

Adolescent health brief

Family Influences, Acculturation, and the Prevalence of Tobacco Smoking Among Asian Youth in New Zealand: Findings from a National Survey

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Abstract

The associations among family factors, acculturation, and the risk of regular smoking among Asian youth were investigated in a nationally representative survey in New Zealand. The strong relationships between protective family factors and lower risks of smoking were not attenuated in the presence of indicators suggestive of acculturation. © 2008 Society for Adolescent Medicine. All rights reserved.

Keywords:

Smoking; Asian youth; Family; Acculturation

There is considerable evidence regarding the protective influences of families on youth smoking in many settings, with Asian countries being no exception [1–3]. Less clear, however, is the influence of families on smoking among young Asians residing in Western countries, particularly in the context of acculturation, which may influence patterns of socialization in families as well as parenting practices. Indeed, there is evidence that acculturation—the process whereby immigrants evolve and retain elements of their own culture while adopting values and behaviors characteristic of the dominant group [4]—increases youth smoking rates among Asians living in Western countries [5]. This study investigated the relative and combined influences of family factors and acculturation on smoking among Asian youth in New Zealand.

Methods

Setting and study sample

Youth2000 was a nationally representative computer-assisted health survey of secondary school students, the methodology of which has been reported elsewhere [6]. In brief, 133 schools were randomly selected from all 389 New Zealand schools with more than 50 students enrolled in Years 9–13 (ages 12–18 years). The students in the survey represented 4% of the study population in 2001. The socio-demographic profile of the 922 Asian students participating in this survey has been described [7]. The institutional ethics review board approved the study, and all participating schools and students provided written informed consent.

Measures

The primary outcome of interest was whether students smoked at least weekly. The family influences of interest included: parental use of tobacco in the home, whether parents would be upset if the student smoked cigarettes,

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Table 1
Associations among family factors, acculturation, and smoking in Asian youth in New Zealand (NZ)

	Total group	Smoke at least weekly		OR*	95% CI	p Value
	N	N	%			
Parental tobacco use and attitudes						
Parents smoke in home						
Yes	204	41	20.1%	1.00	—	—
No	568	45	7.9%	.32	(.21–.49)	<.0001
Parents upset if their children used cigarettes/tobacco						
No	163	42	25.8%	1.00	—	—
Yes	600	43	7.2%	.20	(.12–.34)	<.0001
Family relationship measures						
Relationship with family						
Getting on with family is causing problems	66	13	19.7%	1.00	—	—
Neither good or bad	282	39	13.8%	.65	(.34–1.23)	
Happy about how you get on	421	35	8.3%	.35	(.16–.80)	.03
How much do you feel your family pays attention to you?						
Not at all/A little	69	14	20%	1.00	—	—
Some/A lot	703	72	10%	.37	(.17–.80)	.01
Family cares about your feelings						
Not at all/A little	180	56	31%	1.0	—	—
Some/A lot	587	28	5%	.42	(.24–.73)	.002
How much fun do you and your family have together?						
Not at all/A little	180	31	17%	1.00	—	—
Some/A lot	595	54	9%	.45	(.26–.78)	.005
Family understands you						
Not at all/A little	273	38	13.9%	1.00	—	—
Some/A lot	499	46	9.2%	.56	(.34–.92)	.02
Always have time with parents						
No	288	51	18%	1.00	—	—
Yes	485	36	7%	.40	(.27–.61)	<.0001
How much does your family expect of you?						
Not much or nothing	38	8	21.1%	1.00	—	—
Some	148	12	8.1%	.29	(.11–.75)	
A lot	460	45	9.8%	.34	(.14–.82)	
Too much	125	22	17.6%	.77	(.30–1.96)	.003
Family want to know who you are with and where						
Sometimes/Hardly Ever/Never	119	25	21.0%	1.00	—	—
Always/Usually	658	62	9.4%	.35	(.18–.66)	.001
Live with both parents						
No	214	36	16.8%	1.00	—	—
Yes	563	50	8.9%	.50	(.32–.79)	.003
Acculturation measures						
Self-identified ethnicity						
Asian/non-Asian ethnic identity	332	58	17.5%	1.00	—	—
Asian ethnic identity only	448	29	6.5%	.28	(.19–.42)	<.0001
Born in NZ						
Yes	283	48	17.0%	1.00	—	—
No	497	39	7.8%	.33	(.21–.51)	<.0001
Age at arrival in NZ						
NZ-born	283	48	17.0%	1.00	—	—
0–4 years old	102	13	12.7%	.79	(.34–1.38)	
5–9 years old	106	2	1.9%	.10	(.02–.43)	
10–14 years old	207	15	7.2%	.31	(.18–.52)	
15–18 years old	75	9	12.0%	.35	(.15–.78)	<.0001
Main language at home						
English	377	56	14.9%	1.0	—	—
Other than English	401	31	7.7%	.34	(.21–.56)	<.0001

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Table 1
Continued

	Total group	Smoke at least weekly		OR*	95% CI	p Value
	N	N	%			
Family celebrates Pakeha/NZ European special activities/traditions						
A lot	208	33	15.9%	1.00	—	—
Some	329	34	10.3%	.57	(.37–.88)	
Not many/None	238	20	8.4%	.42	(.22–.81)	.007
Comfort in Pakeha/NZ European social surroundings						
Uncomfortable	193	30	15.5%	1.00	—	—
Comfortable	574	55	9.6%	.53	(.35–.80)	.003

CI = confidence interval; OR = odds ratio.

* Adjusted for gender, age, decile group, and cluster effects.

family functioning, expectations, and the quality of family relationships.

The indicators of acculturation used in this analysis reflected key domains explored in research on acculturation [8]. These domains included self-identified ethnicity (sole Asian or otherwise), country of birth (New Zealand or otherwise), length of time living in New Zealand, main language at home, participation in New Zealand European traditional activities, and comfort levels in New Zealand European social settings.

Statistical analysis

Using SAS version 9.1 (SAS Institute, Cary, NC), we analyzed the associations among family factors and acculturation (independent variables) and youth smoking. Logistic regression models adjusted for the putative confounding variables, age, gender, and school decile (a measure of socioeconomic status, with decile 1 schools having the highest level of disadvantage and decile 10 the lowest). The interactions between gender and the final main effects were examined to identify any differential effects by gender; however none were identified as adding significant information to the model. The final model examined the concurrent effects of family factors and acculturation, adjusting for potential confounders. Given the cluster sampling design with unequal probabilities of selection, the data were weighted and the variance of effect estimates was adjusted to allow for correlated data from the same school.

Results

The questions on cigarette smoking were answered by 85% (780/922) of Asian students. Of these, 57% identified themselves as being solely Asian, whereas 43% identified with Asian and non-Asian ethnic groups. A total of 64% were born overseas. Weekly smoking was reported by 11% of respondents (boys 13%; girls 10%).

Individual effects of family and acculturation factors on smoking

In analyses adjusted for gender, age, school decile and cluster effects, students who reported that their parents did not smoke at home, that their parents would be upset about their children smoking, having positive relationships with their families, having families who had expectations perceived to be reasonable, having parents who wanted to know their children's whereabouts, and living with both parents were significantly less likely to smoke at least weekly than students reporting the converse (Table 1).

Students who self-identified as being of Asian ethnicity only (compared with those also identifying with other ethnicities) and having a main language at home other than English (compared with English) were significantly less likely to smoke weekly. In contrast, longer length of residency in New Zealand and celebration of New Zealand European traditional activities were factors associated with a greater likelihood of weekly smoking. Students who reported being uncomfortable (as opposed to comfortable) in New Zealand European social contexts were also more likely to smoke weekly.

Joint effects of family and acculturation factors on smoking

When the individual family factors were included in a single model, having parents who disapproved of their children smoking, parents who did not use tobacco at home, always having time with parents, and having a family that cared about the respondent's feelings were associated with significantly lower risks of smoking (Table 2, Model 1).

Model 2 examined the relationship between the family factors and the risk of smoking when factors indicative of acculturation that remained significant when considered as a group were also added to Model 1. The protective effects related to youth smoking associated with time with family, having parents who did not smoke, and having parents who

Table 2

Multiple logistic regression models examining the joint effects of family and acculturation factors on the risk of smoking among Asian youth in New Zealand (NZ)

		Family Model 1			Family and acculturation Model 2		
		OR ^a	95% CI	<i>p</i> Value	OR ^a	95% CI	<i>p</i> Value
Parental tobacco use and attitudes							
Parents upset if use cigarettes/tobacco	No	1.00	—		1.00	—	
	Yes	.20	(.11–.35)	<.0001	.19	(.11–.35)	<.0001
Parents smoke in home	Yes	1.00	—		1.00	—	
	No	.39	(.23–.64)	.0002	.42	(.24–.73)	.003
Family relationship measures							
Always have time with parents	No	1.00	—		1.00	—	
	Yes	.50	(.30–.84)	.008	.47	(.29–.77)	.003
Family cares about your feelings	Not at all/A little	1.00	—		1.00	—	
	Some/A lot	.47	(.26–.86)	.01	.53	(.27–1.02)	.06
Acculturation measures							
Self-identified ethnicity	Asian/non-Asian ethnic identity				1.00	—	
	Asian ethnic identity only				.55	(.24–.94)	.03
Comfort in NZ European social surroundings	Uncomfortable				1.00	—	
	Comfortable				.43	(.24–.74)	.003
Age at arrival in NZ	NZ-born				1.00	—	
	0–4 years old				1.23	(.52–2.96)	
	5–9 years old				.17	(.03–.92)	
	10–14 years old				.44	(.22–.87)	
	15–18 years old				.30	(.11–.88)	.008

^a Adjusted for gender, age, decile group, and cluster effects and other variables in the model

disapproved of the student smoking remained highly significant, with minimal attenuation in the effect sizes in the presence of acculturation.

Discussion

This study of secondary school students in New Zealand reveals that migration and adoption of mainstream cultural practices did not attenuate the strength of protective family factors associated with significantly reduced risks of regular smoking among Asian youth. To our knowledge, this is the first national study to examine the collective and relative influences of parental factors and acculturation on the risk of smoking among Asian youth in a western country. Although the findings are consistent with previous studies of Asian youth smoking with regard to the protective family-related factors [1–3] and the risks of acculturation [5], discomfort in New Zealand European social settings was associated with higher levels of smoking. This may reflect the complex multidimensional relationships among assimilation, integration, separation, and marginalization [4].

The findings must be interpreted with several limitations in mind. We cannot describe the temporal pathways among the factors examined because of the cross-sectional design or exclude the potential for residual confounding. Although we relied on self-reported data, the anonymous innovative computer-assisted format of this survey was designed to minimize the risk of socially desirable but inaccurate responses [9]. The survey excluded nonresident (international) students, students

with major difficulties in English (groups that may be less acculturated), and students who were not at school and therefore more likely to engage in risky health behaviors. The potentially opposing impact of these selection biases on the overall associations of interest is unclear.

In conclusion, positive family influences, even in the presence of acculturation, provide an important impetus and direction for tobacco control programs among Asian youth focusing on parents and family factors together with traditional cultural values [10]. Importantly, these are also consistent with widely accepted recommendations for positive parenting practices in western society.

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References

- [1] Scragg R, Laugesen M, Robinson E. Parental smoking and related behaviours influence adolescent tobacco smoking: Results from the

- 2001 New Zealand national survey of 4th form students. *N Z Med J* 2003;116:1187.
- [2] Wen CP, Tsai SP, Cheng TY, et al. Role of parents and peers in influencing the smoking status of high school students in Taiwan. *Tob Control* 2005;14(Suppl 1):i10–5.
- [3] Trinidad D, Chou C-P, Unger J, et al. Family harmony as a protective factor against adolescent tobacco and alcohol use in Wuhan, China. *Subst Use Misuse* 2003;38:1159–71.
- [4] Berry J. Conceptual approaches to acculturation. In: Chun KM, Balls Organista P, Martin eds. *Acculturation: Advances in Theory, Measurement, and Applied Research*. Washington, DC: American Psychological Association; 2002:17–38.
- [5] Ma GX, Tan Y, Toubbeh J, et al. Acculturation and smoking behavior in Asian-American populations. *Health Educ Res* 2004; 19:615–25.
- [6] Adolescent Health Research Group. A health profile of New Zealand youth who attend secondary school. *N Z Med J* 2003;116:1171.
- [7] Rasanathan K, Ameratunga S, Chen J, et al. A health profile of young Asian New Zealanders who attend secondary school: Findings from Youth2000 [Online]. Available at: <http://www.youth2000.ac.nz/asian.html> Accessed February 21, 2007.
- [8] Chun KM, Balls Organista P, Martin G, eds. *Acculturation: Advances in Theory, Measurement, and Applied Research*. Washington, DC: American Psychological Association; 2002.
- [9] Watson P, Denny S, Adair V, et al. Adolescents' perceptions of a health survey using multimedia computer-assisted self-administered interviews. *Aust N Z J Public Health* 2001;25:520–4.
- [10] Chen X, Unger J. Hazards of initiation among Asian American and non-Asian adolescents in California: A survival model analysis. *Prev Med* 1999;28:589–99.