

ORIGINAL ARTICLE

Development of a Culturally Appropriate Smoking Cessation Program for Chinese-American Youth

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Purpose: To identify potential cultural factors to enhance the efficacy of smoking cessation curricula for Asian-American adolescents, Chinese-Americans, and to present the process and challenges of implementing a culturally specific curriculum.

Methods: Chinese-American male ($n = 17$) youth smokers, aged 14–19 years, were recruited from community-based Asian-American organizations in the Delaware Valley Region of Pennsylvania and New Jersey. A 36-item questionnaire was developed to measure smoking behavior, attitudes, and culturally related factors. Focus groups were conducted. Cultural themes were addressed, such as interdependency and collective orientation of the Asian culture, importance of harmony in Asian families, and culturally related factors for smoking initiation and maintenance. A pre-post quasi-experimental research design was used. Data were analyzed using the Mann-Whitney U test to determine differences in the intervention and control groups in smoking behavior and the Chi-square test for differences in program characteristics.

Results: Participants almost never read their native language, they disagreed that their friends would accept them more if they were nonsmokers, and they thought they smoked because of high parental expectations. Asian teens perceived that a high percentage of their Asian-American peers smoke. The most important facilitator characteristics, program processes, relevant cultural factors and topics were identified for the program. Two groups were compared, a standard smoking cessation

curriculum (SC) and a culturally modified program (ACT) for Asian adolescents. A 23.1% quit rate for the SC program and an 18.2% quit rate for the ACT program at 3-month follow-up was achieved. Among participants who continued to smoke, there was a larger reduction in reported weekend and weekday cigarette use among ACT participants, than the Standard (SC) group. There was a reduction of 6.7 cigarettes on a typical weekday and 6 cigarettes on a typical weekend day for ongoing smokers of the ACT group.

Conclusions: Given the positive results among a high-risk population, the ACT program needs to be tested among a larger population of Chinese-Americans. © Society for Adolescent Medicine, 2004

KEY WORDS:

Adolescent health
Smoking cessation
Youth
Asian-American youth
Tobacco

A national objective in *Healthy People 2010* is to reduce to 21% the proportion of young people in grades 9–12 who have ever smoked [1]. Another objective is to increase to 84% adolescent smoking cessation attempts. Tobacco control among Asian-American populations has been understudied. Asian adolescent smoking rates are increasing and range from 14% to 28%, depending on gender and ethnic subgroup [1–8]. Among males, the prevalence rate has been reported to be 17.9% [4]. Asian-Americans are less likely to seek help than white smokers. A California study indicated that although 83% of Asian-American smokers were worried about the difficulties associated with quitting, less than 10%

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Manuscript accepted September 25, 2003.

sought help with smoking cessation [9]. In addition, 53% of English-speaking Asian-American smokers in California could not name a cessation program.

Various methods are used as smoking cessation techniques; they include self-help, behavioral counseling, and nicotine replacement therapy, and are applied in clinical, worksite, school, and community settings. Key elements in quitting smoking are motivation, personal support, counseling, and for some smokers, pharmacological aid through nicotine replacement [10]. The most frequently reported reasons why adolescents are motivated to stop smoking include, in order of preference: saving money, seeing a person ill from smoking, realizing the potential for better health, better fitness or chance to be on a sports team, dating a nonsmoker, and better breath, taste, and smell [11].

Research has shown that taking into consideration cultural variation among ethnic groups improves substance use treatment outcomes [12]. The objectives of the Asian Adolescents Choose Tobacco-Free (ACT) pilot study was to identify potential culturally relevant factors that might enhance the efficacy of smoking cessation curricula for Asian-American adolescents and to highlight the process and challenges of developing and implementing a culturally relevant program.

Methods

Goals of the Pilot Study

The pilot study was conducted by the Asian Tobacco Education and Cancer Awareness Research Initiative (ATECAR), the National Cancer Institute, and approved by the Temple University Institutional Review Board. The pilot study sought to accomplish the following goals: (a) to choose a generic curriculum (Spring 2001) to be implemented among Chinese adolescents as a standard curriculum (SC), (b) to conduct a focus group among participants at the conclusion of the SC curriculum to determine cultural factors to enhance the program, (c) to conduct a focus group among Chinese adult professionals to determine cultural factors to enhance smoking cessation curriculum, and (d) to conduct a literature review (Fall 2001) to further identify cultural factors to enhance the new ACT program that was developed and field-tested in the Spring of 2002.

Description of Goals

Selection of generic curriculum. The American Lung Association's Not on Tobacco (N-O-T) curriculum

was selected as the generic curriculum. The N-O-T program is a gender-sensitive, school-based program for 14–19-year-olds who are current smokers [13]. N-O-T was designed for use as an alternative to punitive measures in school, uses teen-friendly language, focuses on relevant teen issues, encourages active participation by participants, and is process oriented. There is also some flexibility in implementation of the program. For example, the standard 10 sessions may be offered over a shorter period of time than the usual 10 weeks. Further, although the curriculum was developed for implementation in school settings, it could easily be used in a community setting.

Preliminary analysis of data from evaluation studies found a N-O-T group quit rate to be 28%, compared with 5% for a brief intervention group (20 minutes of advice and self-help pamphlets). There was a significant reduction in week and weekend cigarette use, a 22.4% overall quit rate at 6-month follow-up, and the differences in the quit rate varied between boys and girls [13,14]. Overall, 84.6% of participants believed the program helped them alter their smoking behavior, and 55% felt better about themselves after participating in the program [14].

Implementation of standard N-O-T program. Chinese adolescent male smokers ($n = 17$) were recruited into the standard smoking cessation (SC) program from an Asian-American community organization that participated in an Asian Community Cancer Coalition. All adolescents recruited remained in the program. The study was conducted over a period of 6 weeks during the summer of 2001 and used a pre-post quasi-experimental research design using two related samples. The same participants' responses were measured pre-post test to determine the effect of the intervention. Participants' pre-post test survey responses were matched. All the smoking participants in the summer program decided to join the SC program. For the smoking cessation program, the participants had to be male, Chinese, between the ages of 14 and 19 years, and in the summer youth program. Males were selected because they are significantly more likely to be smokers than female Chinese. The youth were also at high risk, having siblings in prison and family members that were unemployed.

One 50-minute session was offered each week. Students' knowledge, attitudes and behavior concerning tobacco use and relevant cultural factors were measured by a questionnaire at the outset of, and after completion of the program. A survey was

also conducted to identify relevant cultural factors related to smoking.

The standard N-O-T curriculum pre-post test surveys, comprehensive versions, were used. A 23-item questionnaire was used from the NOT curriculum and 13 items were developed and added to measure culturally related factors. The questionnaire included items such as attendance at cultural/tradition-related functions, use of language, and social norms, symbols, and customs. The questionnaire measured frequency of smoking behavior on a typical weekend and weekday. Attitudes and reasons why adolescents smoke, program evaluation variables, and cultural factors were measured on a 5-point Likert scale. The post test, along with the cultural factors, was given to the participants after the 10 sessions.

Implementation of the ACT program. The ACT program was conducted through a community-based organization that served high-risk youth who are actively seeking help to improve their lives. Recruiting them into a smoking cessation program was considered an extension of the organization's youth program and a compliment to the youth's goal of improving their lives. Incentives were devised to recruit the youth. A buddy system was developed and participants received more monetary rewards if they brought their respective buddies and additional incentives (t-shirts, gift certificates) if they continued to attend the sessions. A total of 14 male Chinese smoking youth were recruited into the ACT program, of which 9 fully completed the program. The program was conducted over a 3-month period.

Data Analysis

SPSS 10.0 was used to analyze the data. Descriptive statistics were reported for demographic variables, attempts at quitting, age of initiation of smoking, number of quit attempts, social influences, reasons why adolescents smoke, reductions in cigarette use as a result of program exposure, cultural factors and satisfaction with program components. Post test differences between the ACT and SC groups were measured. The Mann-Whitney *U* test was used for continuous data and included the variables of typical weekend and weekday cigarette use, number of cigarettes reduced, beliefs about tobacco use, and reasons why Asian-American adolescents smoke.

The Chi-square test for independent samples was used to determine differences between groups for the length of the program, current smokers, social influences, and the evaluation of program variables

such as the importance of the facilitator characteristics, helpfulness of the activities, and helpfulness of the listed topics, which were measured by a 5-point Likert scale. For the purpose of this analysis, facilitator characteristics (not important, very important), helpfulness of activities (not helpful, very helpful), helpfulness of topics (not helpful, very helpful), and cultural factors (not often, often) were transformed into dichotomous variables from a 5-point Likert scale. An item that measured Asian friends accepting the person more as a nonsmoker (agree, disagree) was transformed into a dichotomous variable from a 4-point Likert scale.

Results

Sample Characteristics

The participants in the programs were Chinese-American male smokers between the ages of 14 and 19 years ($M = 17.7$ years of age, $SD = 2.2$). Approximately 67% of the participants in the ACT and SC groups were in grades 9–12 and about 35% were not in school. The majority of the adolescents (76.5%) lived with both parents.

Asian Adolescent Focus Group

Of the 17 adolescents who participated in the SC program, 15 participated in a focus group to identify cultural factors. Two participants opted not to attend the focus group. The following themes were identified: (a) youth pride in their ethnic heritage, (b) perception of high parental expectations for social and academic success, (c) like Asian cuisine, (d) rebel against a lack of independence, and (e) strong identification with American culture and desire to "fit in."

Asian Adult Focus Group

A focus group was conducted among Asian adult professionals ($n = 9$) to further identify cultural factors. The following themes were identified: (a) Asian youth show respect for their parents and authority figures, (b) Asian youth have pride in their Asian heritage, which included but was not limited to maintaining an Asian diet and retention of their language, (c) wanted their children to enjoy independence, (d) had high academic expectations of youth and it was considered to be a major stressor among Asian-American adolescents by the adults, and (e) harmony, not conflict, is important in Asian homes.

Cultural Modifications and the Development of ACT

As a result of a literature review and two focus groups, the following themes were chosen for the cultural modifications in the curriculum.

Interdependency and collective orientation. Collective orientation is important for Asian-Americans. Respect for parents/authority figures and interdependency are highly prized [15,16].

Harmony. Harmony is promoted in Asian families and this may influence a teen's desire to smoke, especially if members of the family smoke. Parent-child dynamics can be applied to smoking cessation curricula. This issue was addressed in the curriculum. The youth learned ways to communicate their needs in an assertive manner to parents and elders while maintaining harmony and respect [15]. This is a delicate matter because adolescents must show adults proper respect, but also it is important that they communicate their needs for a healthy environment.

Persistence, hard work, success, and education. Asian-Americans also place importance on persistence and hard work to improve themselves [15,17]. The attitude of persistence can be used to encourage Asian-American teens to quit smoking. The teens can be challenged to quit. Also, they may realize that smoking affects their academic performance in a negative way because of absences owing to smoking-related illnesses. The difficulties of quitting smoking were framed in the context of other difficult achievements in life and that the same effort had to be applied to be successful. The addictive qualities of tobacco use were discussed and skills were demonstrated and performed by participants to overcome these difficulties. The goal of these exercises was to enhance participant self-efficacy for quitting.

High parental expectations for academic and career success, and being immigrants or the children of immigrant parents, can cause stress for Asian-American teens. The parents promote the value of effort and the importance of education that leads to future professional success [17]. In the session that deals with stress, this stressor was addressed for Asian-American youth in the ACT curriculum. Youth were taught how to cope with parental expectations and the unique role of being the children of immigrant parents, in a healthy way.

Asian pride and social norms. Studies have shown that an Asian youth's emotional ties to his or her culture of origin may persist over time [15,16,18]. Asian-Americans may experience discrimination. Their racial identity persists despite being second-generation Americans and they may lack an ability to speak and write in their native language [18]. Promotion of ethnic pride is a means of improving self-image and self-esteem, especially among Asian-Americans. The bicultural model of acculturation holds that retaining elements of both traditional and host cultures maintains individual self-esteem [18]. This model implicitly acknowledges that positive group esteem will result in positive personal self-esteem. Positive self-esteem and positive talk may act as a promoting factor that supports the youth in their quitting efforts.

The ACT program seeks to apply these principles by incorporating Asian-American examples through role-plays, demonstrations, modeling, videos designed for Asian teens, and personal quitting stories. In addition, trivia questions on the achievements of famous Asian-Americans have been developed and incorporated to engender pride in these contributions to American culture. The trivia activity is designed to boost group esteem that may lead to an increase in personal self-esteem. Good personal self-esteem levels will support quitting efforts. This activity also is designed to produce a friendly and open atmosphere that will increase receptivity to facilitators and enhance the willingness to discuss the content. Teens are encouraged to remember trivia information as well as key points in the lessons. The trivia activity encourages retention of the lesson content that may be related to greater quitting efficacy.

Components in the ACT program have been developed to maintain sensitivity to the blending of Western and Eastern attitudes that may be present in the participants [15,16]. When possible, this bicultural influence is highlighted and used to enhance the discussion of key points of the sessions. Curriculum components, such as handouts, videos featuring Asian youth, and exercises, were developed and implemented.

Smoking and Quitting Behavior

As shown in Table 1, the mean age of initiation ranged from 13.3 to 13.9 years, and the youth had smoked for about 3.5 to 4.8 years. The adolescents smoked on average about 6.4 to 7.1 cigarettes daily during the first year of regular smoking. Approxi-

Table 1. Tobacco Use and Quitting Behaviors

	Pre ACT Program (n = 9)	Post ACT Program (n = 9)	Pre SC Program (n = 17)	Post SC Program (n = 17)	Post program <i>U</i>
Smoking behavior ^a					
Age of initiation	13.3 (2.6)	—	13.9 (2.1)	—	
Length of time smoking (years)	4.8 (3.7)	—	3.5 (3.2)	—	
During first year smoked regularly, how many cigarettes smoked typically in one day	7.1 (5.6)	—	6.4 (6.2)	—	
Number of cigarettes on typical weekday	18.3 (20.5)	16.1 (15.3)	12.3 (18.6)	10.6 (20.4)	43.5
Number of cigarettes on typical weekend day	16.8 (13.4)	11.0 (7.3)	14.3 (13.3)	9.2 (8.3)	57.0
Cigarettes reduced on typical weekday	—	6.7 (5.9)	—	5.4 (5.6)	51.5
Cigarettes reduced on typical weekend day	—	6.0 (6.5)	—	5.6 (4.9)	72.0
					χ^2
Quit smoking(%)	—	0	—	22.2	2.4
Percentage of reduction among reducers		37.0		33.0	
Quitting behavior					
Have ever tried to quit(%)	77.8	77.8	70.6	70.6	χ^2
Number of quit attempts ^a	3.1 (2.4)	—	2.3 (1.5)	—	.16
How did you try to quit(%)					
On my own	85.7	—	91.7	—	
In a group	—	—	8.3	—	
Other	14.3	—	—	—	<i>U</i>
Belief in ability to quit ^{a,b}	3.1 (.69)	3.3 (.5)	3.7 (1.0)	4.2 (.9)	25.5*
Desire to quit smoking ^{a,c}	3.7 (1.2)	3.7 (1.0)	3.0 (1.3)	3.9 (1.0)	68.0
Social influences(%)					
Parent smokes	77.8	—	58.8	—	.93
Sibling smokes	75.0	—	76.5	—	.01
Close friend who smokes	100.0	—	82.4	—	1.8

* $p < .01$.^a Mean (SD).^b Where 1 = not at all; 2 = not very much; 3 = not sure; 4 = somewhat; 5 = very much.^c Where 1 = no thoughts of quitting; 2 = need to quit some day; 3 = should quit, but not ready; 4 = thinking about quitting; 5 = trying to quit or cut down.

ACT = Asian Youth Choose Tobacco Free; SC = Standard Smoking Cessation Program.

mately 70.6% in the SC group and 77.8% in the ACT group reported having ever attempted to quit smoking, 91.7% in the SC group and 85.7% in the ACT group tried to quit on their own, and there were 2.3 quit attempts in the SC group and 3.1 attempts in the ACT group. The participants in the ACT program had a higher proportion of parents and friends who smoked than the SC group. A Mann-Whitney *U* test indicated that youths in the SC program were significantly more likely to report that they believed they could quit than those in the ACT group.

After the program intervention, 22.2% reported having quit smoking in the SC group, whereas none quit in the ACT group. The ACT group showed a greater reduction in typical weekday ($M = 6.7$, $SD = 5.9$) and weekend ($M = 6.0$, $SD = 6.5$) tobacco use than the SC group.

Beliefs About Tobacco Use

As shown in Table 2, the ACT group ($M = 2.0$) was significantly less likely to agree that smoking con-

trolled weight than the SC group, ($M = 3.0$; $U = 41.0$, $p < .05$). Beliefs about smoking in both groups moved in the desired direction for items such as: smoking calms people down, person's body heals quickly after quitting, smoking will not hurt if one exercises, most teens can stop smoking when they want to, smoking is effective to deal with stress, people have more fun when they smoke, can smoke without getting hooked, laws should limit advertising.

Reasons Asian Adolescents Smoke

The leading reasons reported as to why the Asian adolescents smoked included when they were angry, upset, want to relax, when they feel down or worried, lighting up process is enjoyable, and when they run out of cigarettes they feel uncomfortable (Table 2). Significantly more youths in the SC group ($M = 4.2$) indicated they smoked when upset than in the ACT group, ($M = 3.2$; $U = 41.5$, $p < .05$).

Table 2. Asian Adolescent Beliefs About Tobacco Use and Reasons for Smoking

	Pre ACT Program Mean (SD) (n = 9)	Post ACT Program Mean (SD) (n = 9)	Pre SC Program Mean (SD) (n = 17)	Post SC Program Mean (SD) (n = 17)	Post Program <i>U</i>	Pre Program <i>U</i>
Beliefs about tobacco^a						
Smoke long time to hurt health	3.3 (.9)	3.1 (1.1)	2.9 (1.0)	3.8 (1.3)	61.5	
Smoking calms people	2.2 (.4)	2.4 (1.2)	2.3 (.9)	2.5 (.9)	63.5	
Teens who smoke are more popular	3.7 (.7)	3.3 (1.3)	4.1 (.9)	3.7 (1.2)	72.5	
Person's body heals quickly after smoking	3.0 (.7)	2.4 (1.0)	3.2 (1.2)	2.9 (1.2)	71.0	
Smoking will not hurt me if I exercise	3.6 (.7)	4.1 (.78)	3.5 (1.2)	3.8 (.8)	69.5	
Parties are better if people smoke	4.0 (.7)	3.4 (1.3)	3.1 (1.0)	3.3 (1.0)	72.5	
Smoking controls weight	2.8 (1.0)	2.0 (1.3)	2.9 (.9)	3.0 (1.1)	41.0*	
Most teens can stop smoking when want to	3.4 (.5)	3.7 (1.3)	3.5 (1.1)	3.7 (.9)	79.5	
Smoking effective to deal with stress	2.3 (.7)	2.3 (1.3)	2.1 (.8)	2.5 (.7)	68.5	
People have more fun when smoke	3.4 (.9)	3.6 (1.3)	3.0 (.8)	3.3 (.7)	56.0	
Can smoke without getting hooked	3.3 (.7)	3.9 (.78)	3.7 (.8)	3.5 (1.2)	64.5	
Laws should limit advertising	2.7 (1.1)	2.4 (1.3)	2.5 (1.6)	2.3 (1.1)	73.0	
Most kids my age smoke at school	1.7 (.5)	1.4 (1.3)	1.9 (.7)	1.9 (.8)	48.5	
Reasons for smoking^b						
Slow down or lose energy	2.1 (1.4)	—	1.9 (1.2)	—		68.5
To hold a cigarette	2.9 (.33)	—	2.4 (.8)	—		47.5
To relax	3.3 (1.4)	—	4.0 (.9)	—		54.5
When I am angry	4.0 (1.3)	—	4.2 (1.2)	—		69.5
When I run out of cigarettes, I am uncomfortable until I get more	3.8 (1.3)	—	3.1 (1.3)	—		54.0
Smoke automatically, don't think about it	3.1 (1.5)	—	2.7 (1.1)	—		62.5
I smoke to perk up	2.7 (.7)	—	2.5 (.9)	—		72.5
Lighting up a cigarette is enjoyable	2.2 (1.1)	—	2.5 (1.3)	—		69.0
For pleasure	2.7 (1.5)	—	3.2 (1.1)	—		57.0
When I am upset	3.2 (1.3)	—	4.2 (.9)	—		41.5*
When not smoking, I am very aware of it	3.2 (1.3)	—	3.2 (1.2)	—		76.5
Enjoy watching exhaled smoke	2.4 (1.0)	—	2.5 (1.5)	—		74.5
When I am worried or down	3.4 (1.4)	—	3.7 (1.1)	—		69.5

* $p < .05$.^a1 = strongly agree; 2 = agree; 3 = not sure; 4 = disagree; 5 = strongly disagree.^bWhere 1 = never; 2 = seldom; 3 = sometimes; 4 = often; 5 = always.

ACT = Asian Youth Choose Tobacco Free; SC = Standard Smoking Cessation Program.

Program Evaluation

Overall, 66.7% of participants reported that the program length was "about right" in both groups (Table 3). The majority of adolescents in the SC and ACT programs thought that the program was very important in helping them quit smoking. The facilitator characteristics most important to the smokers in the ACT program included: caring about students, confidentiality was kept, was trustworthy, and was nonjudgmental. The adolescents in the ACT and SC programs reported that the relaxation exercises, deep breathing exercises, keeping track of cigarette use, and the group exercise chart were the most helpful activities in the program. The adolescents rated the following topics in both the SC and ACT programs as the most helpful: dealing with cravings, dealing with family/friends pressure, nicotine's effect on the body, facts about smoking, withdrawal symptoms/

signs of healing, getting support, and stress management.

Cultural Norms

Adolescents reported that they spoke their native language fairly often with their parents and sometimes with their friends, and almost never read their native language (Table 4). Adolescents reported that they disagreed that their friends would accept them more if they were nonsmokers. They sometimes liked American food more than Asian food and they thought they smoked fairly often because of high parental expectations. Using examples from their culture may sometimes or fairly often help them to understand a smoking cessation program better. Additionally, they reported that they very often believe cigarettes can cause cancer and disease and

Table 3. Smoking Cessation Program Evaluation

	ACT (n = 9) (%)	SC (n = 17) (%)	χ^2
Program length			
Too long	22.2	22.2	
Too short	11.1	11.1	
About right	66.7	66.7	.00
Importance of program in helping you quit	Very important 88.9	Very important 83.3	.14
Importance of facilitator characteristics			
No nagging/preaching	44.4	72.2	1.99
Nonjudgmental	66.7	83.3	.96
Trustworthy	88.9	94.4	.27
Cares about students	100.0	94.4	.46
Prepared for each session	88.9	88.9	.00
Kept group information confidential	100.0	88.9	1.08
Nonsmoker	44.4	55.6	.30
Ex-smoker	33.3	55.6	1.19
Helpfulness of activities	Very helpful	Very helpful	
Journaling	55.6	50.0	.07
Group exercise chart	75.0	64.7	.27
Pack tracks	77.8	55.6	1.27
Deep breathing	66.7	83.3	.96
Relaxation exercise	66.7	77.8	.39
Participant/facilitator commitment contracts	44.4	72.2	1.98
Helpfulness of topics	Very helpful	Very helpful	
Reasons teens smoke	66.7	66.7	0
Facts about smoking	77.8	83.3	.12
Nicotine and what it does to your body	77.8	94.4	1.70
Triggers for smoking	77.8	94.4	1.68
Withdrawal symptoms/signs of healing	87.5	88.9	.01
Getting support	77.8	83.3	.12
Dealing with cravings	88.9	94.4	.27
Positive self-talk	55.6	50.0	.07
Rewarding yourself	66.7	61.1	.08
Stress management	88.9	55.6	3.0
Dealing with family/friends pressure	88.9	82.4	.19
Healthy food choices	77.8	64.7	.47
Importance of having separate male/female groups	Very important 44.4	Very important 26.7	.80

ACT = Asian Youth Choose Tobacco Free; SC = Standard Smoking Cessation Program.

fairly often believe they can get a disease or cancer from smoking. Over 77% of Asian teens perceived that 40% or more of their Asian-American peers smoke.

Three-Month Follow-Up

At 3-month follow-up, there was a 23.1% cessation rate among the SC group and an 18.2% among the ACT group (Table 5). Among those that continued to smoke, there was a significant difference between the SC group ($M = 7.4$ weekday cigarettes, $M = 10.0$ weekend cigarettes), compared with the ACT group, which smoked 13.9 and 20.8, respectively. There was no significant difference between reported reduction

of typical weekend and weekday tobacco use between the SC and ACT groups. The SC group ($M = 4.1$, $SD = .74$) was significantly more likely to believe that they were able to quit smoking than the ACT group ($M = 3.2$, $SD = .67$), $U = 18.5$, $p < .05$).

Discussion

Factors such as interdependency and collective orientation, the importance of harmony, focus on persistence, hard work, success, and a good education, social norms that tolerate and accept smoking, tobacco marketing of particular ethnic/racial groups, high parental expectations, and ethnic pride were

Table 4. Cultural Factors

	ACT (n = 9)	SC (n = 17)	χ^2
Asian friends accept me more if nonsmoker ^a	33.3	29.4	.04
Often Speak native language with parents ^b	100.0	76.9	10.80
Speak native language with friends ^b	22.2	17.6	.08
Read native language ^b	11.1	11.8	.01
Like American food more than Asian food ^b	11.1	17.6	.19
Proud to be Asian ^b	100.0	100.0	—
Using examples of people from my ethnic culture would help understand the program. ^b	0	28.6	2.14
Smoking cigarettes can cause cancer and disease ^b	66.7	100.0	3.27
I believe I will get a disease or cancer from smoking ^b	50.0	53.8	.02
Frustration and smoke from high parental expectations ^b	37.5	66.7	1.65
Asian teens who smoke (%)			
0–20	11.1	0	
21–40	—	29.4	
41–60	—	47.1	
61–80	88.9	17.6	
81–100	—	5.9	

^a Where 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree.

^b Where 1 = never; 2 = sometimes; 3 = fairly often; 4 = very often; 5 = all the time.

ACT = Asian Youth Choose Tobacco Free; SC = Standard Smoking Cessation Program.

identified and integrated into the ACT program. For example, whereas smoking cessation curricula may include a stress reduction component, the ACT curriculum provides a component on how to cope with high parental expectations.

The Asian-American focus on interdependency and collective orientation can be applied to parental involvement in a cessation program. Quitting smoking may reflect well on the family. Respect for parents and parental involvement may assist teens to quit smoking. Social support may also be necessary for adolescents. For example, it was found that for Vietnamese youth, involvement with Vietnamese culture is related to greater quality of family relationships than involvement with U.S. culture [19]. Although filial piety is an important value in Vietnamese culture, these youth are also influenced by the prevailing American culture. This experience is common to Chinese youth who are bicultural and struggle with competing values. Social influences help determine initiation and maintenance of tobacco use and so quitting can be a major challenge because it

Table 5. Tobacco Use and Quitting Behaviors at 3-Month Follow-up

	SC Program (n = 13)	ACT Program (n = 9)	χ^2
Smoking behavior ^a			
Quit smoking(%)	23.1	18.2	.09
Number of cigarettes on typical weekday ^a	7.4 (7.1)	13.9 (7.5)	21.5*
Number of cigarettes on typical weekend day ^a	10.0 (7.9)	20.8 (12.2)	18.5*
Cigarettes reduced on typical weekday ^a	3.0 (2.6)	2.6 (1.9)	37.0
Cigarettes reduced on typical weekend day ^a	8.3 (12.4)	2.8 (2.1)	32.0
Quitting behavior			
Belief in ability to quit ^{a,b}	4.1 (.7)	3.2 (.7)	18.5*
Desire to quit smoking ^{a,c}	3.7 (1.4)	3.1 (1.3)	34.0

* $p < .05$.

^a Mean (SD).

^b Where 1 = not at all; 2 = not very much; 3 = not sure; 4 = somewhat; 5 = very much.

^c Where 1 = no thoughts of quitting; 2 = need to quit some day; 3 = should quit, but not ready; 4 = thinking about quitting; 5 = trying to quit or cut down.

ACT = Asian Youth Choose Tobacco Free; SC = Standard Smoking Cessation Program.

may be difficult to find support in this challenging cultural context. Social support is important to assist adolescents in quitting and they may need to spend time on the process of developing this skill to enhance the likelihood of their ability to quit.

A major challenge to increased parental involvement is that often youth are reluctant to participate in smoking cessation programs because they do not want their parents to know that they smoke. In the ACT program, parental consent is requested and Asian adults were used to conduct the program. Further, the program was conducted in an Asian-American community-based organization and the participants were referred to the program by organization leaders. ACT sessions stressed the importance of participant health for their own individual achievements and success, and also for the success of their families and their community.

Tobacco companies selectively market their product to target populations. Smoking cessation programs have attempted to make adolescents aware that they are being targeted and to develop skills to resist the marketing messages. Youth need to realize that external influences determine their individual behaviors such as smoking [16]. If the external manipulation can be recognized, then effective coping skills can be learned. An appeal to authority may be

properly used to reduce tobacco use among this population, an approach used successfully in uniting African-Americans against tobacco industry campaigns [20].

The adolescents indicated that they would not necessarily be more accepted by their friends if they were nonsmokers, and a large percentage thought that the majority of their peers smoked, which reflects socially normative behavior. Among Asians, offering cigarettes to others is a reflection of friendliness, generosity, or of being a good host. This was addressed in the session dealing with peer pressure in the curricula.

Culturally modifying programs for Asian-American youth is complicated because the youth are bicultural. They identify with two cultures and the smoking cessation program should reflect that experience. Community-based organizations that serve Asian-Americans can be locations to recruit smokers because they serve Asian-Americans and improve their lives.

There are challenges in conducting ethnically and racially specific smoking cessation programs in schools, such as communicating with varying departments within the school district to achieve necessary permissions, difficulty in identifying Asian adolescent smokers because students do not disclose their smoking status, and truancy among smokers. Peer leaders can enhance program performance and assist in recruitment efforts if they are properly selected and are not merely attracted to the incentives. Peer leaders can become frustrated at the challenges in recruiting peer participants and they may be hesitant to disclose names of friends who are smokers. Further, student smokers may fear that the smoking cessation program is affiliated with school disciplinary programs for students caught smoking. Community-based organizations can serve as an alternative or work in conjunction with school-based programs.

As indicated by the participants in this study, staff enthusiasm and commitment is important whether the course is conducted in a school or community-based setting. In our study, we found that Chinese-American adolescents valued staff care and trust the most.

Studies regarding the generic program reported quit rates between 22.4% and 28% [13,14]. In our study, we found a 23.1% quit rate for the SC program and an 18.2% quit rate for the ACT program at 3-month follow-up. Among those participants who continued to smoke, there was a larger reduction in reported weekend and weekday cigarette use among

ACT participants than the SC group. The reduction in our study was less than that reported in other studies in which there was a reduction of weekday cigarette use by 8 cigarettes per day, and 14 per weekend day [13,14]. There are a number of reasons that may account for these differences. First, adolescents were selected from a community-based organizational setting and not from a school setting, as is typical of the SC program. This created some difficulties in absenteeism and inability to attend all the sessions. Second, many adolescents were at high risk socially and economically. Further, the students used to test the ACT program started smoking earlier, smoked longer, and smoked more cigarettes than the adolescents in the SC program. Given the atypical high risk status of these adolescents, higher quit and reduction rates may be possible with a more typical Asian-American adolescent smoker. Fourth, the ACT program is intended for those individuals who are ready to quit or reduce their smoking frequency. Although all voluntarily participated in this study, many were not ready to quit. The fact that there was an 18.2% smoking cessation rate even though the group was at higher risk suggests that the ACT program needs further testing with a larger sample.

There was a significant difference between the ACT and SC groups in perceived ability to quit. The SC group thought more about quitting than the ACT group. A similar shift in perception that adolescents can get hooked on cigarettes was not reflected in the data, indicating either a poor understanding of the addictive nature of nicotine, or adolescents' unwillingness to accept the fact that they can get addicted to nicotine. There were no differences in desire to quit between the groups, which may indicate they gained self-efficacy in thinking that they could quit. However, their desire did not change drastically from the time they started the program, which may indicate that they did not change the stage in which they started.

Most of the attitudes in both the SC and ACT groups shifted in the desired direction, even though these were high-risk youth. This may indicate that exposure to the program did have some effect, and that longer exposure may be necessary for increased change in attitudes and increased reduction in the quitting rate and in smoking frequency. Adolescents in the ACT group were more likely to agree that one had to smoke for a long time to develop health problems, that smoking calms a person down, teens who smoked were popular, a person's body healed quickly after smoking, smoking controlled weight and was effective in dealing with stress, that most

kids their age smoked at school, and that they were not likely to get addicted, than the SC group. Data indicate that the ACT group started smoking earlier, smoked more, thought about quitting less, and were not as likely to believe they had the ability to quit, than the SC group.

The mean age of initiation was between 13.3 and 13.9 years, more than a year later than the general American population, which is between 11 and 13 years of age [21]. The underlying reason for their smoking was emotional, describing this as being upset, angry or worried, or for relaxation. These reasons are consistent with reports of other studies [22,23]. This suggests that stress management and relaxation are especially important program components, as underscored by the high rating given them by adolescents. More than 70% tried to quit on their own at least twice, indicating a strong desire to quit even in the face of failure, findings consistent with previous studies that showed that most adult smokers had begun smoking during adolescence, and despite a desire to quit, had failed [8,24–26]. Nonetheless, the positive change in attitude toward cessation, and adolescents' belief that they can quit, indicate the importance of early intervention.

The ACT program was evaluated to be as effective as the SC program in its implementation. Asian adolescents perceived the programs as important in helping them to quit, underscoring the importance of facilitators in the process, citing their ability to care, their ability to keep confidentiality, their trustworthiness, and their nonjudgmental behavior.

Limitations

This pilot study had three limitations. First, the sample was small. The study identified key cultural factors to be included in a smoking cessation program for adolescent Chinese smokers and examined the feasibility of incorporation of these factors into a curriculum. Group comparisons were conducted for pre-test and post-test survey results, future studies that examine the efficacy of the program with a larger sample size should control for pre-test levels of smoking quantity and frequency of tobacco use. Further, repeated measures analyses should be employed to examine changes in scores over time. Second, the sample was known to be at a higher risk than is typical of Asian-American youth. For these two reasons, generalization to the larger Asian population is limited. However, we believe that the process used to identify cultural factors to enhance smoking cessation curricula is valid, and because it

has been conducted among high risk youth, it may be more effective among a more typical population of Asian-American youth. Third, given the larger Chinese representation in the process, the curriculum may be more appropriate for this Asian subgroup than other Asian groups. Future research addressing culturally relevant factors that enhance the efficacy of the ACT curriculum needs to be implemented among a larger and more representative Asian-American group.

Smoking remains the leading cause of illness among Asian-Americans. A successful smoking cessation program designed for these communities is necessary to reduce existing smoking rates. The ACT curriculum provides modifications to standard curricula that includes handouts, videos, learning exercises, and curriculum narrative that professionals working in smoking cessation would find useful in addressing the needs of Asian-American adolescents.

This research was funded by the National Cancer Institute as a supplement pilot study under the parent grant "Asian Tobacco Education, Cancer Awareness and Research." We are grateful to members of the Asian Community Cancer Coalition for their contributions to data collection, co-presenting and co-publishing this article, to Frank Jackson and Dr. Kenneth Chu for input on the study.

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