



Association between Multicultural Families and Smoking Risks in Korean Adolescents

Minah Park a,b, Seung Hoon Kim a,b , Fatima Nari a,b, Bich Na Jang a,b, Eun-Cheol Park b,c*

^aDepartment of Public Health, Graduate School, Yonsei University

^bInstitute of Health Services Research, Yonsei University

^cDepartment of Preventive Medicine, Yonsei University College of Medicine

INTRODUCTION

- Due to globalization, increased interracial marriage has resulted in a new type of family structure called a multicultural family meaning unlike previous family forms, members of these families have different cultural backgrounds.
- As a result, issues that stem from more fundamental differences, such as race and language, are being addressed along with existing family challenges.
- Adolescents with a multicultural background tend to face many difficult challenges which increases stress and the likelihood of smoking. Adolescent smoking often extends into adulthood which may lead to greater social harm.
- Multicultural adolescents in Korea are more vulnerable than native Korean adolescents are, due to prejudices such as skin color or a lack of Korean skills. To ensure a stable multicultural society, necessary policies and intervention strategies must be established.
- Thus, the purpose of this study was to investigate whether there was a significant association between parents’ country of birth and smoking status in a nationally representative sample of South Korean adolescents.

MATERIALS AND METHODS

- Data source:** Data from a Korea Youth Risk Behavior Web-based survey from 2016–2019 was used in this study
- Study population:** Our study was carried out on data derived were from 163, 845 individuals between 7th to 12th grade students after exclusion of those with missing values.
- Dependent variables:** The dependent variable that was used was smoking status. Participants were asked the question “Have you ever smoked one or two regular cigarettes?” with response options of Yes or No.
- Interesting variables:** The variable of interest in this study was the type of family. Based upon the answer given, participants were divided into four family types: Korean mother-foreign father, Korean father-foreign mother, both foreign parents, and both Korean parents. In the second stage of analysis, individuals were asked “What country were your parents born in?” with the response option as one of 10 countries, which included Korea, China, Vietnam, Philippines, Japan, Mongolia, Thailand, Cambodia, Russia, and Uzbekistan.
- Covariates:** Sociodemographic and health-related characteristics were all included as control variables. General characteristics included: gender, grade, academic grades, mother’s education level, father’s education level, economic situation. Health-related variables included: alcohol use, depression, suicide ideation.
- Statistical analysis:** The covariates were compared using the chi-squared test to confirm the association. Multiple logistic regression analysis was used to evaluate the association between a multicultural family and smoking. Model fitting was performed using the PROC SURVEYLOGISTIC procedure and applied weight procedures, clusters, and stata. The data were analyzed from 7th to 12th grade students and then stratified by sex by using SAS 9.4 (SAS Institute Inc; Cary, North Carolina).

RESULTS

Table 1. General characteristics of study subjects

	Smoking							
	Male (n=80,600)				Female(n=83,245)			
	Yes	No	Yes	No	Yes	No	Yes	No
Total(n=163,845)	16,131	(20.0)	64,469	(80.0)	5,574	(6.7)	77,671	(93.3)
Family Type								
Korean mother-foreign father	16	(19.8)	65	(80.2)	9	(10.7)	75	(89.3)
Korean father-foreign mother	127	(20.2)	502	(79.8)	61	(8.0)	701	(92.0)
Both Foreign parents	55	(36.9)	94	(63.1)	35	(26.9)	95	(73.1)
Both Korean parents	15,933	(20.0)	63,808	(80.0)	5,469	(6.6)	76,800	(93.4)

- Table 1 are the results of univariate analyses that examined the association between smoking habits and the four family types and each variable by sex.
- Among the 163,845 participants, 80,600 were male and 83,245 were female. Smoking among males was three times higher than among females (19.2% vs 6.8%). When both parents were born overseas, participants’ smoking rate was significantly higher than the average (36.9% vs 26.9%).

Table 2. Associations between Smoking and Subject Demographics

Variables	Smoking			
	Male		Female	
	OR	95% CI	OR	95% CI
Family Type				
Korean mother-foreign father	1.13	(0.55 - 2.31)	3.22	(1.38 - 7.53)
Korean father-foreign mother	1.00	(0.78 - 1.29)	1.44	(1.02 - 2.03)
Both Foreign parents	2.75	(1.79 - 4.12)	4.63	(2.70 - 7.92)
Both Korean parents	1.00		1.00	

- Table 2 are the logistic regression results stratified by sex for the association between multicultural families and smoking for all variables.
- When both parents were born abroad, both males and female adolescents had increased odds of smoking (male: OR 2.57 CI 1.79–4.12, female: OR 4.63 CI 2.70–7.92).

Variables	Smoking						
	Multicultural Family						
	Both Korean Parents	Korean mother-Foreign father		Korean father-Foreign mother		Both Foreign Parents	
	OR	OR	95% CI	OR	95% CI	OR	95% CI
Male							
Economic Situation							
Good	1.00	1.29	(0.52 - 3.16)	0.81	(0.45 - 1.46)	1.80	(1.00 - 3.25)
Average	1.00	0.85	(0.18 - 4.01)	1.07	(0.74 - 1.55)	1.73	(0.64 - 4.66)
Bad	1.00	1.26	(0.36 - 4.40)	1.06	(0.65 - 1.72)	5.95	(2.56 - 13.80)
Grade							
Good	1.00	0.98	(0.32 - 2.93)	1.13	(0.70 - 1.83)	4.17	(2.40 - 7.24)
Average	1.00	2.71	(0.71 - 10.29)	1.28	(0.81 - 2.03)	0.81	(0.30 - 2.19)
Bad	1.00	0.86	(0.32 - 2.29)	0.77	(0.51 - 1.15)	2.55	(1.11 - 5.82)
Alcohol Use							
Yes	1.00	1.10	(0.46 - 2.60)	1.04	(0.77 - 1.41)	3.31	(1.93 - 5.68)
No	1.00	1.15	(0.35 - 3.37)	0.90	(0.56 - 1.44)	1.91	(0.90 - 4.04)
Depression							
Yes	1.00	2.59	(0.81 - 8.27)	1.29	(0.81 - 2.08)	2.63	(1.36 - 5.09)
No	1.00	0.72	(0.28 - 1.87)	0.91	(0.66 - 1.25)	2.73	(1.61 - 4.64)
Suicide Ideation							
Yes	1.00	1.73	(0.29 - 10.23)	1.87	(0.96 - 3.62)	4.15	(1.55 - 11.07)
No	1.00	0.99	(0.45 - 2.17)	0.91	(0.69 - 1.20)	2.31	(1.43 - 3.73)

RESULTS

Female							
Economic Situation							
Good	1.00	1.74	(0.50 - 6.02)	2.72	(1.45 - 5.10)	3.97	(1.51 - 10.46)
Average	1.00	1.81	(0.33 - 9.75)	1.66	(1.04 - 2.64)	1.16	(0.40 - 3.32)
Bad	1.00	11.95	(1.75 - 81.51)	0.75	(0.41 - 1.37)	12.05	(5.10 - 28.42)
Grade							
Good	1.00	0.17	(0.02 - 1.36)	1.96	(1.01 - 3.78)	6.79	(3.38 - 13.65)
Average	1.00	8.66	(1.67 - 44.94)	0.88	(0.40 - 1.90)	2.94	(0.94 - 9.13)
Bad	1.00	5.24	(1.52 - 18.01)	1.37	(0.87 - 2.17)	2.44	(0.80 - 7.46)
Alcohol Use							
Yes	1.00	2.36	(1.00 - 5.57)	1.53	(1.04 - 2.26)	5.07	(2.63 - 9.76)
No	1.00	5.79	(1.51 - 22.35)	1.05	(0.47 - 2.36)	3.67	(1.17 - 11.51)
Depression							
Yes	1.00	2.84	(1.10 - 7.35)	1.01	(0.64 - 1.60)	4.52	(2.29 - 8.92)
No	1.00	3.59	(0.96 - 13.36)	1.91	(1.18 - 3.11)	4.53	(2.19 - 9.37)
Suicide Ideation							
Yes	1.00	3.84	(0.92 - 15.97)	1.31	(0.76 - 2.26)	4.89	(1.92 - 12.42)
No	1.00	2.76	(0.96 - 7.97)	1.48	(0.96 - 2.27)	4.39	(2.42 - 7.96)

- Table 3 are the logistic regression results for the subgroup analysis stratified by the independent variables. When both parents were born overseas, both males and females adolescents had increased odds of smoking when there was alcohol use, they were in a bad economic situation (male: OR 5.95 CI 2.56–13.80, female: OR 12.05 CI 5.10–28.42), had good grades (male: OR 4.17 CI 2.40–7.24, female: OR 6.79 CI 3.37–13.65), and indication of both depression and suicide ideation.

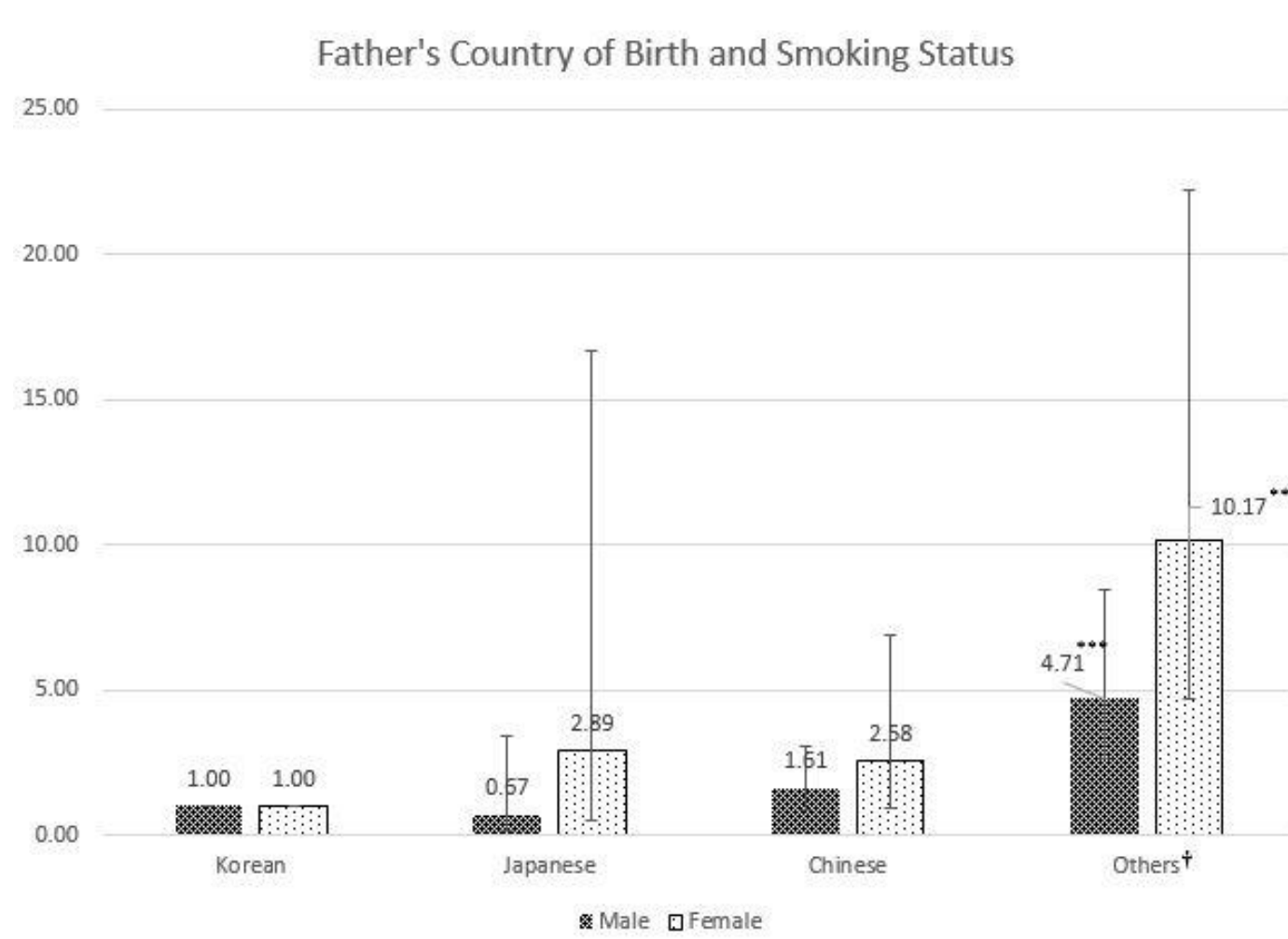


Figure 1-1: Interesting subgroup analysis of the association between Fathers' Country of Birth and Smoking Status
* P<0.05 ** P<0.01 *** P<0.001
† Countries including Vietnam, Philippines, Mongolia, Thailand, Cambodia, Russia and Uzbekistan

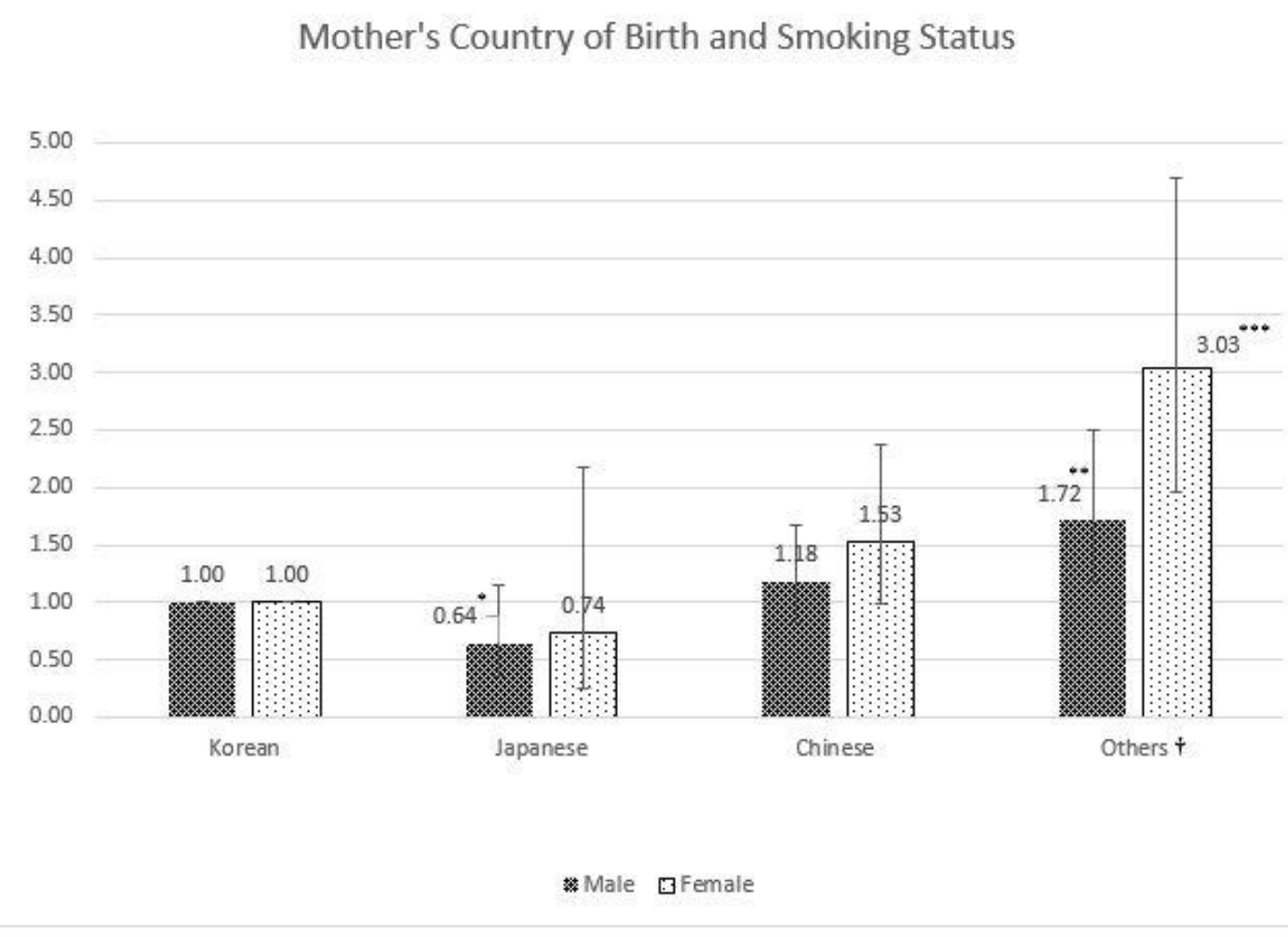


Figure 1-2: Interesting subgroup analysis of the association between Mothers' Country of Birth and Smoking Status
* P<0.05 ** P<0.01 *** P<0.001
† Countries including Vietnam, Philippines, Mongolia, Thailand, Cambodia, Russia and Uzbekistan

- Figure 1-1 are the results based upon the father’s country of birth and adolescents’ smoking status. Among both females and males, respondents whose father was born in the ‘Others’ group were more likely to have increased odds of smoking
- Figure 1-2 are the results based upon the mother’s country of birth and adolescents’ smoking status. In both females and males, respondents whose mother was born in the ‘Others’ group were more likely to have increased odds of smoking (male: OR 1.72, female: OR 3.03) (P<0.001).

DISCUSSION

- Our results indicated that when females had a multicultural background, they had increased odds of smoking. Males only had increased odds of smoking when both parents were foreigners.

- Regardless of gender, there is a significantly higher rate of smoking among 8th graders. The reason could be that young adolescents are likely to be influenced by friends. As peer networks and their influence have been identified as very important for both engaging in and abstaining from risk-taking behaviors. For multicultural adolescents, they tended to engage in more wrongdoings than those in mono-cultural households and smoking was no exception.

- Children with immigrant backgrounds were more likely to experience depression and suicide ideation as they tend to face conflicts with self-identity and values. Also, discrimination based upon skin color, or being treated as an outcast, is a common experience for multicultural children. These factors can affect the mental health of adolescents, which is closely linked to smoking issues

- Multicultural adolescents who had a foreign-born mother from a lower income country had a higher risk of smoking than native Korean adolescents due to reasons, such as being employed in 3D jobs, discrimination. Also, depending on the mother’s country of origin, the relationship between the child and parent differs. In a recent study, children with parents from Southeast Asia exhibited relatively low levels of harmony in family life and attachment to their parents, while children with parents from Japan showed the opposite and exhibited pride in their parents.

- There were several limitations in our study. First, it is a cross-sectional survey. Causalities could not be clearly confirmed. Second, the data were self-reported by the participants. It is possible that the response did not match the actual smoking status. Third, KYRBWS included only Asian countries. Western countries should be considered in future studies.

- Despite the limitations, this study also has its strengths. First, this study used the most recent, multistage, national stratified collected data. Therefore, the results are representative of adolescents in South Korea. Second, by dividing participants by family type, this study offers new insights into the association between parents’ country of birth and adolescent smoking status.

CONCLUSION

- There was a correlation between the parents’ country of birth and adolescent smoking status compared to adolescents whose parents were both native Koreans.
- When both parents were born outside of Korea and when the mother’s country of birth was a developing country, the likelihood of smoking increased.
- Necessary government policies and interventions are needed to lower the rate of smoking among multicultural adolescents in South Korea.