Social Influences as Explanations for Substance Use Differences Among Asian-American and European-American Adolescents†

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Abstract—The present study examines the social influences in the Asian-American and European-American adolescent environment to provide a greater understanding of effect of ethnic differences on the prevalence of substance abuse. Participants were 957 Asian-American and 3705 European-American seventh grade adolescents. It was found that Asian-American students were less likely to use alcohol and cigarettes, and had a more abstinence-promoting environment than European-American adolescents. This difference in Asian-American adolescents appeared to be the result of less adult and peer influence to use alcohol or cigarettes, less offers of alcohol, and an increased likelihood of having an intact family when compared to European-American adolescents. Additionally, Asian-American adolescents reported having fewer friends and spending less time with their friends than European-American adolescents. It was concluded that social influences play an important role in explaining why Asian-American adolescents have lower rates of substance use.

Keywords—adolescents, alcohol use, Asian-American, smoking, social influences, substance use

Previous surveys of adolescents have revealed that participants of Asian heritage reported the lowest levels of substance use when compared to other ethnic groups (O’Hare 1995; File, Mabbutt & Shaffer 1994; Gillmore et al. 1990; Adlaf, Smart & Tan 1989; Moor et al. 1989; Maddahian, Newcomb & Bentler 1986; Morgan, Wingard & Felice 1984; Kandel, Single & Kessler 1976). Since factors that can prevent adolescent substance use and especially early initiation to substance use are of great concern, the etiology of the lower rates of substance use for ethnic Asians has been widely studied. It has been hypothesized that this low prevalence can be attributed to physiological/genetic factors and/or environmental (e.g., cultural) influences.

PHYSIOLOGICAL FACTORS

The physiological hypotheses state that reduced levels of alcohol consumption are due to Asian alcohol sensitivity. Most Asian subjects have been found to exhibit a "flushing reaction" following alcohol consumption. This facial skin-flushing response is characterized by increased heart rate, visible redness and feelings of warmth. The physiological (genetic) basis of the flushing response is the deficiency in the aldehyde dehydrogenase (ALDH2) liver enzyme, which is associated with a mutant allele of the
ALDH2 gene. Without ALDH2, the oxidation of acetaldehyde is slower during alcohol metabolism, thus creating a higher blood acetaldehyde level and subsequent flushing. These aversive reactions, and their beneficial effect in reducing alcohol consumption, have been widely reported (Tu & Israel 1995; Wall et al. 1992; Newlin 1989; Ewing, Rouse & Pelizzari 1974). Additionally, Akutsu, Sue, Zane and Nakamura (1989) found that physiological factors were stronger determinants of ethnic differences in alcohol consumption than cultural values.

However, physiological differences do not appear to completely explain the lower level of alcohol use among Asians. "Not all Asians experience flushing, and the prevalence of flushing differs from one Asian group to another," noted Austin, Prendergast and Lee (1989: 8). Yu, Fang, and Dyck (1990) reported that the alcohol flushing reaction did not correlate with alcohol consumption in Taiwan. Other studies suggested that only “fast flushing” lowers alcohol consumption (Nakawatase, Yamamoto & Sasa 1993). Additionally, American Indians have been found to show higher levels of flushing than Asians, but report greater alcohol consumption (Peele 1986). If genetic/physiological factors are the sole basis for the low Asian drinking rate, then greater acculturation should not increase consumption, as was found in the studies of Sue, Zane and Ito (1979). Furthermore, the physiological hypotheses do not explain the lower use of other substances among Asian adolescents.

ENVIRONMENTAL FACTORS

Alternatively, the low prevalence of Asian-American substance use may be due to or moderated by environmental factors such as social, psychological and cultural influences (Johnson & Nagoshi 1990). Important differences exist between the Asian and Western culture that may prevent or promote substance use. Asian cultures emphasize the value of responsibility, interdependence, moderation and restraint. On the other hand, Western culture values independence, individualism and spontaneity, which is more congruent with substance use (Sue 1987). Johnson, Nagoshi, Ahern, Wilson, and Yuen (1987) investigated cultural norms to explain ethnic group differences in alcohol use. They found that the acceptability of drinking varied across ethnic groups and were directly related to alcohol use. Additionally, Sue, Zane and Ito’s research (1979) found that strict social norms against drinking, enforced among parents of Asian students, were predictive of lower alcohol use.

Therefore, elements of Asian culture and cultural norms can have an important role in the reduction of substance use. A major aspect of traditional Asian culture is the importance of strong family connections. In discussing the common characteristics of the Asian culture, Wu and Tseng (1985) stated that one of the most important characteristics of Asian cultures is their value of family. Family cohesiveness and stability (e.g., lower divorce rates) have been noted in previous studies as major protective forces against involvement with substance use (Brounstein et al. 1990; Murray et al. 1987).

Other important factors to be associated with adolescent substance use are social influences (i.e., parents and peer use). Applying Bandura’s (1977) Social Learning Theory in the investigation of the role of social influences in Asian-American adolescents’ low prevalence of substance use is especially appropriate, since its emphasis is on learning via observation. The influence of parents and peers on adolescent substance use has long been of interest to researchers attempting to explain adolescent substance-using behaviors from social learning perspectives (Needle et al. 1986; Strickland & Pittman 1984; Huba & Bentler 1980; McKillip, Johnson & Petzel 1973). A number of studies showed positive correlations between parental and adolescent drinking behaviors (Wiks, Callan & Austin 1989; Johnson, Shoniz & Locke 1984; McDermott 1984). Other research has found that parental influences can aid in the establishment of low-level drinking patterns, while peers tend to encourage the consumption of greater quantities of alcohol. Despite parental attempts to prepare their teenagers for responsible alcohol use, consumption rates were found to be even greater among adolescents who drank with their parents. The lowest consumption rates were found in adolescents whose parents were nondrinkers; this implies that an abstinence-promoting environment is the most effective system for preventing early initiation of alcohol use and misuse (Mitic 1990).

The effects of friends and same-age associates are other interpersonal factors that have been noted to influence adolescent substance use (Landrine et al. 1994; Dembo et al. 1979). Chi, Lubben and Kitano (1989) reported that having friends who drank was the only social factor that consistently related to Asian drinking behavior. Newcomb and Bentler (1986) found that Asian-Americans had the lowest frequency of substance use and had reported the fewest substance-using peer and adult models. European-Americans on the other hand reported high levels of substance use and many substance-using peer and adult models. Furthermore, Sunseri and colleagues (1983) reported that Asians were less likely to have either close friends or family members who smoked when compared to other ethnic groups. Lorenzen, Pakiz, Reinherz and Frost (1995) also characterized Asian-American adolescents as participating in fewer after school activities, and having limited numbers of friends when compared to European-American adolescents.

Therefore, most Asian-American adolescents are raised spending the majority of their time in an intact family, where cultural norms against substance use are reinforced, and exposure to negative adult or peer influences are reduced.
THE CURRENT STUDY

The focus of the current study was to investigate whether the low prevalence of substance use among Asian-American adolescents is due to or moderated by the lower occurrence of social influences that promote substance use. This study examined the following hypotheses:

1. The prevalence of alcohol and cigarette use by Asian-American adolescents is significantly lower than that of European-American adolescents.
2. The Asian-American adolescent's environment contains fewer adult and peer models for alcohol and cigarette use, and has fewer offers of alcohol than the European-American adolescents' environment.
3. Due to strong family values in the Asian culture, Asian-American adolescents are more likely to have intact families and fewer friends, and spend less time with their friends when compared to European-American adolescents.
4. The number of close friends and time spent with friends probably correlates to the number of peer models for alcohol and cigarette use, as well as to actual alcohol and cigarette use.

Although this study was not designed to test the physiological versus environmental explanations of Asian substance use, the environmental explanation would be supported if alcohol and cigarette use patterns varied according to social influences.

METHOD

Participants

Adolescents from Los Angeles and San Diego County public school units participated in the study. The analyses presented in this article are based on a subsample of 957 Asian-American (50% female and 50% male) and 3705 European-American (52% female and 48% male) seventh grade students who participated in a randomized experimental prevention trial known as the Adolescent Alcohol Prevention Trial (Donaldson et al. 1995).

Measures

Alcohol use. Alcohol use was measured by three questions: "How many drinks of alcohol have you had in your whole life?" "How many drinks of alcohol have you had in the past month (30 days)?" and "How many times have you ever been drunk?" Due to the high frequency of reported nonuse, the user categories were collapsed, creating dichotomized alcohol items. Upon any indication of alcohol use other than for religious purposes, participants were placed in the user category; otherwise they were coded as nonusers. Additionally, an alcohol index was created to measure the prevalence of overall alcohol use and abstinence; it consisted of nonusers (participants whose response to all three items indicated nonuse) and users.

Cigarette use. Cigarette use was measured by two questions: "How many cigarettes have you smoked in your whole life?" and "How many cigarettes have you smoked in the past month (30 days)?" Due to the high frequency of nonuse, the user categories were collapsed, similarly to the alcohol items. Additionally, a smoking index was created similarly to the alcohol index.

Social influences. Four groups of variables were used as indicators of social influences for seventh grade adolescent substance use: perceived adult influence on substance use, perceived peer influence on substance use, family structure, and friendships. Perceived adult influence on substance use was measured with five questions. For four of the questions: "Of the two adults that are most important in your life, how many ever drink alcohol?" "...drink alcohol about every day?" "...ever get drunk?" and "...smoke cigarettes?" responses were coded as 0 = "no adult influence" and 1 = "adult influence." Additionally, an adult influence measure was created. Any indication of adult influence on alcohol use placed participants in the "adult influence" group, otherwise they were placed in the "no adult influence" group. The fifth question was "How often are you with adults who are drinking alcohol?" Responses were coded as "never" or "sometimes."

Perceived peer influence for substance use was measured by six questions. The first five questions were: "How many of your three best friends have ever tried drinking alcohol?" "...had alcohol to drink in the past month (30 days)?" "...ever been drunk?" "...tried smoking cigarettes?" and "...smoked cigarettes in the past month (30 days)." The sixth item was "How often are you around kids who are drinking alcohol?" These items were dichotomized similarly to the adult influence items. Similarly to the adult influence measure, two peer influence measures were created, one for alcohol and one for cigarette use.

Additionally, actual offers of alcohol were first measured by the question: "Who usually offers you a drink of alcohol?" Response categories included brothers or sisters, cousins, friends, adults subjects knew well, kids subjects didn't know well, adults subjects didn't know well, and no one. This item was recoded to create an additional variable that included only those subjects who had been offered alcohol by kids (peers, siblings or cousins) and/or adults. The second item was: "How many times have you been offered a drink of alcohol in the past month (30 days)?" Due to the high frequency of "none" responses, this item was dichotomized into "no offer" and "some offer" categories. Additionally, an alcohol offer measure was created. Any indication of an alcohol offer from both items placed participants in the "alcohol offer" group, otherwise they were placed in the "no alcohol offer" group.
TABLE 1
Percentage of Alcohol and Cigarette Users as a Function of Ethnicity

<table>
<thead>
<tr>
<th>Substance Use</th>
<th>Number</th>
<th>Percentage of Users</th>
<th>χ², df=1, p &lt; .001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime alcohol use</td>
<td>4641</td>
<td>Asian-American: 38.4</td>
<td>European-American: 65.2</td>
</tr>
<tr>
<td>30-day alcohol use</td>
<td>4654</td>
<td>5.1</td>
<td>20.5</td>
</tr>
<tr>
<td>Drunkenness</td>
<td>4648</td>
<td>5.5</td>
<td>15.5</td>
</tr>
<tr>
<td>Alcohol index</td>
<td>4651</td>
<td>39.7</td>
<td>66.4</td>
</tr>
<tr>
<td>Lifetime smoking</td>
<td>4657</td>
<td>23.3</td>
<td>33.8</td>
</tr>
<tr>
<td>Past 30-day smoking</td>
<td>4656</td>
<td>2.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Smoking index</td>
<td>4658</td>
<td>23.5</td>
<td>33.9</td>
</tr>
</tbody>
</table>

*p < .001.

**Family structure.** Family structure was indicated by a variable that depended on whom the subjects were living with. Scoring differentiations were made between subjects depending upon whether they lived with both parents or under other family guardianship (such as divorced or widowed parents).

**Friendships.** Friendships were measured by "How many close friends do you have?" (responses ranged from 1 = "none" to 7 = "more than 10") and "How much of your free time do you spend with your friends?" (responses ranged from 1 = "none" to 5 = "almost all").

**Ethnicity.** Participants were categorized into one of six ethnic categories (European-Americans, Latinos, Asian-Americans, African Americans, Native Americans, and other). A subsample of Asian-American and European-American (comparison group) participants were analyzed for this study.

**Analyses**

The analyses used in the current study were guided by the highly skewed distributions of the substance use and social influence variables. Since the study was investigating possible explanations of the low prevalence of Asian-American substance use in early adolescence, the high prevalence of nonuse and low prevalence of social influences for substance use was expected.

Chi-square analyses examined the prevalence of alcohol and cigarette use among Asian-American and European-American adolescents. Gender differences within each ethnic group, as well as ethnic differences within each gender, were investigated using chi-square analyses for each substance use item and measure. Chi-square analyses and logistic regressions were utilized to examine the pattern of adult and peer influences by ethnicity. Chi-square analyses investigated the ethnic differences in alcohol offers and family structure. T-tests were applied to investigate ethnic differences in the number of friends participants had, and the amount of free time participants spent with their friends. Person correlations investigated the relationship between the amount of free time participants spent with their friends, the number of close friends, and reported alcohol and cigarette use. Additionally, person correlations investigated how the amount of free time participants spent with their friends and the number of close friends related to peer models of alcohol and smoking. Chi-square analysis was applied to investigate the effect of interpersonal factors on substance use within the two ethnic groups. Additionally, the large sample size allowed the use of analysis of variance (ANOVA) to examine possible interactions between ethnicity and social influences for substance use as outlined by Baron and Kenny (1986).

**RESULTS**

**Ethnic Differences in the Prevalence of Substance Use**

Table 1 presents the results of the chi-square analyses for the alcohol and cigarette use items as well as measures by ethnicity. Significant associations were found between ethnicity and self-reported substance use. Specifically, Asian-Americans had a lower proportion of users than European-American participants in all substance use measures. Abstinence from alcohol use was reported by 60% of Asian-Americans and 34% of European-Americans. Abstinence from cigarette use was reported by 76% of Asian-American and 66% of European-American adolescents.

Chi-square analyses revealed a significant association between gender and substance use within the two ethnic groups. For Asian-Americans, responses to the drunkenness and lifetime smoking questions indicated significant gender differences ($\chi^2 = 3.93$, $df = 1$, $p < .05$; $\chi^2 = 10.25$, $df = 1$, $p < .01$ respectively). For European-Americans, the lifetime alcohol, drunkenness and lifetime smoking items related significantly to gender ($\chi^2 = 21.97$, $df = 1$, $p < .001$; $\chi^2 = 37.63$, $df = 1$, $p < .001$; $\chi^2 = 31.69$, $df = 1$, $p < .001$ respectively). In both ethnic groups and in all substance use items, males had reported a higher prevalence of substance use than females. Furthermore, Asian-American adolescents reported significantly lower use in all substance use items (at $p < .001$ level) when compared to their same-sex European-American counterparts.
TABLE 2
Percentage of Adolescents Influenced to Use Substances as a Function of Ethnicity

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Asian-American</th>
<th>European-American</th>
<th>$\chi^2$, df=1</th>
<th>B</th>
<th>SE</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Influence for Substance Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adults ever drink alcohol</td>
<td>2790</td>
<td>60.2</td>
<td>72.1</td>
<td>29.5***</td>
<td>0.53***</td>
<td>.10</td>
<td>1.70</td>
</tr>
<tr>
<td>Adults drink alcohol almost every day</td>
<td>2794</td>
<td>13.6</td>
<td>26.4</td>
<td>40.6***</td>
<td>0.82***</td>
<td>.13</td>
<td>2.27</td>
</tr>
<tr>
<td>Adults ever get drunk</td>
<td>2794</td>
<td>30.9</td>
<td>33.1</td>
<td>0.9</td>
<td>0.10</td>
<td>.10</td>
<td>1.10</td>
</tr>
<tr>
<td>Adults smoke cigarettes</td>
<td>2767</td>
<td>43.4</td>
<td>45.2</td>
<td>0.5</td>
<td>0.07</td>
<td>.10</td>
<td>1.07</td>
</tr>
<tr>
<td>Around any adults who are drinking alcohol</td>
<td>4282</td>
<td>78.8</td>
<td>88.1</td>
<td>50.8***</td>
<td>0.69***</td>
<td>.10</td>
<td>2.00</td>
</tr>
</tbody>
</table>

| Peer Influence for Substance Use |        |                |                   |                |       |      |            |
| Friends ever tried drinking alcohol | 4280   | 19.9           | 48.1              | 225.9***       | 1.31***| .09  | 3.72       |
| Friends drank in the past month | 4290   | 6.1            | 20.5              | 99.8***        | 1.38***| .15  | 3.98       |
| Friends ever been drunk | 4287   | 6.8            | 20.5              | 90.1***        | 1.27***| .14  | 3.56       |
| Friends tried smoking cigarettes | 4276   | 19.3           | 39.6              | 125.8***       | 1.01***| .09  | 2.75       |
| Friends smoke in the past month | 4284   | 5.5            | 15.1              | 56.0***        | 1.12***| .16  | 3.05       |
| Around any kids who are drinking alcohol | 4287   | 32.2           | 41.8              | 26.4***        | 0.41***| .08  | 1.51       |

Note: Adult refers to one or both of the most important adults in the participants lives. Friends refers to any one or all of participants’ three best friends.

* $p < .05$.
** $p < .01$.
*** $p < .001$.

Ethnic Differences in the Social Influences for Substance Use

Table 2 presents the ethnic differences in adult and peer influences for substance use. Asian-American adolescents reported a lower prevalence of social influences for substance use when compared to their European-American counterparts. With the exception of adult models for drunkenness and smoking, all measures of social influences indicated highly significant ethnic differences. The results indicated that the European-American adolescent environment contains at least 2.75 times more peer influences for substance use than the Asian-American adolescent environment. In both ethnic groups, adult influences for substance use were greater than peer influences for substance use.

Table 3 presents the differences by ethnicity in the percentage of people who usually offered alcohol to the participants. Significant differences were found between Asian-American and European-American adolescents regarding who made the offers for alcohol use (including the response “no one”); $\chi^2=93.3$, df = 6, $p < .001$. A higher percentage of Asian-American adolescents reported having an environment without any alcohol offers (77%) compared to European-American adolescents (62%). In both ethnic categories, the highest number of alcohol offers were given by adults the participants knew well. The comparison of offers by adults and kids also revealed significant ethnic differences ($\chi^2=11.9$, df = 1, $p < .01$). Specifically, for those Asian-Americans who had reported receiving alcohol offers, 36% of the offers came from kids and 64% from adults. For European-Americans, 49% of the offers came from kids and 51% from adults, therefore indicating a much stronger peer influence in this group. Chi-square comparison also revealed significant ethnic differences in the number of alcohol offers in the last 30 days ($\chi^2=56.4$, df = 1, $p < .001$). A lower percentage of Asian-American adolescents reported receiving alcohol offers in the past month (9%) compared to European-American adolescents (20%).

Ethnic Differences Related to Family Structure and Friendships

Significant association was found between ethnicity and family structure ($\chi^2=41.95$, df = 1, $p < .001$). Asian-Americans had a higher number of intact families (80%) than did European-American families (66%). T-tests revealed ethnic differences in the amount of free time participants spent with their friends; $t$ (2668) = 12.94, $p < .001$. Asian-American adolescents ($M = 3.02, SD = 1.08$) reported spending significantly less time with their friends than the European-American group ($M = 3.70, SD = 1.09$). Asian-Americans also reported significantly lower numbers of close friends ($M = 4.48, SD = 1.62$) compared to the European-American participants ($M = 4.74, SD = 1.51$), $t$ (2678) = 3.52, $p < .001$.

Social Influences and Substance Use

For both ethnic groups, family structure yielded significant associations with substance use. For alcohol use,
TABLE 3
Percentage of Alcohol Offers by Others as a Function of Ethnicity

<table>
<thead>
<tr>
<th>Person who usually offers a drink of alcohol</th>
<th>Asian-American</th>
<th>European-American</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Brothers or sisters</td>
<td>0.9</td>
<td>9</td>
</tr>
<tr>
<td>Cousins</td>
<td>1.4</td>
<td>13</td>
</tr>
<tr>
<td>Friends</td>
<td>4.5</td>
<td>43</td>
</tr>
<tr>
<td>Kids participant doesn’t know well</td>
<td>1.4</td>
<td>13</td>
</tr>
<tr>
<td>Adults participant knows well</td>
<td>13.6</td>
<td>130</td>
</tr>
<tr>
<td>Adults participant doesn’t know well</td>
<td>0.9</td>
<td>9</td>
</tr>
<tr>
<td>No one</td>
<td>77.3</td>
<td>737</td>
</tr>
</tbody>
</table>

$\chi^2=4.82$, df = 1, p < .05 for Asian-American adolescents and $\chi^2=43.25$, df = 1, p < .001 for European-American adolescents. For cigarette use, $\chi^2=3.83$, df = 1, p = .05 for Asian-American adolescents and $\chi^2=73.18$, df = 1, p < .001 for European-American adolescents. Adolescents who reported having intact families were found to have lower prevalence of substance use in both ethnic groups.

Person correlations revealed significant relationships between substance use and the amount of free time participants spent with their friends within the Asian-American and European-American groups ($r=.10-.15$, p < .001). More time participants spent with their friends related to higher likeliness of them being alcohol and cigarette users. For Asian-American adolescents, significant relationship was found between the number of close friends participants had and substance use ($r=.10-.12$, p < .05); alcohol and cigarette users were more likely to have more friends than nonusers. However, for European-American adolescents, the number of close friends did not relate to either alcohol or cigarette use (p < .05).

Additionally, the number of close friends and the amount of time spent with friends correlated with the peer models for alcohol and cigarette use. More friends and more time spent with friends predicted higher levels of peer influence for alcohol and cigarette use for both ethnic groups ($r=.06-.20$, p < .01).

Analyses were carried out for Asian-American and European-American adolescents to investigate how the resistance of adolescents to becoming substance users is dependent upon social influences. Table 4 presents the ethnic differences in the subgroup of adolescents who reported having social influences to drink or smoke. Asian-American adolescents exposed to such social influences were less likely to use alcohol or cigarettes than European-Americans. With the exception of peer smoking, these ethnic differences were statistically significant for all influence measures (p < .01). For both ethnic groups, alcohol offers in the environment produced the strongest influence. Peer drinking emerged as a powerful influence for alcohol use. Peer influences for substance use were considerably stronger than adult influences in both ethnic categories.

Significant interactions were found between ethnicity and alcohol offers ($F(1,3)=15.17$, p < .001); ethnicity and adult drinking ($F(1,3)=6.10$, p < .05); ethnicity and peer drinking ($F(1,3)=5.83$, p < .05); and ethnicity and being around drinking adults ($F(1,3)=4.20$, p < .05). Being around drinking kids, adult and peer smoking, and family structure did not yield significant interactions for substance use at the p < .05 level. The significant interactions indicated the moderating effect of interpersonal variables between ethnicity and alcohol use. Additionally, significant main effects were found for ethnicity and all interpersonal influence measures for substance use at the p<.001 level.

DISCUSSION

The present study contributes to our knowledge of Asian-American adolescents' substance use by investigating the prevalence of social influence factors that promote alcohol and cigarette use.

As in previous studies, the participating Asian-American adolescents reported a significantly lower prevalence of alcohol and cigarette use than the European-American group. These ethnic differences remained significant for same-sex comparisons of all substance use measures. The Asian-American adolescent environments were less likely to contain substance use-promoting factors, such as alcohol offers, and substance-using adult or peer models. In both ethnic groups, the highest percentage of alcohol offers came from adults the participants knew well. Although the prevalence of adult models for alcohol and cigarette use were higher than the prevalence of peer models, the effect of peer models was found to be stronger than the effect of adult models in predicting substance use.

In line with traditional Asian family values, Asian-American adolescents were more likely to live in an intact family, spend significantly less time with peers, and have significantly fewer friends when compared to European-American adolescents. Additionally, more time spent with friends was found to relate to greater peer influence to alcohol or cigarette use, and higher prevalence of alcohol
TABLE 4

Percentage of Influenced Substance Users as a Function of Ethnicity

<table>
<thead>
<tr>
<th>Influences for alcohol use</th>
<th>Number</th>
<th>Percentage of Users</th>
<th>Percentage</th>
<th>$\chi^2$, df=1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol offers</td>
<td>1696</td>
<td>77.8</td>
<td>88.1</td>
<td>18.35***</td>
</tr>
<tr>
<td>Adult drinking</td>
<td>2036</td>
<td>46.0</td>
<td>75.9</td>
<td>128.45***</td>
</tr>
<tr>
<td>Peer drinking</td>
<td>1893</td>
<td>74.0</td>
<td>83.8</td>
<td>11.66**</td>
</tr>
<tr>
<td>Around any drinking adults</td>
<td>3687</td>
<td>46.5</td>
<td>71.3</td>
<td>154.78***</td>
</tr>
<tr>
<td>Around any drinking kids</td>
<td>1707</td>
<td>59.5</td>
<td>81.0</td>
<td>61.50***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Influences for cigarette use</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult smoking</td>
<td>1240</td>
<td>33.5</td>
<td>46.0</td>
<td>12.42***</td>
</tr>
<tr>
<td>Peer smoking</td>
<td>1523</td>
<td>58.0</td>
<td>62.6</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Note: Adult refers to one or both of the most important adults in the participants' lives. Friends refers to any one or all of participants' three best friends.

*p < .05
**p < .01
***p < .001

and cigarette use for both ethnic groups. The number of friendships was found to relate to the peer influence on alcohol or cigarette use in both ethnic groups, and further related, in the Asian-American adolescents, to the "actual" alcohol and cigarette use.

When investigating those adolescents who were exposed to social influences to drink and/or smoke, the Asian-American group had reported lower alcohol and cigarette use than the European-American adolescents, implying that multiple protective factors could be operating in this ethnic population. For both ethnic groups, alcohol offers produced the strongest influence for alcohol use. Peer influences for substance use were considerably stronger than adult influences in both ethnic categories. Results also indicated that social influences moderate the relationship between ethnicity and alcohol use, emphasizing the importance of including such measures when investigating the possible explanations of the lower prevalence of Asian alcohol use.

Strengths and Limitations

A major strength of this study was the large Asian-American and European-American sample. A substantial sample size in the Asian-American group is especially important due to large variations in generational status, level of acculturation and the country of origin (i.e. Chinese, Filipino, Japanese, Korean, Vietnamese) within the Asian-American community. As Sue (1987) pointed out, small or selected samples might not adequately represent the Asian-American population and he suggested obtaining a larger sample when studying this ethnic group. The sample size of this investigation allowed a more reliable generalization of the findings.

The large sample size not only provided a strong replication of earlier research on substance use differences of the two ethnic populations, but added to the previous literature by investigating specific interpersonal influence variables. No previous studies have investigated Asian-American social influences in such detail.

Although the Asian-American population is diverse, its component groups share similar value systems based largely on the teachings of Confucianism and Taoism, in contrast to Christianity-based Western cultural systems. Therefore, the highly significant ethnic differences in substance use, social influences, family structure and friendships may provide valuable information concerning the differences between Eastern and Western cultures.

The current study should be reviewed in the light of several notable limitations. First, all of the analyses were based solely on self-reported alcohol and cigarette use. Culture-specific response bias could effect the two ethnic groups differently. As previously mentioned, substance use is less congruent with the Asian culture, thus underreporting may be more likely to occur in this group than in the more independence- and spontaneity-valuing Western culture. Obtaining additional reports from friends and parents regarding the adolescents' substance-using behavior could have been useful in controlling or reducing possible response biases. However, this should be approached with caution, as similar cultural response bias could also occur in the parent and peer reports (since they are likely to belong to the same culture).

Secondly, the Asian-American adolescents were not separated into ethnic subgroups, or levels of acculturation. Important information could be gained regarding any variance within the Asian-American population in terms of social influences and substance using behavior.

Finally, physiological factors were not investigated. Although the present results indicated that social influences are important forces in predicting substance-using behavior, physiological conditions could also be important.
lower number of alcohol-using adult and peer models in the Asian-American adolescent's environment could be due to the alcohol sensitivity of the Asian parents and peers. Furthermore, as pointed out by Sue and Nakamura (1984), cultural values could be influenced by the adverse reactions to alcohol.

Implications and Conclusion

This research examined social influences which may help to explain ethnic differences in rates of substance use, particularly among Asian-American and European-American youths. Additionally, the findings provide support for the theory that adolescent substance use is learned, in part, by the modeling and imitation of valued individuals.

Ethnicity is a frequently-used explanatory variable in substance use research. However, as the current study indicated, ethnicity could be moderated by social influences when predicting substance use. Ethnic identity and cultural norm scales could probe more in depth to identify if ethnicity, by itself, is the contributor for lowered substance use in the Asian-American population. Furthermore, it is important to note that preventive factors may exist within a particular ethnic group (as seen in the current findings) that are uniquely protective for them and not relevant in other ethnic populations.

Further investigations should be made, in greater depth, regarding Asian-American adolescents' social influences. The simultaneous measurement of cultural norms, alcohol sensitivity of participants and ethnicity of adult and peer models, would likely increase our understanding of Asian-American adolescent substance use. Longitudinal investigations are needed to determine whether these social influences are protecting Asian-American adolescents throughout their lives, or only in the critical age period when they are most vulnerable to the pressures towards early initiation of substance use.

Identifying environmental factors that promote abstinence in the Asian-American population could provide valuable information for the development of prevention and intervention programs for other ethnic populations.

REFERENCES


Social Influences and Substance Use Differences


