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Culturally informed smoking cessation strategies for Native Hawaiians

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We examined the perceived supports and barriers and the smoking cessation strategies used by Native Hawaiian former and current smokers for the purpose of developing a culturally informed smoking cessation program. Ten focus groups with a total of 52 Native Hawaiian men and women were convened in a rural community in Hawaiʻi. Thematic analysis of focus group transcriptions resulted in the identification of 11 strategies and 23 supports for and 13 barriers to smoking cessation that were categorized into social, psychological, physical, political, economic, behavioral, and spiritual factors. Native Hawaiian former smokers (compared with current smokers who had tried to quit) found social, psychological, and physical factors helpful in supporting smoking cessation and remaining smoke free. They also reported having used more behavioral and religious/spiritual strategies to quit smoking compared with current smokers. The stories of former smokers also spoke to the importance of family and their religion/spirituality in quitting. Consistent with the findings from other studies, multiple factors were implicated in smoking behavior, suggesting that a multicomponent strategy may be beneficial for addressing the social, psychological, and physical factors related to smoking that we observed in our sample of Native Hawaiians. We also recognize that religion/spirituality is an integral part of Native Hawaiian culture and that church-based support of smoking cessation may help those Native Hawaiians for whom religion/spirituality is an important source of inspiration and guidance.

Introduction

Cigarette smoking is a modifiable behavioral risk factor for lung cancer and pulmonary and cardiovascular disease (Center for Disease Control and Prevention [CDC], 2001). It is estimated that 20.9% of the U.S. adult population are cigarette smokers (CDC, 2005). Native Americans/Alaskan Natives and Native Hawaiians, the indigenous peoples of the United States, have the highest smoking prevalence (40.4% and 32%, respectively) of all major U.S. ethnic groups (CDC, 2004; Kaholokula, Grandinetti, Crabbe, Kenui, & Chang, 1999). Among other U.S. ethnic groups, the prevalence of smoking ranges from 12.3% for Chinese to 27.4% for non-Hispanic Whites (CDC, 2004). Because of this large smoking disparity between the indigenous populations and other U.S. ethnic groups, the development of smoking cessation interventions for specific indigenous U.S. populations is needed (CDC, 2003; Kaholokula, Braun, Kana'iaupuni, Grandinetti, & Chang, 2006).

Smoking cessation is difficult for people because it involves multiple factors that serve to maintain smoking behavior (Abrams & Niaura, 2003), such as physical addiction (e.g., effects of nicotine in the brain), psychological factors (e.g., learned habits), and environmental cues (e.g., peer smoking). The tobacco cessation programs that yield the highest 6- to 12-month abstinence rates utilize a combination

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of strategies, such as nicotine replacement therapy (NRT) and individual or group behavioral strategies (Abrams & Niaura, 2003). For example, treatment outcome studies (with 6- to 12-month post-treatment follow-up) have yielded 23%–35% abstinence rates for multicomponent smoking cessation interventions that include pharmacotherapy and behavioral strategies (Fiore et al., 2000), compared with only 17% for NRT alone (Silagy, Lancaster, Stead, Mant, & Fowler, 2004), 14%–20% for brief interventions, 10% for self-help approaches (Alterman, Gariti, & Mulvaney, 2001), and 10% for physician-advice programs (Fiore et al., 2000). The modest 23%–35% abstinence rates obtained from multicomponent smoking cessation interventions, which is superior to other intervention strategies, illustrates both the difficulty people experience in quitting and the multifactorial nature of smoking. Adding to the complexity of smoking cessation, smoking behavior among indigenous peoples of the United States could be strongly influenced by unique sociocultural factors (Kaholokula et al., 2006), factors not often the focus of traditional smoking cessation interventions.

Some of the sociocultural factors believed to play a role in smoking behavior among indigenous populations in the United States are associated with cultural traditions as well as with acculturative and economic stressors (Kaholokula et al., 2006; Struthers & Hodges, 2004). For example, tobacco is part of spiritual and healing practices in some Native American groups (Unger, Soto, & Baezconde-Garbanati, 2006). For Native Hawaiians (the indigenous people of Hawai'i) acculturative stressors are believed to be associated with high-risk behaviors, such as substance abuse (Marsella, Oliveira, Plummer, & Crabbe, 1995). As with other indigenous populations, Native Hawaiians are more likely than other ethnic groups to cluster in lower socioeconomic strata (SES) and are under-represented in higher education (Marsella et al., 1995), which has been associated with increased smoking (Kaholokula et al., 1999). Studies also have found that smokers of a lower SES are less likely to successfully quit smoking compared with those of a higher SES (Osler & Prescott, 1998). The association of sociocultural factors and smoking among indigenous populations in the United States suggests the need for culturally informed smoking cessation interventions.

Studies have reported on the benefits of smoking cessation programs for Native Americans and Alaskan Natives (Horn et al., 2005), but little is known about smoking cessation among Native Hawaiians. Chen's (2001) review of tobacco cessation research for Asian and Pacific Islanders found no peer-reviewed articles on Pacific Islanders. However, a study of New Zealand's *Aukati Kai Paipa* program, a culturally appropriate and integrated behavioral counseling and pharmacological smoking cessation program for female Māori (the indigenous Pacific peoples of New Zealand) found that 29% of Māori women in the program had quit smoking compared with 12.5% of Māori women who were not in the program but quit smoking over a similar time period (*Aukati Kai Paipa*, 2000). Their intervention was recognized as being culturally appropriate because it was operated within Māori communities by Māori quit coaches who had a high degree of credibility within their respective communities and familiarity with Māori customs and practices.

More than half (52.1%) of Native Hawaiians have reported smoking sometime in their life, and the prevalence of current smoking (22.7%–32%) is notably higher in this population than among other major ethnic groups residing in Hawai'i (Kaholokula et al., 1999; Kaholokula et al., 2006). The reported success of the *Aukati Kai Paipa* (2000) study led us to believe that a culturally informed smoking cessation program that combined behavioral and pharmacological approaches could be successful for Native Hawaiians, given that Māori and Native Hawaiians share common cultural traditions and a similar acculturation history. To inform the development of such a program, we conducted a qualitative investigation among Native Hawaiian former and current adult smokers in a large rural community of Hawai'i. Our objectives were (a) to determine if a smoking cessation program that combined behavioral and pharmacological strategies would be consistent with the preferred smoking cessation strategies of Native Hawaiians and (b) to identify supports for and barriers to smoking cessation for this ethnic population.

Method

Study design

A series of focus groups with Native Hawaiian former and current cigarette smokers were convened to meet our study objectives. The use of focus groups is an appropriate research strategy to learn about a specific phenomenon, in this case the lived experiences of Native Hawaiians with smoking cessation (Cresswell, 1994). The method also is congruous with Native Hawaiians' strong oral tradition (Pukui, Haertig, & Lee, 1979). Many Native Hawaiians prefer to share their experiences orally and face-to-face (compared with surveys or telephone interviews), allowing them to gauge the researcher's intent, sincerity, and trustworthiness as information is exchanged (Braun, Mokuau, Hunt, Kaanoi, & Gotay, 2002; Braun, Mokuau, & Tsark, 1997).

We segregated former and current smokers in the focus groups so that questions could be tailored to elicit smoking cessation information (e.g., How did you quit smoking? vs. What makes it difficult to stop?) relevant to the experience of each. Because a previous investigation of Native Hawaiian smokers found gender differences in smoking initiation (Kaholokula et al., 2006), an attempt was made to segregate focus groups of current and former smokers by gender for the same reason the groups were segregated by smoking status.

Participants

Focus group participants were recruited through the Kōhala Health Research (KHR) Project (formerly known as the Native Hawaiian Health Research Project), a multiethnic, community-based epidemiological study of diabetes and cardiovascular disease risk factors among adult residents (aged 18 years or older) of the North Kōhala district on the island of Hawai'i. Of the 1,462 participants of the KHR Project, 489 (43%) were Native Hawaiian, of whom 111 were current smokers (people who reported having smoked 100 or more cigarettes in their lifetime and currently smoked, regardless of number of cigarettes smoked daily) and 141 were former smokers (people who reported having smoked 100 or more cigarettes in the past but no longer smoked at the time of this study, regardless of number of cigarettes smoked daily). These definitions of former and currents smokers are commonly accepted and widely used in smoking-related studies (CDC, 2005).

An invitation letter was sent to the 252 Native Hawaiian KHR participants who were identified as former and current smokers; 75 individuals expressed an interest in participating in our focus groups. Of the interested individuals, 52 participated. The 23 nonparticipants noted schedule conflicts as the reason for not participating. All 75 individuals completed a brief mail-out survey to gather updated sociodemographic data. An analysis of the sociodemographic data found no significant differences in sex distribution, mean age, or smoking status between those who participated and those who did not.

Procedures

We convened a total of 10 focus groups: six focus groups comprised 29 former smokers (two male-only groups, two female-only groups, and two mixed-gender groups) and four comprised 23 current smokers (one male-only group, one female-only group, and two mixed-gender groups). Focus groups assignments were made by the investigators based on (a) participants' preferred meeting times from several available meeting times, (b) smoking status, and (c) gender. Although we intended to segregate focus groups by gender as well as smoking status, we needed to mix the genders for the last 4 of the 10 focus groups to accommodate the participants' preferred meeting times. Native Hawaiian health professionals (authors JKK and HKC) facilitated the focus groups with assistance from KHR community-based employees and members of *'Imi Hale*: Native Hawaiian Cancer Network, a program to enhance research among Native Hawaiians and the skills of Native Hawaiian researchers (Braun, Tsark, Santos, Aitaoto, & Chong, 2006). Each focus group session was held in the North Kōhala community and lasted approximately 2 hr, including the completion of the informed consent process and a smoking history survey (age at initiation, number of cigarettes smoked per day, age at cessation if appropriate, current age, gender, marital status, and educational attainment). Survey data (age, gender, marital status, and smoking history) were analyzed using JMP Statistical Software for Windows, release 5.1.

Each focus group was opened with a *pule* (prayer) from an elder in the group and an explanation of our purpose by the facilitator—to seek information that would help in developing a smoking cessation program for Native Hawaiians. Then each member introduced himself or herself by sharing background information, including ancestral and familial lineage. In Native Hawaiian culture, such disclosure reflects the importance of '*ohana* (family) and of establishing new relationships through shared connections. Although this level of sharing may be considered a breach of individual confidentiality in mainstream focus groups, it is appropriate and expected in Native Hawaiian groups and is essential for building a trusting environment for dialogue (Braun et al., 2002).

The open-ended focus group questions differed slightly for current and former smokers. Current smokers were asked (a) Have you ever been told to quit smoking? By whom? (b) Have you ever tried to quit smoking? What was your experience? (c) What makes it difficult to stop? (d) What would be most helpful for you to quit smoking? and (e) If we were to design a program to help you quit smoking, what would it look like? Former smokers were asked (a) Why did you quit smoking? (b) How did you quit smoking? What was most helpful? (c) What made it difficult? (d) If another Native Hawaiian wanted to quit smoking, what advice would you give this person? and (e) If we were to design a smoking cessation program for North Kōhala residents, what kind of a program do you think would be successful? In all focus groups, we also asked, Do Native Hawaiian women smoke for different reasons than Native Hawaiian men? Additional questions were

posed by the facilitators either to follow up in more detail about ideas shared by participants or to elicit additional responses from them. These questions were composed by the facilitator during the focus group to ensure that the needed information to meet our objectives was obtained, such as the use of specific smoking cessation strategies, barriers, and supports and the use of NRT and other pharmacotherapy approaches.

As participants responded to focus group questions, key concepts and responses were recorded on flipcharts to ensure that their ideas were captured accurately. All participants gave permission to audio record the focus group conversations for later transcribing. After the focus group discussions, participants completed a demographic survey that collected information on their age, gender, and smoking history. When the survey was done, another *pule* was given and food was served. Because reciprocity is a culturally appropriate norm, participants were given a *makana* (gift) of US$25 for their contribution.

Qualitative data analysis

The audio recordings of the focus group conversations were transcribed, with each remark attributed to its speaker using his or her initials only. Four researchers (JKK, KLB, JIS, and HKC) independently read the focus group transcripts to extract key themes and examine structures in the data (Cresswell, 1994). Four meetings with all four researchers were held over a 2-month period to discuss independently identified themes and discuss possible meanings. Consistent with the literature, we found that multiple factors served to maintain smoking behavior and influence cessation among our sample of Native Hawaiians. Therefore, we decided to structure the data analysis around broad categories of smoking supports and barriers: social, psychological, physical, political, economic, behavioral, and spiritual. The decision about which themes to collapse into which categories was derived rationally. For example, themes related to physical cravings, physical responses to nicotine, physical health, and use of NRT were categorized into the physical category, whereas themes related to family support to quit and inability to quit because of friends and family who smoke were categorized into the social category (Table 2). Within these broad categories, we then distinguished between factors that supported smoking cessation and factors that served as barriers to smoking cessation. Support factors consist of themes that aided in smoking cessation, such as reasons for quitting, motivators, and other facilitating factors, whereas barriers consist of themes that impeded or inhibited smoking cessation. These categories helped us to organize the themes into meaningful domains to better understand important areas to target in a smoking cessation program for Native Hawaiians.

High agreement existed among investigators on themes and the participants who spoke to each. Disagreement was discussed until consensus was reached. We counted the number of participants (out of 52) across focus groups who spoke to each theme. Because not every individual spoke to every theme and because we did not count participants who may have nodded in agreement with the last speaker before speaking to a different theme (common in focus group and ordinary conversation), participants' support for themes may have been underestimated. Extracted themes from each participant were managed using Microsoft Excel 2003.

In addition to developing a structural description of this phenomenon, we identified individuals whose stories reflected the experiences of many of the participants (Cresswell, 1994). All four researchers agreed on the stories that best reflected the experiences of successfully and unsuccessfully quitting cigarettes.

Results

Participants' characteristics

Participants' characteristics are summarized in Table 1 by smoking status (former and current smokers) and combined sample. Our sample had slightly more female current smokers than males, but about equal male and female former smokers. A majority of current and former smokers were married, but there were more single current smokers than single former smokers. A majority of current smokers had, at most, a high school education and more former smokers had attended college. Former smokers were older and smoked more cigarettes per day (when they smoked in the past) compared with current smokers. The mean age at which participants started cigarette smoking was similar between smoking statuses, and the mean number of years spent smoking was greater for current smokers. The mean reported age at which former smokers quit was 33.3 years (SD=14.7), and their mean years being smoke free was 19.8 (SD=9.3).

Of the former smokers, 8 (28%) reported being able to successfully quit on their first attempt; 10 (35%) reported that it took two to four attempts; and 6 (21%) took five attempts or more (five former smokers did not recall the number of attempts). Of the current smokers, 16 (70%) had attempted to quit one to four times, 3 (13%) had five to nine attempts, and 4 women had quit temporarily during pregnancy.

Key themes identified by coalesced categories

The key themes extracted from the focus group discussions as supports and barriers to smoking

Table 1. Characteristics of focus group participants by smoking status and combined sample.

Characteristic	Current smokers (n=23)	Former smokers (n=29)	Combined sample (n=52)
Mean age, years	47.1 ± 15.2	55.5 ± 8.2	51.8 ± 12.4
Gender			
Male	10 (43)	15 (52)	25 (48)
Female	13 (57)	14 (48)	27 (52)
Martial status			
Single	3 (13)	2 (7)	5 (10)
Married	17 (74)	23 (79)	40 (77)
Disrupted	3 (13)	4 (14)	7 (13)
Years of education			
0–12	21 (91)	20 (69)	41 (79)
13–17	2 (9)	8 (28)	10 (19)
18+	0 (0)	1 (3)	1 (2)
Mean age started, years	17.0 ± 5.4	17.1 ± 3.7	17.1 ± 4.5
Mean age stopped, years	—	33.3 ± 14.7	—
Mean years smoked	25.7 ± 14.9	17.2 ± 11.1	21.0 ± 13.5
Mean years being smoke free	—	19.8 ± 9.3	—
Mean number of cigarettes per day	14.4 ± 10.6	24.0 ± 16.1	19.7 ± 14.6

Note. Data are number of subjects with percentages for categorical variables and means with standard deviations for continuous variables.

cessation are listed in Table 2 and are categorized into social, psychological, physical, political, economic, behavioral, and spiritual domains. We also extracted key strategies used by both former and current smokers, which also were coalesced into the seven foregoing categories (Table 4). The majority of

Table 2. Key focus group themes organized by supports and barriers within selected categories.

Category	Supports	Barriers
Social	Death of a friend or family member due to smoking	Friend, family member, and/or coworkers who smoke
	Health of others (family members, friends, unborn fetus)	Nagging by friend, family member, healthcare provider and/or coworker to stop smoking
	Advice and encouragement from spouse, children/ grandchildren, parent, friend, coworkers, healthcare provider, church	No smoking cessation support from immediate environment (e.g., home, work)
	Challenged to quit smoking by someone	
	Want to be a positive role model for children/ grandchildren	
	Joined church that prohibited smoking	
	Started a new job that prohibited smoking	
	Inspired by family member's success in quitting smoking	
Psychological	Emotional impact of seeing graphic images of the effects of smoking (tar-stained lungs)	Stressful situations (at work and home)
	Increase in knowledge from educational materials on smoking cessation at church, workplace, school, and/or healthcare providers	Psychological addiction (need to smoke to feel better/ relaxed)
	Desire to live long enough to see children/ grandchildren grow up	Negative emotions (anxiety, depression, mood swings)
	Fear of smoking-related illness or death	Lack of willpower
	Near-death experience	
Physical	Good personal hygiene (cigarette smoke odor is unpleasant)	Weight gain
	Reduced effects of nicotine (tolerance)	Physical addiction (need for nicotine)
	Improve own health	
Political	Antismoking laws/legislation (smoking bans in food establishments)	(none identified)
Economic	Cigarettes are too expensive	Nicotine patch/gum too expensive
	Too many people bumming cigarettes	
Behavioral	Quit another addiction and decided to quit smoking at the same time	Smoking is habitual
		Smoking is less dangerous than other drugs
		Smoking is tied to other behaviors (alcohol and caffeine consumption)
Spiritual	Belief that the body is a temple that should not be contaminated by cigarettes	(None identified)
	Divine inspiration	

Table 3. Categorical supports and barriers to smoking cessation that emerged from focus groups by smoking status and combined sample.

	Supports						Barriers					
	Current smokers		Former smokers		Combined		Current smokers		Former smokers		Combined	
Category	Males n=10	Females n=13	Males n=15	Females n=14	Males n=25	Females n=27	Males n=10	Females n=13	Males n=15	Females n=14	Males n=25	Females n=27
Social	6 (60)	5 (38)	12 (80)	9 (64)	18 (72)	14 (52)	10 (100)	11 (85)	9 (60)	9 (64)	19 (76)	20 (74)
Psychological	6 (60)	6 (46)	11 (73)	8 (57)	17 (68)	14 (52)	10 (100)	12 (92)	9 (60)	11 (79)	19 (76)	23 (85)
Physical	2 (20)	6 (46)	8 (53)	7 (50)	10 (40)	13 (48)	9 (90)	11 (85)	6 (40)	5 (36)	15 (60)	16 (59)
Political	2 (20)	4 (31)	1 (7)	3 (21)	3 (12)	7 (26)	0	0	1 (6)	0	1 (4)	0
Economic	1 (10)	1 (8)	3 (20)	2 (14)	4 (16)	3 (11)	2 (20)	3 (23)	2 (13)	1 (7)	4 (16)	4 (15)
Behavioral	0	0	0	3 (21)	0	3 (11)	9 (90)	10 (77)	7 (47)	7 (50)	16 (64)	17 (63)
Spiritual	2 (20)	1 (8)	5 (33)	6 (43)	7 (28)	7 (26)	0	0	0	0	0	0

Note. Data are numbers of participants (with percentages) who endorsed themes from that category. Categories are mutually exclusive.

themes extracted were categorized as either social (8 supports, 3 barriers, and 3 strategies) or psychological (5 supports, 4 barriers, and 1 strategy) followed by themes categorized as physical (3 supports, 2 barriers, and 3 strategies), behavioral (1 support, 3 barriers, and 3 strategies), economic (2 supports and 1 barriers), spiritual (2 supports and 1 strategy), and political (1 support). A total of 23 supports, 13 barriers, and 11 strategies were identified as relevant to smoking cessation.

A composite sample of representative quotes that exemplify the categories and respective themes summarized in Table 2 (supports and barriers) and Table 4 (strategies) are presented here by smoking status and gender. The brackets in the text indicate the category the phrase belongs to and whether it was identified as a support, a barrier, and/or a strategy. The representative composite samples are as follow:

Male, former smoker: *Later I got married, and I couldn't smoke around the kids … [others gave me] pressure like, ''how come you're smoking, it's hazardous to your health''[social support] … I used … Nicorette and smoked at the same time! … I used to drink and smoke [behavioral barrier], but gave up drinking when I got gout. Once I ran down the beach and got winded [physical support], and I thought about that diseased lung they show you in class … [and] I started thinking about how 3 out of 4 deaths had come out of smoking [psychological support] … So finally I just stopped cold turkey [behavioral strategy].*

Female, former smoker: *It was like an off and on thing for me … but later I learned that smoking is not good for children … my son used to get a lot of ear aches, that's when I learned [social and psychological supports]. I didn't really quit until I attended church … They're not saying that you have to quit smoking but they would always say that God would want a clean temple so we don't want to put anything bad in our bodies that, you know, does not allow the Lord to live in your heart [spiritual support and strategy] … Then I just quit cold turkey [behavioral strategy].*

Table 4. Strategies for smoking cessation that emerged from focus groups by smoking status.

Strategy	Former smokers (n=29)	Current smokers (n=23)
Physical		
Pharmacological approaches	3 (10)	11 (48)
Substitutions in mouth	0	2 (9)
Acupuncture	0	4 (17)
Psychological		
Hypnosis	0	1 (4)
Social		
Support group at work	0	5 (22)
Smoking cessation work program	2 (7)	0
New nonsmoker friends	2 (7)	0
Spiritual		
Faith in God	3 (10)	0
Behavioral		
Cold turkey (abrupt cessation)	23 (79)	8 (35)
Slowly cut back	3 (10)	3 (13)
Quit multiple addictions	3 (10)	0

Note. Data are numbers of participants (with percentages) who endorsed themes from that category. Domains are mutually exclusive.

Male, current smoker: *Well, when one gets too much to drink [behavioral barrier] and you see the other guys smoking, you start [social barrier] … You get up in the morning and you smoke … you don't smoke, you don't move your bowels do you know what I mean? [physical barrier] It's a routine like the mind is automatically doing it [behavioral barrier] … When we play cards especially, you know poker, you kind of smoking … You get bad cards you … stress yeah [psychological barrier] … You got to be ready to quit. When you ready to quit, you gonna do it [psychological support] … I tried Zyban too [physical strategy]. I don't know what happened. I didn't finish it.*

Female, current smoker: *But I say yeah, I'm going to quit but it's hard. I think the craving for the nicotine [physical barrier]. So sometimes when I feel like, oh, I'm all stressed out and stuff I just grab a cigarette, and it relaxes me [physical and psychological barriers] … The only time I stopped was when I was pregnant and when I get sick [social and physical supports] … I just completely stopped and after that I don't know, I just [start again]. My husband smokes [too] … I have another younger sister, 1 year below me and she smokes too [social barrier].*

Supports in smoking cessation

Table 3 summarizes, by smoking status and gender, the number of participants who endorsed themes identified as supports under each category. Among current smokers, the top support categories (≥50% endorsement) for males were social (60%) and psychological (60%); no single category was endorsed by more than half of female current smokers. However, 46% of females endorsed themes from the psychological and physical categories. Among former smokers, the top support categories that emerged for males and females were social (80% and 64%, respectively), psychological (73% and 57%, respectively), and physical (53% and 70%, respectively).

Psychological supports in smoking cessation included smoking cessation messages across multiple settings (e.g., church, workplace, school, health centers, family), fear of illness or death related to continued smoking, and a desire to live longer and healthier lives with their families. Social supports included concerns for the health of people in their immediate environments (e.g., home and work), the negative role-modeling effects their smoking has on their children and grandchildren, and encouragement from family and friends to stop smoking. Physical supports included the desire to improve health status and personal hygiene. Three former smokers (10%) also reported relying on spiritual supports (mostly Christian) in their successful cessation efforts.

Barriers to smoking cessation

Table 3 also summarizes the number of participants who endorsed themes identified as barriers under each category. The percentages did not differ markedly by gender, but they did differ somewhat by smoking status. Among current smokers, the top barrier categories (≥50% endorsement) for both males and females were social (100% and 85%, respectively), psychological (100% and 92%, respectively), physical (90% and 85%, respectively), and behavioral (90% and 77%, respectively). Among former smokers, top barrier categories for males and females were social (60% and 64%, respectively), psychological (60% and 79%, respectively), and behavioral (47% and 50%, respectively).

Social barriers included the presence of friends, family, and coworkers who smoked, and advice from social sources was interpreted as "nagging." Psychological barriers included stress, negative emotions (depression and anxiety), lack of willpower, and thinking about the need to smoke. The physical barriers included physical addiction of nicotine itself and experiences with weight gain during previous quit attempts. Behavioral barriers included the habitual nature of smoking and the fact that smoking was linked to other behaviors, such as reading the newspaper and drinking coffee or alcohol.

Strategies to quitting

Strategies used for smoking cessation and the number of participants who endorsed these strategies are summarized in Table 4 by smoking status. The frequency of methods used for quitting smoking differed between former and current smokers. A majority of former smokers reported using behavioral strategies to stop smoking, which included going cold turkey (79%), slowly cutting back on the amount smoked (10%), and quitting other activities (10%; e.g., drinking coffee and alcohol) that triggered their smoking. When asked about the meaning of "cold turkey," participants explained that going cold turkey involved a sudden cessation of all smoking rather than a gradual or an incremental decrease in cigarettes smoked. Only three participants (10%) used a physical strategy, all finding success with a pharmacological aid. Only two (7%) mentioned a support program at work and the helpfulness of finding nonsmoking friends. Three (10%) used their spiritual beliefs to assist in smoking cessation. Among current smokers, about half (48%) had tried pharmacological strategies, and 17% tried

acupuncture; 1 tried hypnosis, and 5 (22%) tried support groups. Eight (25%) had tried to quit cold turkey and failed, and three (13%) had tried cutting back slowly.

Discussion

Our study examined whether a combined behavioral and pharmacological smoking cessation program would be appropriate for Native Hawaiians and identified supports and barriers in smoking cessation among Native Hawaiian former and current smokers. We found smoking cessation preferences consistent with the idea that a combined behavioral and pharmacological approach may be acceptable to Native Hawaiians, but that it might be enhanced by highlighting the negative effects of smoking on family members, especially children, and by involving spiritual/religious supports. To our knowledge, this is the first study to examine the smoking cessation experience of Native Hawaiians, an indigenous U.S. population with a high prevalence of cigarette smoking. Given the lack of such data, we employed focus groups to learn from their lived experiences, a method of inquiry that is culturally acceptable and necessary when little is known about a complex phenomenon.

Multifactorial nature of Native Hawaiian smoking cessation

We learned that Native Hawaiians who were successful at smoking cessation and in remaining smoke free (former smokers) found social, psychological, and physical factors most helpful as supports in their quitting. Such supports included promoting family values, increasing health awareness (psychological), positive role-modeling, smoke-free environments (social), and desire to improve personal health and hygiene (physical). With the addition of behavioral factors (e.g., the association between smoking and other behaviors), the same factors also served as barriers to smoking cessation, such as the presence of other smokers (social), negative emotions (psychological), and nicotine addiction and fear of weight gain (physical). Unsurprisingly, former smokers endorsed social, psychological, and physical themes as supports more often than did current smokers; currents smokers more often endorsed themes within these factors as barriers. Although we suspected gender differences in smoking cessation, no remarkable gender differences emerged from the focus group discussions.

Native Hawaiians who were successful at quitting smoking also used different smoking cessation strategies from those who were not successful. Former smokers relied more heavily on behavioral strategies in conjunction with some other strategy than did current smokers. Some of these other strategies were the use of NRT, quitting other behaviors associated with smoking, attending smoking cessation work-based programs, increasing social contacts with nonsmokers, and/or turning to their religious faith for support. Former smokers who reported quitting cold turkey also reported the presence of social (e.g., role-modeling) and psychological (e.g., fear of illness) supports as well as using other concurrent strategies (e.g., religious faith). It appears that an effective smoking cessation program for Native Hawaiians would need to focus on these multiple social, psychological, and physical factors that can either facilitate or hinder the process.

Role of social support and religiosity/spirituality in Native Hawaiian smoking cessation

Of the multiple factors affecting smoking cessation, social factors were cited often by both former and current Native Hawaiian smokers. The role of social support from family and friends in successful smoking cessation is well documented (Nollen, Catley, Davies, Hall, & Ahluwalia, 2005; Wagner, Burg, & Sirois, 2004). Social support can provide motivation and positive reinforcement, and can protect against stressful situations that might affect cessation and relapse. Native Hawaiian former smokers reported that many aspects of social support were important in their quitting, such as advice and encouragement they received from others and the influence of their children and grandchildren's well-being. In contrast, Native Hawaiian current smokers cited social factors that were barriers to their quitting, such as the presence of other smokers in the home and at work and nagging by others about their smoking. Therefore, a person's social environment and the type of social support a person receives from others when attempting to quit smoking may either facilitate or hinder the process.

Other studies have found that pressure to quit via lectures, nagging, and preaching from others can negatively influence a person's smoking behavior (Balch, 1998; Pollak et al., 2001). However, it is likely that the difference in current and former smokers' perceptions of other people's comments about their smoking—whether it is perceived as support or nagging—may be associated with their wanting to quit and their success in doing so. For example, a study of women who tried to quit smoking because of pregnancy found that those who quit perceived more positive social supports from their partners than did those who continued smoking (McBride et al., 1998). We cannot determine the nature of the difference in social support perceptions found in our study between Native Hawaiian former and current smokers,

but it is a research question worth examining in future studies. What is obvious from our findings is that family members of Native Hawaiian former smokers had a strong influence in their wanting to quit and remain smoke free. Therefore, a smoking cessation program for Native Hawaiians should capitalize on this motivational factor by highlighting its importance to the health and well-being of their family members.

A notable number of Native Hawaiian former smokers cited their religious and spiritual belief as a supportive factor in smoking cessation and a few also relied on it as a cessation strategy. Spirituality, mostly tied to Christian religious beliefs, is an integral part of Native Hawaiian culture and serves as an important source of inspiration and guidance for many Native Hawaiians (Mokuau, Hishinuma, & Nishimura, 2001). Studies have found that spirituality and religion can influence smoking behavior. For example, the Church of Jesus Christ of Latter-day Saints (LDS, also called Mormon) discourages tobacco use, and LDS have significantly lower cancer incidence rates than non-LDS (Merrill & Lyon, 2005). Higher levels of spirituality and lower levels of stress were associated with decreased health risk behaviors (including smoking) among pregnant women from Appalachia (Jesse & Reed, 2004). Regular religious attendance was associated with a wide range of healthy behaviors (including never smoking) in a population-based study of adults in Texas (Hill, Burdette, Ellison, & Musick, 2006). Therefore, a smoking cessation intervention for Native Hawaiians could benefit from the consideration of their spiritual/religious beliefs to increase a favorable attitude toward quitting and in coping with stressors that might interfere with such efforts. Working with church officials in the Hawaiian community could also prove beneficial to aid in tobacco control, given their strong influence in the Hawaiian community.

Motivational aspect of Native Hawaiian smoking cessation

The differences between Native Hawaiian former and current smokers in their reporting of supports, barriers, and types of cessation strategies suggest that motivation to quit may have been a significant factor in their smoking cessation success. For example, Native Hawaiian former smokers may have been more motivated to quit smoking as suggested by the greater number of supports they reported and their ability to quit cold turkey, compared with current smokers. Some of the factors that may have served as motivators for former smokers were concerns for the health of others, wanting to be a good role model for the younger generation, and fear of developing a serious illness.

We found that Native Hawaiian former smokers reported having smoked more cigarettes per day (when they did smoke), compared with current smokers. Investigators have found that people who smoke more cigarettes per day were less likely to be successful at smoking cessation than those who smoked less, probably related to a stronger addiction to nicotine among the former (Fagerström & Schneider, 1989; Niaura & Abrams, 2002). However, the inverse appears to be true among our sample of Native Hawaiians, furthering the idea that Native Hawaiians who smoked more may have been more motivated to quit. We cannot ascertain from our data the reasons why former smokers smoked more cigarettes daily, on average, than current smokers and whether their heavier past smoking was associated with their smoking cessation. However, our sample of Native Hawaiian former smokers could have experienced more social encouragement to quit, poorer physical functioning, and greater fears of suffering a serious illness because of their heavy smoking compared with current smokers. Or perhaps the much-increased cost of cigarettes today has reduced the number of cigarettes smoked per day by current smokers.

Comparison of smoking cessation experience across ethnic groups

We found some similarities and differences in the smoking cessation strategies, supports, and barriers reported by our sample of Native Hawaiians and those reported by other U.S. ethnic groups. For example, studies among Latinos (Foraker, Patten, Lopez, Croghan, & Thomas, 2005), Korean Americans (Kim, Son, & Nam, 2005), and Native Americans (Burgess et al., 2007) also found that the health and well-being of family members, children in particular, was a strong reason for their smoking cessation and that many of them reported going cold turkey as a common method to quitting. In a study of Korean Americans, Kim et al. (2005) found, as we did, that former smokers reported avoiding smoking cues and going cold turkey more so than did current smokers who had attempted to quit. Similar smoking cessation barriers were found among Latinos (Foraker et al., 2005), Korean Americans (Kim et al., 2005), African Americans (Okuyemi, Scheibmeir, Butler, & Ahluwalia, 2003), and Native Americans (Burgess et al., 2007), such as the presence of other smokers, the habitual nature of smoking, addiction to nicotine, and emotional distress. Unlike African Americans and American Indians (Fu et al., 2007), our sample of Native Hawaiians did not express strong negative attitudes or beliefs toward the use of pharmacotherapy, such as NRT.

What appears to be a novel finding among our sample of Native Hawaiians is the role of religion/spirituality in smoking cessation for former smokers

versus current smokers who attempted to quit. We could find only one focus group study that identified religion/spirituality as a prevalent theme in smoking cessation among a specific ethnic group. Specifically, Kim et al. (2005) found that current Korean American smokers reported that their smoking caused religious conflicts for them; however, the former smokers did not report relying on their religion to quit. As we discussed previously, certain religious/spiritual faiths are associated with less smoking initiation, but little is known about their role in actual smoking cessation.

Conclusion

From our findings, it is apparent that a combined behavioral and pharmacological smoking cessation program that accounts for the role of spirituality/religion in cessation and emphasizes the health and well-being of family members would be appropriate for Native Hawaiians. Specifically, a culturally appropriate smoking cessation program for Native Hawaiians could be effective if it targeted (a) family factors as motivators to quit; (b) important psychological, social, and physical factors of smoking; and (c) a person's religious/spiritual faith as part of his or her social support system and motivation to quit. Behavioral strategies should be used to address the habitual relationship between alcohol and caffeine consumption and smoking; to deal with social cues that trigger smoking (e.g., other smokers); and in setting quit dates (for those willing to go cold turkey) or gradually decreasing the amount smoked daily over time. In targeting the physical affects of smoking, NRT also should be made available, given that many of the Native Hawaiians in our sample were open to its use and that other studies have found its use (in conjunction with other strategies) effective. These treatment foci for Native Hawaiians are consistent with Chen's (2001) recommendation that smoking cessation programs for Asian and Pacific Islanders incorporate sociocultural, environmental, physiological, and cognitive factors to increase their effectiveness.

Methodological limitations and final remarks

Methodological limitations to our study should be noted. First, the use of a focus group methodology can be highly subjective, both in the information shared by participants and in the analysis of this information. We attempted to address this issue by conducting several focus groups with individuals from diverse sociodemographic backgrounds and by having consensus of data extraction and interpretation by several researchers. Second, our sample of rural Native Hawaiian former and current smokers may not have been representative of the larger Native Hawaiian population. Given that our findings are similar to what has been observed in other ethnic populations, we are confident that our results can be generalized to other Native Hawaiians who smoke and possibly to other Pacific Islanders. Nevertheless, further investigations on smoking cessation among Native Hawaiians are needed to substantiate our findings.

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