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Effects of Family Functioning and Self-Image on Adolescent Smoking Initiation among Asian-American Subgroups

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Abstract:

Purpose: This study examined differences in smoking prevalence and differences in associations between family functioning, self-image and adolescent smoking behavior among four Asian-American subgroups.

Methods: Statistical analyses were conducted on responses about their smoking behaviors from 1139 students who self-identified as Chinese-Americans, Filipino-Americans, Korean-Americans, and Vietnamese-Americans.

Results: Significant differences in the prevalence of ever-tried smoking and 30-day smoking were found across subgroups, but there were no overall gender differences. Korean-American adolescents reported the highest lifetime smoking and 30-day smoking rates, followed by Vietnamese- and Filipino-Americans. Chinese-Americans reported the lowest smoking rates. There were also differences in the associations between smoking and family functioning and self-image across the four subgroups. High family functioning was inversely associated with smoking for Chinese- and Korean-American adolescents, but not for Filipino- and Vietnamese-Americans. On the other hand, high self-image was associated with decreased risk of smoking for Filipino- and Vietnamese-Americans, but not for the other two subgroups.

Conclusion: Findings of this study demonstrate that family functioning and self-image varied across Asian-American subgroups. This suggests the need to understand etiological differences between the groups as well as potential implications for prevention cessation programs.

Keywords: Adolescent smoking; Asian-American subgroups; Family functioning; Self-image

The onset of tobacco use occurs primarily in early adolescence. Factors associated with adolescent smoking initiation, such as acculturation, peer influence, family functioning, self-image, and media exposure, operate differently across ethnic groups [1–5]. However, few studies have gone beyond broad racial classifications to explore subgroup differences in factors contributing to smoking onset [6–10]. The category of "Asian-American" encompasses many census-defined ethnic subgroups, each with its own unique cultural and family orientation, immigration history to the United States, and social and economic system. These variations might well influence smoking onset by affecting family functioning and the child's self-image [1,11,12]. In the current study, we explore these factors in disaggregated samples of ethnic Asian-American adolescents.

Adolescent smoking rates differ among Asian-American subgroups, with Filipinos and Koreans showing the

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highest rates of both lifetime smoking and 30-day smoking [9,13,14]. Chinese have the lowest rates, and Vietnamese are in the middle [9,15,16]. These studies also examined the effect of acculturation level on smoking initiation among Asian-American adolescents. Results of these studies are inconsistent in that some studies suggested that acculturation increased the risk of smoking [3,5], whereas others indicated that acculturation did not [15,16]. However, little is known about the effects of family functioning and self-image on smoking among Asian-American adolescents, particularly among subgroups, although evidence suggests such effects among other ethnic populations [1,17,18].

Family functioning and adolescent smoking

Intrafamilial processes have consistently been found to be important predictors of adolescent problem behaviors, including smoking and other substance use [19–21]. Dysfunctional family structure, inadequate parenting skills, and lack of parental attention are strongly associated with the adolescent's selection of substance-using friends and with the tendency to experiment. Youth who spend less time and have less affectionate relationships with their parents are more likely to initiate substance use [22,23]. Studies by Sussman [24,25] found that high-risk adolescents were more likely to "party," to engage in fewer family activities, and to keep company with those who smoke. Healthy parent-child relationships, monitoring the child's whereabouts, and participating in school activities decrease the likelihood of substance use [4,21].

Communication and cohesion within the family have been considered as protective factors against adolescent smoking [17,18]. Adolescent substance use has been shown to be negatively associated with adolescents' perceptions of sharing feelings within the family, with the freedom to voice opinions, and with comfort in talking openly with parents about problems [17,26,27]. Adolescents may become frustrated if they perceive that such communication is impossible; they may react by minimizing their interaction with parents in favor of interaction with peers. In such cases, parents' opinions about substance use may hold little sway, because the adolescent does not see the parent as a person who can engage in mutual dialogue [26,28].

Previous research indicates that Asian-American families tend to be more control oriented, more "interdependent" (i.e., less encouraging of individual autonomy) and less emotionally expressive than Euro-American families [29–31]. However, despite some shared traditional values, Asian-American families may function quite differently across subgroups. Perhaps because of differences in immigration history, there are important variations in pre- and post-immigration economic status, level of acculturation, maintenance of the traditional family structure, and quality of parent-child communication [29,32,33].

Self-image and adolescent smoking

Adolescence is a time of heightened awareness of self-image and a time of experimentation with a variety of adult roles [1,12]. The motive to improve self-image, in order to maintain a positive image of self and to engage in strategic self-presentation, has been reported to be an important predictor of adolescent smoking [12,34]. Evidence from previous studies suggests that exposure to the images of models in cigarette ads promotes "positive" images of smokers. Tobacco companies have targeted adolescents with aggressive advertisements that capitalize upon this idealization. Their campaigns suggest tobacco use connotes independence and maturity and is a concomitant of fun in social situations. These themes promoting "positive" images of smokers are designed to be particularly appealing to adolescents [35,36]. Asian-American adolescents, in the process of developing their own self-image and adjusting to the new culture, may thus be drawn toward smoking as a way of enhancing self-image.

Other studies have suggested that smoking initiation occurs at times of threat to self-image, such as social transition points [34,36]. Little is known about how self-image specifically influences Asian-American smoking behavior. Besides the normal developmental issues, Asian-American adolescents, especially recent immigrants, may face additional challenges: family conflict associated with generational differences in acculturation level, poor school achievement caused by language difficulties, and lack of social connections in the new culture. Under stress, some may see smoking as a way of dealing with their threatened self-image [1,34].

The goal of this study was to examine the association between smoking initiation and family functioning and self-image among four subgroups of Asian-American adolescents: Chinese, Filipinos, Koreans and Vietnamese. We expected differences in smoking prevalence across Asian-American subgroups. We hypothesized that there would be variation in associations between smoking behaviors and family functioning among Asian-American subgroups. We also hypothesized variation in associations between smoking behaviors and self-image among the subgroups. Finally, we expected that family functioning to affect the relationship between self-image and smoking initiation; thus, we expect interactions between subgroup, family functioning, and self-image.

Methods

Sample

School selection. Because the study focuses on Asian-American subgroups, the sampling procedure was designed to select schools with large proportions of those students. Data from the Board of Education of Los Angeles were used to qualify schools; four junior high schools and six high

schools in three school districts agreed to cooperate in the study. Six of the schools were predominantly Asian, and four were ethnically diverse. Schools were considered to be predominantly Asian if: (1) at least 50% of the students were Asian-American students, *or* (2) at least 35% of the students were Asian-American, and less than 25% of the students were from a single other ethnicity. Schools were classified as ethnically diverse if they had no predominant ethnic group.

Student recruitment. All students in the participating schools were invited to participate in the study. Of the 3826 students invited to participate, 3268 (85.42%) completed the survey. Because the primary goal of the current study was to examine predictors of smoking for Asian-American adolescents across the four Asian-American subgroups, statistical analyses were conducted on responses from 1139 students who self-identified themselves as Chinese-Americans (n = 402), Filipino-Americans (n = 269), Korean-Americans (n = 198), and Vietnamese-Americans (n = 270). The sample consisted of eighth and ninth graders, with a mean age of 14.2 (SD = 1.2) years. The notion underlying selection of these two grades is that adolescents are most likely to experience stress and self-identity crisis when important aspects of self-image are threatened during social transition points, such as from junior high to high school [34,35]. Therefore, the tendency to choose behaviors that are consistent with self-image or that will enhance self-image becomes stronger. Studies have suggested that smoking initiation occurs at times of threat to self-image among adolescents [35–37].

Procedure

Participants were recruited in individual classrooms. The researcher explained the study briefly while displaying an objective, nonjudgmental attitude toward smoking. The researcher emphasized that participation was an opportunity for them as adolescents to "have their voices heard." Those students who volunteered signed student assent forms and were given parental consent forms to take home for their parents to sign.

On the researcher's return visit, students who presented both signed forms were administered a questionnaire. Students were assured that their participation was anonymous, that is, no names were requested on the questionnaires. Participants were instructed that there were no "right" or "wrong" answers, and that honest responses were crucial to the study. They completed a paper-and-pencil survey consisting of 149 items during a single class period; surveys were collected immediately upon completion.

Measures

Ever-tried smoker. To assess ever-tried smoking, one question was asked, "Have you ever tried smoking, even a few puffs?" Those students who responded "no" and "yes" were respectively coded as 'Never smokers' and 'Ever smokers'.

Past-30-day smoker. Respondents were asked, "Think about the last 30 days. On how many of these days did you smoke cigarettes?" Responses were reported on a seven-point scale ranging from "0 days" to "all 30 days." In this study, the analyses were performed on a dichotomized version of the past-30-day smoking variable. Responses were recoded as zero days versus one or more days. Those students who reported smoking during the past 30-days were coded as "past-30-day smokers."

Self-image. Forty-eight items were adapted from the Piers-Harris Children's Self-Concept Scale [38]. This self-report questionnaire was developed especially for work with children. Its items cover many areas of the self-image, including health and physical aspects, behavior at home and schools, enjoyment of recreation, abilities in sports and play, intellectual abilities, personality character, and emotional tendencies. Items include: "I get nervous when the teacher calls on me," "I cause trouble to my family," "I'm good looking," "I am smart." Response options ranged from: 1 = "Strongly disagree," 2 = "Disagree," 3 = "Neither agree nor disagree," 4 = "Agree," and 5 = "Strongly agree." Cronbach alpha for the 48 items we used was .74.

Family functioning. Twenty-five items were adapted from the Family Functioning in Adolescence Questionnaire (FFAQ). The FFAQ is a 42-item self-report measure that uses five-point scales to assess the psychosocial health of the family as perceived by the adolescent [39]. The measure is based on a model integrating family systems theory, developmental tasks and identity formation. The FFAQ has six dimensions: structure, affect, communication, behavior control, value transmission, and external system. Sample items are: "In our family, we don't spend our free time together," "We show that we care for each other in our family," "My parents want me to try my best whatever I do," "My parents still treat me like a child and not like a maturing person." Because Cronbach alphas for two of the subscales were relatively low in the original scale [39], we decided to use the composite score for the analyses rather than particular dimensions. Response options ranged from: 1 = "Strongly disagree," 2 = "Disagree," 3 = "Neither agree nor disagree," 4 = "Agree," and 5 = "Strongly agree." The obtained Cronbach alpha for the 25 items we used was .78.

Covariates. To control for confounding, we treated the demographic variables of age, gender, generation status and socioeconomic status (SES) as covariates. For SES, because responses to traditional measures about parental occupation, education and income (indicators for SES) are difficult for adolescents this age to report, we used parental education and ownership of housing as indicators.

Table 1
Demographic characteristics of the sample by subgroups

Demographic characteristics	Chinese-American n (%)	Filipino-American n (%)	Korean-American n (%)	Vietnamese-American n (%)
Total	402 (35%)	269 (24%)	198 (17%)	270 (24%)
Age: mean (SD)	14.5 (1.2)	13.8 (1.3)	14.1 (1.2)	14.1 (1.1)
Grade				
8th	88 (21.8%)	107 (39.7%)	49 (24.7%)	85 (31.5%)
9th	311 (77.4%)	162 (60.2%)	148 (74.7%)	185 (68.5%)
Gender				
Female	183 (45.5%)	140 (51.7%)	91 (45.9%)	127 (47.0%)
Male	218 (54.2%)	129 (47.9%)	106 (54.0%)	142 (52.6%)
Parental education				
High (≥ 12 years)	186 (46.3%)	224 (83.3%)	143 (72.2%)	104 (38.5%)
Low (< 12 years)	160 (39.8%)	16 (6.0%)	34 (17.2%)	100 (37.0%)
Own house				
Yes	208 (51.7%)	149 (55.4%)	85 (42.9%)	105 (38.9%)
No	190 (47.3%)	118 (43.9%)	108 (54.5%)	163 (60.4%)
Place of birth				
U.S.	244 (60.7%)	162 (60.2%)	128 (64.6%)	185 (68.5%)
Other country	155 (38.6%)	107 (39.8%)	68 (34.3%)	82 (30.4%)
Generation status				
1st generation	150 (37.3%)	105 (39.0%)	66 (33.3%)	82 (30.4%)
2nd generation	216 (53.7%)	124 (46.1%)	119 (60.1%)	178 (65.9%)
3rd+ generation	27 (6.7%)	38 (14.1%)	11 (5.6%)	6 (2.2%)

Note: Percentage decompositions do not add up to 100% because of missing responses.

Data analysis

Chi-square analyses were used to assess differences in the prevalence of ever-tried smoking and 30-day smoking by demographic characteristics and by subgroups. Univariate logistic regression analyses were performed to determine whether family functioning and self-image were each associated with smoking behaviors. Significant interactions among subgroups, family functioning, and self-image were found in the preliminary analyses. Therefore, stratified analyses were used to present odds ratios for the four subgroups. To determine adjusted odds ratios (controlling for covariates) for the independent variables as well as for interactions among family functioning, self-image and subgroups, multivariate logistic regression analyses were performed. The interaction terms included family functioning × self-image, family functioning × subgroups, self-image × subgroups, and family functioning × self-image × subgroups. The predictors were entered into each stratified multivariate logistic regression model in a two-step process: first the set of main effects, then the set of interaction terms.

Results

Demographic characteristics of sample

The demographic characteristics of the sample are shown in Table 1. More respondents reported being ninth graders (71.0%). Approximately half were female (47.6%). When parental education was dichotomized as high (≥ 12 years of education) versus low (< 12 years of education), there were significant differences across subgroups, χ^2 (3) = 143.4, p = .000, with Filipino- and Korean-Americans reporting higher parental education than Chinese- and Vietnamese-Americans. For Chinese-Americans and Vietnamese-Americans, the most frequently reported educational level for both parents was high school. Home ownership, another indicator of SES, also varied significantly across subgroups, χ^2 (3) = 18.8, p = .000. Filipino-Americans reported the highest rate of home ownership (56.1%), followed by Chinese-Americans (52.9%), while Korean- and Vietnamese-Americans reported lower rates (45.5% and 39.4%).

Subgroup differences in smoking prevalence

Table 2 shows the prevalence of lifetime smoking and past-30-day smoking by grade, gender and subgroup. Chi-square analyses tested group differences in smoking behavior. The proportions for lifetime smoking and past 30-day smoking varied significantly across the four subgroups. Korean-American adolescents reported the highest lifetime smoking and 30-day smoking rates, followed by the Vietnamese- and Filipino-American subgroups. Chinese-American adolescents reported the lowest smoking rates. Also shown in Table 2 are the grade comparisons. As one would expect, the ninth graders were much more likely than eighth graders to have begun to smoke. Neither of the indicators of socioeconomic status, parental education attainment and home ownership, showed a connection to smoking. No significant gender differences in smoking prevalence were found.

Table 2
Smoking prevalence by grade, gender, and subgroups

Variable	Lifetime smoking %	Past 30-day smoking %
8th grade (29.0%)	14.9	2.7
9th grade (71.0%)	27.5	10.2
χ^2 (1)	20.57	17.68
p Value	.000	.000
Female (47.6%)	22.9	7.1
Male (52.4%)	24.7	8.9
χ^2 (1)	.48	1.36
p Value	.50	.243
Chinese-American (35.3%)	19.4	5.3
Filipino-American (23.7%)	28.3	7.8
Korean-American (17.3%)	31.3	12.6
Vietnamese-American (23.7%)	20.7	9.3
χ^2 (3)	14.74	10.36
p Value	.002	.016
Total	23.9	8.1

Note: Percentage decompositions do not add up to 100% because of missing responses.

Associations between smoking behaviors, family functioning and self-image by subgroups and gender

Logistic regression models were performed to calculate odds ratios for lifetime smoking for family functioning and self-image. Table 3 shows the odds ratios with the analyses stratified by subgroups. For Chinese- and Korean-Americans, odds ratios obtained from both univariate and multivariate analyses suggest that positive family functioning is inversely associated with lifetime smoking. However, self-image is not significantly associated with lifetime smoking. In contrast, for Filipino- and Vietnamese-Americans, higher self-image is inversely associated with lifetime smoking, while family functioning is not significantly associated with lifetime smoking. Univariate and multivariate analyses for past-30-day smoking were also calculated for family functioning and self-image. However, no significant associations were detected for any of the subgroups, perhaps because the numbers of participants reporting past-30-day smoking within the subgroups were small. In addition, odds ratios for smoking behaviors with the analyses stratified by gender were calculated using univariate and multivariate analyses. No gender differences in the magnitude of the associations between smoking behaviors, family functioning, or self-image were found.

Interactions between family functioning, self-image, and subgroups

As hypothesized, the associations between family functioning and smoking behavior vary across subgroups ($p = .025$). The interaction of family functioning and self-image also affects smoking differently across groups ($p = .047$). When family functioning and self-image are both high, Chinese- and Filipino-American adolescents are less likely to smoke, whereas this interaction effect is not observed for Korean- and Vietnamese-American adolescents.

Discussion

Most previous studies on Asian-American adolescent smoking have investigated this population as an aggregated group. In contrast, this study examined smoking behavior and psychosocial correlates among the four largest Asian-American subgroups: Chinese, Filipino, Korean, and Vietnamese. Our result showed significant differences in smoking prevalence across the subgroups, which indicates that Korean-Americans have the highest smoking prevalence rates in lifetime and 30-day smoking, whereas Chinese-Americans have the lowest rates on both indices. Filipino-American adolescents were more likely to have tried smoking compared to Vietnamese-Americans, but were less likely to have smoked within the past 30 days.

We expected ancestral country to have an effect on Asian-American youth smoking, but there was no simple correspondence between prevalence rates in the country of origin and those in our sample. One difference is that in Asia, males are overwhelmingly more likely to smoke than females, both as adults and as adolescents, whereas we found smoking rates for Asian-American boys and girls to be equivalent. In a separate study using the same dataset, we examined the association between smoking behavior and acculturation and perceived social norms among Asian-American adolescents. We found that more highly acculturated girls were more likely to try a cigarette [15], perhaps because American cultural pressures against gender discrimination are involved in eliminating the anticipated gender disparity in smoking. Another difference is that the two countries with the highest smoking rates, China and Korea, are associated with the highest and lowest smoking rates in the Los Angeles sample. Nevertheless, the results did support our hypothesis, that there are differences in smoking prevalence across subgroups in the United States, consistent with previous studies examining Asian-American subgroups [7,9,16].

The results of this study suggest that higher family functioning and self-image are protective for Asian-American adolescents. Participants who reported having never smoked scored higher in both family functioning and self-image across all four subgroups. Our results are supported by previous research on family-smoking association, in that dysfunctional family structure, inadequate parenting discipline skills, lack of parental support and parent-child communications are strongly associated with selection of substance-using friends and the tendency to experiment with smoking and other substance use [4,21]. This family-smoking association also seems to apply to the Asian-American population. When Asian-American adolescents face problems, they may see smoking as a way of dealing with their threatened self-image [3,9,23].

Our results also showed differences in the association between smoking and family functioning and self-image across

Table 3
Associations between self-image, family functioning, and lifetime smoking by subgroups

	Smoking	Unadjusted univariate		Adjusted multivariate	
	Yes/No	OR	95% CI	OR	95% CI
Chinese-Americans					
Self-image					
Low	38/123	Reference		Reference	
Medium	17/108	.51*	(.27, .95)	.63	(.32, 1.24)
High	23/93	.80	(.45, 1.44)	1.64	(.78, 3.46)
Family					
Low	39/105	Reference		Reference	
Medium	27/113	.64	(.37, 1.12)	.61	(.33, 1.12)
High	12/106	.31**	(.15, .61)	.21**	(.09, .52)
Filipino-Americans					
Self-image					
Low	24/27	Reference		Reference	
Medium	28/67	.47*	(.23, .95)	.54	(.25, 1.16)
High	24/99	.27**	(.13, .55)	.33*	(.14, .78)
Family					
Low	29/54	Reference		Reference	
Medium	27/113	.79	(.42, 1.54)	1.22	(.58, 2.56)
High	12/106	.54	(.28, 1.01)	.97	(.43, 2.17)
Korean-Americans					
Self-image					
Low	27/38	Reference		Reference	
Medium	18/49	.52	(.25, 1.07)	.91	(.38, 2.14)
High	17/49	.45	(.23, 1.02)	1.06	(.40, 2.79)
Family					
Low	31/27	Reference		Reference	
Medium	15/48	.27**	(.13, .59)	.25**	(.10, .61)
High	16/61	.23***	(.11, .49)	.22**	(.08, .56)
Vietnamese-Americans					
Self-image					
Low	31/70	Reference		Reference	
Medium	19/84	.51*	(.27, .98)	.54	(.27, 1.07)
High	6/60	.23**	(.09, .58)	.26*	(.09, .74)
Family					
Low	30/79	Reference		Reference	
Medium	17/75	.60	(.30, 1.17)	.80	(.39, 1.63)
High	9/60	.40*	(.17, .89)	.77	(.30, 1.96)

Note: Adjusted by age, gender, SES and generation status.
* $p < .05$; ** $p < .01$; *** $p < .0001$.

the four subgroups. For Chinese- and Korean-American adolescents, high family functioning was significantly associated with decreased risk of lifetime smoking, whereas for Filipino- and Vietnamese-American adolescents, it was high self-image that was significantly associated with a decreased risk for smoking. One possible explanation may be that different patterns of immigration from various Asian countries to the United States have influenced the economic opportunities, social integration (including family structures), and health status of the subgroups [16,31], thereby weakening the influence of family and strengthening individualism.

The results of our study clearly support the need for studies that disaggregate Asian-American adolescents by ethnicity, and for studies that explore inter-ethnic differences in the influences of family and self on youth smoking. The varied influences of family functioning and self-image on smoking among Asian-American subgroups point to the importance of cultural targeting when designing and implementing prevention programs. Successful prevention efforts must take into consideration ecological factors influencing smoking onset and maintenance. Existing multicultural adolescent smoking prevention curricula might increase their relevance to specific Asian subgroups by conducting homogeneous (i.e., all Chinese or all Vietnamese) small group sessions that attend to cultural distinctions.

Limitations

There are several limitations to be considered. First, because the results of this study are cross-sectional, causality cannot be inferred. For example, information about whether Asian-American adolescents with low self-im-

age are more likely to smoke or whether smoking and its consequences decrease self-image cannot be provided by this study. The theoretical model used in this study assumes that poor self-image leads to smoking behavior, but the reverse causal direction also is plausible. A longitudinal study is needed to clarify the correlational relationship between smoking, self-image, and family functioning.

Second, the results of the study are based on participants' self-reports of their smoking behavior, self-image and family functioning. Although the participants were assured that their responses were anonymous, they may have underreported their smoking behavior in an attempt to avoid criticism or to present themselves in a socially desirable way [40]. Personality and emotional factors may also influence perceptions of family functioning and self-image as well as estimates of smoking behavior. Interpretation of self-reports always inspires caution.

Third, our results are based on a sample of students of eighth and ninth graders across four specific Asian-American subgroups in Los Angeles County. In more ethnically isolated settings, mainstream norms may dominate. Therefore, more research is needed with Asian-American populations living in other cities, and from other subgroups, in order to extend the generality of the present findings.

Finally, the results using past 30-day smoking reports were not very informative because there were few students who acknowledged this behavior. Although Asian-Americans do experiment with tobacco early, they begin smoking regularly later than other ethnic groups [3], and few of our young adolescents had firmly established the habit. This limitation does not necessarily detract from the predictive value of the lifetime smoking results we obtained, however, because early experimentation is a strong predictor of eventually becoming a regular smoker [37].

Conclusion

The essential contribution of this study is the fine-grained analysis that reveals smoking behaviors, as well as the associations between smoking behavior and psychosocial factors, to vary across Asian-American ethnic subgroups. The results may provide information that is essential for health care providers in helping minority groups to adjust to a new culture. Understanding how family functioning and self-image influence ethnic-specific Asian-American adolescent smoking behaviors may shed light on the complex issues governing tobacco use among various ethnic groups and thereby permit the construction of more tailored prevention programs. Given the different cultural, historical and demographic characteristics of each subgroup, future studies should also explore these differences in order to understand the context and processes of individual development (including the onset of risk behaviors) and family development for Asian-American youth, which, in turn, may help in designing programs to prevent other problematic behaviors.

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References

[1] Burton D, Sussman S, Hansen WB, et al. Image attributions and smoking intentions among seventh grade students. J Appl Soc Psychol 1989;19:656–64.
[2] Weiss JW, Cen S, Schuster DV, et al. Longitudinal effects of pro-tobacco and anti-tobacco messages on adolescent smoking susceptibility. Nicotine Tob Res (in press).
[3] Chen X, Unger JB, Johnson CA. Is acculturation a risk factor for early smoking initiation among Chinese American minors? A comparative perspective. Tob Control 1999;8:402–10.
[4] Wang MQ, Fitzhugh EC, Westerfield RC, et al. Family and peer influences on smoking behavior among American adolescents: an age trend. J Adolesc Health 1995;16:200–3.
[5] Ma GX, Tan Y, Toubbeh JI, et al. Acculturation and smoking behavior in Asian-American populations. Health Educ Res 2004;19:615–25.
[6] Delva J, Wallace JM, O'Malley PM, et al. The epidemiology of alcohol, marijuana, and cocaine use among Mexican American, Puerto Rican, Cuban American, and other Latino American eighth-grade students in the United States: 1991–2002. Am J Public Health 2005;95:696–702.
[7] Ma GX, Tan Y, Toubbeh JI, et al. Differences in stage of change of smoking behavior among current smokers of four Asian American subgroups. Addict Behav 2003;28:1431–9.
[8] Lew R, Tanjasiri SP. Slowing the epidemic of tobacco use among Asian American and Pacific Islanders. Am J Public Health 2003;93:764–8.
[9] Chen X, Unger JB, Cruz TB, et al. Smoking patterns of Asian-American youth in California and their relationship with acculturation. J Adolesc Health 1999;24:321–8.
[10] Ma GX, Shive S, Legos P, et al. Ethnic differences in adolescent smoking behaviors, sources of tobacco, knowledge and attitudes toward restriction policies. Addict Behav 2003;28:249–68.
[11] Chen CY, Storr CL, Anthony JC. Influence of parenting practices on the risk of having a chance to try cannabis. Pediatrics 2005;115:1631–9.
[12] Chassin L, Presson CC, Sherman SJ, et al. Social psychological factors in adolescent substance use and abuse. In: Medway FJ, Cafferty TP, eds. Social Psychology: A Social Psychological Perspective. Hillsdale, NJ: Erlbaum, 1992:397–424.
[13] Ma GX, Shive S, Tan Y, et al. Prevalence and predictors of tobacco use among Asian Americans in the Delaware Valley region. Am J Public Health 2002;92:1013–20.
[14] Ma GX, Tan Y, Toubbeh J, Su X. Differences in stages of change of smoking behavior among current smokers of four Asian American subgroups. Addict Behav 2003;28:1431–9.
[15] Weiss JW, Garbanati JA. Association between adolescent smoking and acculturation and perceived social norms among Asian-American subgroups. J Ethnicity in Sub Abuse (in press).

[16] Unger JB, Trinidad D, Weiss JW, et al. Acculturation as a risk factor for smoking among Asian American adolescents: Is the association confounded by nationality? J Ethn Subst Abuse 2004;3:65–79.
[17] O'Byrne KK, Haddock CK, Poston WSC. Parenting style and adolescent smoking. J Adolesc Health 2002;30:418–25.
[18] Jackson C, Bee-Gates DJ, Henriksen L. Authoritative parenting, child competencies, and initiation of cigarette smoking. Health Educ Q 1994;21:103–16.
[19] Tilson EC, McBride CM, Lipkus IM, et al. Testing the interaction between parent-child relationship factors and parent smoking to predict youth smoking. J Adolesc Health 2004;35:182–9.
[20] McMaster LE, Wintre MG. The relations between perceived parental reciprocity, perceived parental approval, and adolescent substance use. J Adolesc Res 1996;11:440–60.
[21] Blanton H, Gibbons FX, Gerrard M, et al. Role of family and peers in the development of prototypes associated with substance use. J Fam Psychol 1997;11:271–88.
[22] Duncan T, Tildesley E, Duncan S, et al. The consistency of family and peer influences on the development of substance use in adolescence. Addiction 1995;90:1647–60.
[23] Weiss JW, Garbanati JA. Relationship of acculturation and family functioning to smoking attitudes and behaviors among Asian-American adolescents. J Child Fam Stud 2004;13:193–204.
[24] Sussman S, Dent CW, Simon TR, et al. Identification of which high-risk youth smoke cigarettes regularly. J Health Behav Educ Promot 1993;17:42–53.
[25] Sussman S, Dent CW, Stacy AW, et al. Project towards no tobacco use: 1-year behavior outcomes. Am J Public Health 1993;83:1245–50.
[26] Simons-Morton B, Crump AD, Haynie DL, et al. Psychosocial, school, and parent factors associated with recent smoking among early-adolescent boys and girls. Prev Med 1999;28:138–48.
[27] Li X, Stanton B, Feigelmen S. Impact of perceived parental monitoring on adolescent risk behavior over 4 years. J Adolesc Health 2000;27:49–56.
[28] Avenevoli S, Merikangas K. Familial influences on adolescent smoking. Addiction 2003;98:1–20.
[29] Chan S. Families with Asian roots. In: Lynch EW, Hanson MJ, eds. Developing Cross-Cultural Competence. Baltimore, MD: Paul H. Brooks, 1998:252–353.
[30] Sodowsky GR, Kwong-Liem KK, Pannu R. Ethnic identity of Asians in the United States. In: Ponterotto JG, Casas JM, Suzuki LA, et al., eds. Handbook of Multicultural Counseling. Beverly Hills, CA: Sage, 1995:123–54.
[31] Kim BLC. Korean families. In: McGoldrick M, Giordano J, Pearce JK, eds. Ethnicity and Family Therapy. New York, NY: Guilford, 1996:281–94.
[32] Kwak K, Berry JW. Generational differences in acculturation among Asian families in Canada: a comparison of Vietnamese, Korean, and East-Indian groups. Int J Psychol 2001;36:152–62.
[33] Pham TB, Harris RJ. Acculturation strategies among Vietnamese-Americans. Int J Intercult Relat 2001;25:279–300.
[34] Swann WB. Self-verification: bringing social reality into harmony with the self. In: Suls J, Greenwald AG, eds. Psychological Perspectives on the Self, vol. 2 Hillsdale, NJ: Erlbaum, 1983:33–66.
[35] Altman D, Levine D, Coeytaux R. Tobacco promotion and smoking susceptibility to tobacco use among adolescents aged 12 through 17 years in a national representative sample. Am J Public Health 1996; 86:1590–3.
[36] Sherman SJ, Gorkin L. Attitude bolstering when behavior is inconsistent with central attitudes. J Exp Soc Psychol 1980;16:388–403.
[37] U.S.Department of Health and Human Services. Preventing Tobacco Use among Young People: A Report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services Public Health Service, CDC National Center for Chronic Disease Prevention, and Health Promotion Office on Smoking and Health, 1994.
[38] Piers E, Harris D. The Piers-Harris Children's Self Concept Scale. Nashville, TN: Counselor Recordings and Tests, 1969.
[39] Roelofse R, Middleton M. The family functioning in adolescence questionnaire: a measure of psychosocial family health during adolescence. J Adolesc 1985;8:33–45.
[40] Ong AD, Weiss DJ. The impact of anonymity on responses to "sensitive" questions. J Appl Soc Psychol 2000;30:1691–708.