

Factors Affecting the Smoking Rate of Cigarettes Among Adolescents

Min-Hee Park

ABSTRACT

This study aimed to investigate the factors affecting the smoking rate of regular cigarettes among adolescents in one region of Korea. The 'smoking rate,' 'smoking experience rate,' 'current smoking rate,' and 'daily smoking rate' for cigarettes were investigated. Smoking probability was calculated according to the presence or absence of smokers in the family, presence or absence of secondhand smoke in the home, presence or absence of witnessing smoking by faculty and staff, presence or absence of secondhand smoke in the school, and experience of secondhand smoke excluding home and school. For the analysis of the results, an odds ratio was calculated using a logistic regression analysis. This study found that, having a smoker in the family, experience of secondhand smoke at home, witnessing smoking by faculty members, and experience of secondhand smoke in school were significant influencing factors.

Keywords: Adolescent, smoke, cigarette

INTRODUCTION

Adolescents are more likely to be targeted than adults by the greed to attract new consumers under the new strategy of tobacco companies [1, 2]. There is evidence that curiosity, peer pressure, and stress are the main causes of smoking among adolescents [3 4]. In addition to direct smoking, secondhand smoke can affect physical health as a result of smoking. Furthermore, it is easy for tobacco companies to encourage a habit that continues into adulthood, ultimately creating loyal customers [5, 6]. This study was conducted to prevent the start of smoking among adolescents and to find reasons for smoking cessation by investigating the effects of smoking among adolescents regarding environmental factors related to secondhand smoke exposure.

This study intends to conduct basic research to establish a youth smoking prevention policy in a local city. The specific objectives of the study are as follows:

1. To investigate the factors affecting the 'smoking experience rate'
2. To investigate the factors affecting the 'current smoking rate'
3. To investigate the factors affecting the 'daily smoking rate'

METHODS

Study design

This descriptive study aimed to identify the factors affecting cigarette smoking among adolescents in a region of Korea.

Participants and data

This data used cigarette smoking data among data from the 2021 smoking status survey conducted for adolescents in City A. A total of 26,844 individuals from 12 elementary schools, 171 middle schools, and 144 general high schools participated in the smoking survey.

This study analyzed students with different types of smoking status: 1,186 students with 'smoking experience,' 469 students who are 'current smoking,' and 254 students who are 'smoking every day.' The student survey was conducted online in a self-filling format, and the participants were surveyed voluntarily.

Study instruments

Five questions were used to investigate the factors affecting the 'smoking rate' of regular cigarettes. The participants were told to respond with either a 'yes' or 'no'.

1. Is there a 'smoker' in the family?
2. Is there any experience of 'secondhand smoke' in the home?
3. Do you have any experience witnessing smoking among school staff?
4. Do you have any experience with 'secondhand smoke' at school?
5. Have you had any experience of 'secondhand smoke' in 'public places'?

RESULTS

Factors affecting 'smoking experience rate'

As a result of the logistic regression analysis on the factors affecting 'smoking experience,' it was found that the probability of experiencing smoking was high under the following conditions: 1.752 times ($p < 0.001$) if there was a 'smoker' in the family, 1.690 times ($p < 0.001$) if there was 'secondhand smoke' in the home, 4.055 times ($p < 0.001$) if they witnessed smoking by a staff member. In the case of experiencing 'secondhand smoke' in school, participants were 4.029 times ($p < 0.001$) more likely to smoke, and when there was 'secondhand smoke' in public places, participants were 1.827 times ($p < 0.001$) as likely (Table1).

Table 1. Factors affecting smoking experience rate N=1,186		
Variables	OR	<i>p</i>
'Smokers' in the family - no	1	
'Smokers' in the family - yes	1.752	<0.001
Experience of 'secondhand smoke' in the home - no	1	
Experience of 'secondhand smoke' in the home - yes	1.690	<0.001
Experience of witnessing faculty members smoking - no	1	
Experience of witnessing faculty members smoking - yes	4.055	<0.001
Experience of 'secondhand smoke' in school - no	1	
Experience of 'secondhand smoke' in school - yes	4.029	<0.001
Experience of 'secondhand smoke' in public places - no	1	
Experience of 'secondhand smoke' in public places - yes	1.827	<0.001

Factors affecting the 'current smoking' rate

As a result of the logistic regression analysis for factors affecting the 'current smoking' rate, if there was a 'smoker' in the family the participant was 2.223 times ($p<0.001$) more likely to smoke, if there was 'secondhand smoke' in the home the participant was 2.352 times ($p<0.001$) more likely to smoke, if they 'witnessed smoking by faculty and staff' the participant was 5.396 times ($p<0.001$) more likely to smoke, and if they witnessed 'secondhand smoke' in public places the participant was 3.322 times ($p<0.001$) more likely to smoke (Table 2).

Table 2. Factors affection the current smoking rate N=469

Variables	OR	<i>p</i>
'Smokers' in the family - no	1	
'Smokers' in the family - yes	2.223	<0.001
Experience of 'secondhand smoke' in the home - no	1	
Experience of 'secondhand smoke' in the home - yes	2.352	<0.001
Experience of witnessing faculty members smoking - no	1	
Experience of witnessing faculty members smoking- yes	5.396	<0.001
Experience of 'secondhand smoke' in school - no	1	
Experience of 'secondhand smoke' in school - yes	1.675	0.140
Experience of 'secondhand smoke' in public places - no	1	
Experience of 'secondhand smoke' in public places - yes	3.322	<0.001

Factors affecting the 'daily smoking' rate

As a result of logistic regression analysis for factors affecting 'daily smoking,' if there was a 'smoker' in the family the participant was 2.221 times ($p<0.001$) more likely to smoke daily, if there was 'secondhand smoke' in the home the participant was 2.563 times ($p<0.001$) more likely to smoke daily, if the participant witnessed 'smoking by faculty and staff' they were 6.725 times ($p<0.001$) more likely to smoke daily, when there was 'secondhand smoke' in school they were 6.332 times ($p<0.001$) more likely to smoke daily, and when there was 'secondhand smoke' in public places they were 4.034 times ($p<0.001$) more likely to smoke daily (Table 3).

Table 3. Factors affecting the daily smoking rate		N=254
Variables	OR	p
'Smokers' in the family – no	1	
'Smokers' in the family - yes	2.221	<0.001
Experience of 'secondhand smoke' in the home – no	1	
Experience of 'secondhand smoke' in the home - yes	2.563	<0.001
Experience of witnessing faculty members smoking - no	1	
Experience of witnessing faculty members smoking- yes	6.725	<0.001
Experience of 'secondhand smoke' in school - no	1	
Experience of 'secondhand smoke' in school – yes	6.332	<0.001
Experience of 'secondhand smoke' at public place - no	1	
Experience of 'secondhand smoke' at public place - yes	4.034	<0.001

DISCUSSION

The results of this study confirmed that the smoking experience rate, current smoking rate, and daily smoking rate can be increased by 2–6 times (or more) if one experiences secondhand smoke and witnesses others smoking. This is similar to the results which find that exposure to secondhand smoke at home, school, or in public places can cause physical and psychological harm to adolescents [7, 8, 9]. Ultimately, prevention of secondhand smoke at home, school, and in the community can reduce the smoking rate among adolescents; thus, there is a call for more active awareness and policy interventions.

Reference

1. Lapierre MA, Fleming-Milici F, Rozendaal E, McAlister AR, Castonguay J. The Effect of Advertising on Children and Adolescents. *Pediatrics*. 2017;140(Suppl 2):S152-S156. doi: 10.1542/peds.2016-1758V.
2. Qian ZJ, Hill MJ, Ramamurthi D, Jackler RK. Promoting Tobacco Use Among Students: The U.S. Smokeless Tobacco Company College Marketing Program. *Laryngoscope*. 2021;131(6):E1860-E1872. doi: 10.1002/lary.29265.
3. Siqueira LM; COMMITTEE ON SUBSTANCE USE AND PREVENTION. Nicotine and Tobacco as Substances of Abuse in Children and Adolescents. *Pediatrics*. 2017;139(1):e20163436. doi: 10.1542/peds.2016-3436.
4. Wang TW, Gentzke AS, Creamer MR, Cullen KA, Holder-Hayes E, Sawdey MD, Anic GM, Portnoy DB, Hu S, Homa DM, Jamal A, Neff LJ. Tobacco Product Use and Associated Factors Among Middle and High School Students - United States, 2019. *MMWR Surveill Summ*. 2019;68(12):1-22. doi: 10.15585/mmwr.ss6812a1.
5. Villanti AC, Niaura RS, Abrams DB, Mermelstein R. Preventing Smoking Progression in Young Adults: the Concept of Prevescalation. *Prev Sci*. 2019;20(3):377-384. doi: 10.1007/s11121-018-0880-y
6. Huntington-Moskos L, Rayens MK, Hall LA, Hahn EJ. The Peer and Family Smoking Index: A Valid Measure of Secondhand Smoke Exposure in Adolescents. *J Adolesc Health*. 2016;58(4):446-450. doi: 10.1016/j.jadohealth.
7. Been JV, Lavery AA, Tsampi A, Filippidis FT. European progress in working towards a tobacco-free generation. *Eur J Pediatr*. 2021;180(12):3423-3431. doi: 10.1007/s00431-021-04116-w.
8. Wang MP, Ho SY, Lo WS, Lam TH. Secondhand smoke exposure and health services use among adolescent current smokers. *PLoS One*. 2013;8(5):e64322. doi: 10.1371/journal.pone.0064322.

9. Clawson AH, McQuaid EL, Dunsiger S, Bartlett K, Borrelli B. The longitudinal, bidirectional relationships between parent reports of child secondhand smoke exposure and child smoking trajectories. *J Behav Med.* 2018;41(2):221-231. doi: 10.1007/s108