-reported likelihood of smoking (Hines, Saris & Throckmorton-Belzer, 2000). However, there are no experimental studies that examine the causal link between actual smoking initiation and media exposure, due to numerous experimental and ethical limitations. Therefore, the majority of research in this field is non-experimental.

In the past 50 years, the amount of smoking in movies has varied. It has been estimated that in 1950, there were 10.7 smoking incidents per hour in movies which declined to about 4.9 incidents in the early 1980's. When examining movies in the 2000's, however, smoking incidents rose again to 10.9 incidents per hour (Glantz, Kacirk, & McCulloch, 2004). Another study found that since 1994 smoking in movies has decreased significantly. However, this downward trend was in movies rated G, PG, or R; and not in those that are rated PG-13 which appeal to most teenage audiences (Worth, Dal Cin, & Sargent, 2006).

The perceived social value of smoking has also been examined as a risk factor of smoking initiation. Having friends who smoke has been found to be a significant predictor of whether someone smokes in previous research. It could be that these individuals place more positive social value towards smoking and may think that smoking will make them fit in better with their friends. Movies have also been found to shape and reflect an individual's social value of smoking as these individuals are more likely to identify with the characters of the movie and see smoking more positively (Wakfield, et al., 2003).

In 1998, several states obtained a legal settlement from the tobacco industry that included provisions to restrict tobacco advertisements in youth magazines and billboards and enhance tobacco prevention and cessation efforts. However, no tobacco restrictions were ever established for movies and television. Mississippi was one of the states that received this settlement. In 1998, the first Mississippi Youth Tobacco Survey (MS YTS) was administered in the state, before any of the new tobacco programs were implemented. This survey has been administered every two years since 1998 and has sought to examine the prevalence of youth tobacco use and examine any risk factors of this behavior.

In this study, we sought to add to the growing body of literature by continuing to explore the relationship between media exposure and smoking initiation. In particular, we wanted to examine whether media exposure was more influential to a middle school sample than a high school sample. We also wanted to examine whether the perceived social value of smoking influenced the predictive power of media exposure. We used data from the MS YTS to examine media exposure and other influential risk factors and their predictive power of smoking initiation.

Hypotheses

Hypothesis 1: Based on previous research, we predicted that individuals who were heavily exposed to smoking in the media would be more likely to initiate smoking than those who are not. We expected for media exposure to continue to be a significant predictor of smoking initiation even after controlling for other risk factors.

Hypothesis 2: We also predicted that middle school students would be more influenced by media than high school students, and thus be more likely to initiate smoking after heavy exposure to smoking in television and movies. Our research in this area is exploratory, as much of the research examining psychosocial and biological factors has varied in regards to the trajectory of smoking.

Methods

Procedure

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. The MS YTS was administered to young people in grades 6 through 12 in public schools around the state. Data was collected in the spring semester of 2008 via anonymous self-administered questionnaires. A multi-stage sample design was applied with public high schools and public middle 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. SPSS Complex Samples software 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 in movies with youth initiation of smoking while controlling for age, grade, race and other risk factors.

Predictor Variables

In order to examine media exposure to smoking in movies, individuals were asked "When you watch TV or go to the movies, how often do you see actors using tobacco?". Participants responded with "Most of the time", "some of the time", "hardly ever", or "never". In our analyses we were interested in those individuals who were heavily exposed to smoking in media, so we grouped those who had seen smoking in movies most of the time into one group and combined those with little or no exposure into another group.

Social value was used as a statistical control in our analyses. We examined social value using two items, "Do you think young people who smoke cigarettes have more friends" and "Do you think smoking makes young people look cool or fit in?". Participants responded on a scale of 1 (Definitely Yes) to 4 (Definitely No).

Outcome Variable

In both the high school and middle school samples, a single-item assessed whether students had initiated smoking. Participants were asked, "Have you ever smoked a cigarette, even one or two puffs?" Students who answered yes were categorized as individuals who had initiated smoking.

Table 2. Logistic Regressions

Sample	Risk Factor	Crude Odds Ratio	P-Value	Adjusted Odds Ratio*	P-Value
High School	Heavily Exposed to Media	1.507 (1.314-1.729)	<.001	1.35 (1.33-1.82)	<.001
Middle School	Heavily Exposed to Media	1.898 (1.559-2.310)	<.001	1.943 (1.58-2.38)	<.001

* Adjusted for sex, grade, and race.

Sample	Risk Factor	Adjusted Odds Ratio*	P-Value	AOR with Social Value	P-Value
High School	Heavily Exposed to Media	1.55 (1.33-1.818)	<.001	1.49 (1.27-1.76)	<.001
Middle School	Heavily Exposed to Media	1.943 (1.284-2.881)	<.001	1.87 (1.53-2.29)	<.001

* Adjusted for sex, grade, and race.

Results and Discussion

The overall response rate for our public middle school sample was 63.2% (N=3,906). Our public high school response rate was 58.0% (N=3,598). Table 1 summarizes the demographic characteristics of our middle school sample and high school sample.

Summary

Overall, our results revealed that exposure to smoking in the media does significantly predict whether youth will initiate smoking.

Initially, we examined the relationship between heavy exposure to smoking in television and movies and smoking initiation in our youth samples while controlling for grade, gender, and race. Using a series of logistic regressions we examined this relationship and found that individuals who are heavily exposed to smoking in the media are more likely to try smoking than those who are not. In particular, it was found that middle school students who were heavily exposed to smoking in the media were nearly twice as likely to try smoking than those who were not. High school students were less influenced by smoking in media, but were still 1.5 times as likely to initiate smoking after being heavy exposure to pro-tobacco media.

Second, we examined the same relationship between media and smoking initiation while controlling for the perceived social value of smoking. It could be argued that the perceived social value of smoking would be more influential than mere exposure to smoking in the media for smoking initiation. However, the predictive power of media exposure was only weakened minimally when including these variables concluding that it was still an important risk factor for smoking initiation.

Hypothesis 1: In all of our logistic regressions, media exposure was a significant predictor of smoking initiation for our middle school and high school samples. After examining other significant risk factors including household smoking rules, friends who smoke, living with smokers, and perceived social value, media exposure was still a significant predictor of smoking initiation. These results confirm our hypothesis.

Hypothesis 2: Our second hypothesis was also confirmed. In all logistic regressions the middle school sample was more influenced by media exposure than the high school sample. However, it should be noted that media exposure was still a significant predictor of smoking initiation in our high school sample.

Implications

These findings add to the previous literature showing that media exposure to smoking does influence our youth and their decisions to initiate smoking. These findings are important from a programmatic perspective as they allow researchers to identify risk factors for smoking behavior. These findings suggest that anti-tobacco initiatives should be extended to movies and television as they are an influential factor for smoking initiation.

Caveat

One significant drawback of this study is that it is a programmatic survey which seeks to examine smoking from a behavioral perspective and not necessarily a psychological perspective. The data in this study was gathered from a previously administered survey, so we were unable to design our own questionnaires to examine these variables more effectively.

Future Directions

Further exploration of the relationship between smoking initiation and media exposure is needed. In particular, examination of potential mediator and moderator variables may add valuable knowledge to this area of research. In addition, examination of counteractive media, such as anti-smoking ads, and its relationship with pro-tobacco media may provide valuable insight into the effectiveness of anti-tobacco media.

References

Dal Cin, S., Gibson, B., Zanna, M., Shumate, R., & Fong, G. (2007, July). Smoking in movies, implicit associations of smoking with the self, and intentions to smoke. *Psychological Science*, 18(7), 559-562.

Dalton, M., Sargent, J., Beach, M., Titus-Ernstoff, L., Gibson, J., Ahern, M., et al. (2003, July). Effect of viewing smoking in movies on adolescent smoking initiation: A cohort study. *Lancet*, 362(9380), 281-285.

Glantz, S., Kacirk, K., & McCulloch, C. (2004, February). Back to the Future: Smoking in Movies in 2002 Compared With 1950 Levels. *American Journal of Public Health*, 94(2), 261-263.

Hines, D., Saris, R., & Throckmorton-Belzer, L. (2000, November). Cigarette smoking in popular films: Does it increase viewers' likelihood to smoke?. *Journal of Applied Social Psychology*, 30(11), 2246-2249.

Wills, T., Sargent, J., Stoolmiller, M., Gibbons, F., Worth, K., & Dal Cin, S. (2007, November). Movie exposure to smoking cues and adolescent smoking onset: A test for mediation through peer affiliations. *Health Psychology*, 26(6), 769-776.

Worth, K., Dal Cin, S., & Sargent, J. (2006, December). Prevalence of smoking among major movie characters: 1996-2004. *Tobacco Control: An International Journal*, 15(6), 442-446.