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Journal of Community Health
The Publication for Health Promotion and Disease Prevention

ISSN 0094-5145

J Community Health
DOI 10.1007/s10900-011-9533-9

Springer

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ORIGINAL PAPER

Perceived Barriers to Adopting an Asian-Language Quitline Service: A Survey of State Funding Agencies

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Abstract This study examined the perceived barriers to adopting an Asian-language quitline service among agencies that fund current state quitline services across the U.S. A self-administered survey on organizational readiness was sent to the funding agencies of 47 states plus Washington D.C. that currently fund state quitlines in English and Spanish, but not in Asian languages (response rate = 58%). The 2010 Census and the 2009 North American Quitline Consortium Survey were used to obtain the proportion of Asians among the state population and state quitline funding level, respectively. The most frequently cited reasons for not adopting an Asian quitline are: the Asian population in the state would be too small (71.4%), costs of service would be too high (57.1%), and the belief that using third-party translation for counseling is sufficient (39.3%). However, neither the actual proportion of Asians among the state population (range = 0.7% to 7.3%), nor the quitline funding level (range = $0.17 to $20.8 per capita) predicts the reported reasons. The results indicate that quitline funding agencies need more education on the necessity and the feasibility of an Asian-language quitline. Three states are currently participating in a multi-state Asian-language quitline in which each state promotes the service to its residents and one state (CA) provides the services for all the states. This centralized multi-state Asian-language quitline operation, which helps reduce practical barriers in adoption and disparity in access to service, could be extended.

Keywords Disparity · Asian population · Quitline · Adoption of innovation

Introduction

The first state-funded telephone counseling service to help smokers quit smoking in the U.S., referred to as a *quitline*, began in California in 1992. The effectiveness of the program was proven with a large randomized trial [1] but, as is typical in the diffusion of innovations, it took a few years before another state adopted the idea of a state quitline. The pace of adoption quickened and by 2004, all 50 states plus Washington D.C. had quitlines that provided counseling free of charge to smokers in English [2]. Most of these quitlines soon followed with direct counseling services in Spanish [3]. The U.S. Public Health Service's Clinical Practice Guidelines specifically recommend that clinicians and health care delivery systems ensure that all patients who smoke be provided with access to quitlines [4], and the U.S. Department of Health and Human Services' Task Force on Community Preventive Services strongly recommends multicomponent telephone support [5].

Only one state, however, has added Asian-language services to its quitline (in 1993), and little progress in serving Asian-language smokers through quitlines has been made since then [6]. Some states have tried to mitigate the

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Published online: 08 January 2012

obvious disparity in access to service by using a third-party translation service. However, counseling through an interpreter makes it difficult to establish rapport with clients, a critical ingredient in effective counseling [7]. Moreover, a third-party set up could make states reluctant to promote the service via mass media campaigns. This is because media promotion typically generates a large volume of calls in a very short period of time [8, 9], which is difficult to handle when all calls have to go through a third party. The lack of media campaigns in Asian languages has led to few calls to the quitline from Asian-language speakers, which in turn has enhanced the inaccurate impression that Asian smokers will not use quitline services [10].

The present study of state funding agencies is part of a larger project funded by the U.S. Centers for Disease Control and Prevention (CDC) to demonstrate feasibility of a multi-state Asian-language quitline. The larger project is a collaboration of several academic groups and state health departments. This study of quitline funders aims to understand what has kept state health departments from adding Asian-language services to their quitlines, information which could be used to improve the adoption of Asian-language quitline service.

The state of California added three Asian languages (Chinese, Korean, and Vietnamese) to its quitline service in 1993 and has continued these services since. Two other states (Hawaii and Colorado) joined California in 2010 to offer service in the same three Asian languages as part of the CDC project. In joining California, the two states agreed to promote the services in their Asian communities. In turn, the counseling for these Asian-language callers is provided centrally by the California quitline. In this arrangement, the two newly involved states solve one of the practical problems in adopting Asian-language services: the difficulty in finding qualified bilingual counselors who can provide service in these Asian languages.

The present study surveyed representatives of the 48 agencies (47 states plus Washington D.C.) that have funded state quitlines for many years but do not yet offer direct Asian-language services. This study formally investigated the level of readiness for and the perceived barriers to adopting an Asian-language quitline and factors associated with their readiness. To study factors related to readiness, we specifically examined the influence of the size of Asian population in each state as well as the funding level of each state quitline on the level of readiness and perceived barriers among state funding agencies. We anticipated that [1] agencies would perceive many barriers to adopting Asian-language quitlines, [2] agencies in states with higher proportions of Asians would show higher levels of readiness, and [3] agencies with higher quitline funding levels would show higher levels of readiness. The aim of this research is to inform the CDC-funded efforts to disseminate the Asian-language quitline service across U.S. states in order to reduce disparities in access to evidence-based cessation treatment.

Methods

Survey Instrument

This study created a survey based on a scale for organization readiness used in research on innovation diffusion [11]. The survey asked about the perceived readiness for adopting Asian-language services and possible barriers to the innovation, generated from Dearing and Meyer's [11] concept of innovation attributes (characteristics of a new idea, process, or technique). In addition, the survey asked about current Asian-language services in the state and about the available funding for state quitline services.

Participants

The survey was sent to all state quitline funders (state public health departments) not actively involved in providing and promoting Asian-language services. California, Hawaii, and Colorado were excluded since they are all participating in the CDC funded multi-state Asian-language quitline project. Therefore, the pool of potential adopters included the 47 remaining states plus Washington, D.C. The North American Quitline Consortium (NAQC) promotes quitline services in the United States, Canada, and Mexico and maintains a contact list of quitline funders that it uses for its annual survey. Through a data use agreement, NAQC provided the list of names and email addresses of the identified contact for each state for use in this study. An e-mail request was sent to contacts asking them to use the enclosed link to access the survey, which was created in Survey Monkey. After 2 weeks, another email request was sent to those who had not yet completed the survey urging them to participate.

A total of 31 funding agency representatives responded to the survey (a response rate of 64.6%), including three that did not complete items about perceived barriers to adopting an Asian-language service. The final sample for the analysis of perceived barriers, therefore, was comprised of 28 funding agencies (a response rate of 58.3%). Characteristics of respondent and non-respondent states were analyzed using data from the 2010 U.S. Census on the proportion of Asians among the state's population [12], and data on quitline funding level taken from the 2009 NAQC survey.

Measures

Table 1 lists the two readiness and nine barrier variables analyzed in this study. Barrier variables were classified as

Table 1 Readiness and barrier items in the organizational readiness survey

Variable	Statement
Level of readiness	
Discussion	There have been discussions within my state/organization about staffing the quitline with Asian-language bilingual staff and providing separate language phone lines for Asian-language speakers
Readiness	My state/organization is ready to staff the quitline with Asian-language bilingual staff and provide separate language phone lines for Asian-language speakers
Level of barrier	
Practical	
Population	There are too few Asian-language tobacco users in my state to warrant staffing the quitline with Asian-language bilingual staff and providing separate language phone lines for Asian-language speakers
Cost	The cost of staffing the quitline with Asian-language bilingual staff and providing separate language phone lines for Asian-language speakers is prohibitive
Need	There is no need to staff the quitline with Asian-language bilingual staff and provide separate language phone lines for Asian-language speakers because the translation service works well
Staff	It would be difficult to staff the quitline with Asian-language bilingual staff
Decision	There are so many Asian languages that it would be a problem to decide which language lines should be provided
Promotion	It is not known what promotional strategies are effective in prompting Asian-language speakers to call a quitline
Sum	Sum of population, cost, need, staff, decision, and promotion
Cultural	
Face-to-face	If Asian-language smokers were to seek help with quitting, they would prefer face-to-face programs over telephone-based programs
Evidence	There is not enough evidence that counseling/coaching works for Asian-language smokers
Use	Asian-language smokers will not use counseling to help them quit smoking
Sum	Sum of face-to-face, evidence, and use
Overall barriers	Sum of population, cost, need, staff, decision, promotion, face-to-face, evidence, and use

being related to practical concerns or to concerns about the cultural appropriateness of the service. Three composite indices were created: practical issues, cultural issues, and overall issues. The *practical* index was the sum of the barriers due to population size, cost, need for the service, staffing, difficulty making the decision about which languages to offer, and not knowing what promotion strategies would work. The *cultural* index was the sum of issues regarding the greater preference for face-to-face service, the lack of evidence for the service, and concerns about whether Asians would use the services. The *overall* index was the sum of all nine barrier variables. Answers for the two readiness variables about whether there have been discussions about offering Asian-language services and the organization readiness to do so were coded as $2 =$ *strongly agree*, $1 =$ *agree*, $0 =$ *uncertain*, $-1 =$ *disagree*, and $-2 =$ *strongly disagree* so a high value indicates greater readiness. Barrier variables were also coded so that a high value indicates greater perceived barrier.

The proportion of the Asian population in each state was obtained from the 2010 U.S. census data and was calculated by taking the number of people who identified their race (in sum or in part) as Asian and dividing it by the total population of each state. *Asian* was defined as "descended from any of the peoples born in Asia" [13].

The CDC's best practices recommend specific spending levels for each state quitline reporting the suggested dollars per smoker that should be spent on cessation services and/or quitting aids (medications and nicotine replacement therapy) [14]. We defined quitline funding level in the same way, as dollars spent on services and/or quitting aids per smoker in the state. The funding level of each quitline was obtained from the 2009 NAQC Annual Survey and was calculated by dividing by the number of smokers in the state as estimated from the 2008 Behavioral Risk Factor Surveillance System (BRFSS), the largest health survey system in the U.S. [15]. For the two states that did not

provide funding information in the 2009 NAQC survey, their funding level was calculated by taking the budget data reported in the survey for this project.

Analysis

Descriptive analyses were used to evaluate the level of readiness to adopt services as well as the perceived barriers among the potential adopters of an Asian-language quitline service (Table 1). Respondent states and non-respondent states were compared on the proportion of Asians in their state and the quitline service funding level; with *state* as the unit of analysis. Ordinal logistic regression was used to examine the association between the proportion of Asian population and funding level and the perceived readiness and barriers. Confidence intervals (95%) were used to evaluate statistically significant differences. All calculations were performed using SAS 9.2 [16].

Results

Characteristics of Respondent and Non-Respondent States

Table 2 compares characteristics of states that responded to the survey to those that did not. It was expected that states with greater quitline funding and with higher Asian populations would be more likely to respond to the survey. As expected, the average funding level was indeed higher for states that responded to the survey than for those that did not ($3.67 vs. $2.01 per smoker). However, states that responded to the survey had, on average, a lower proportion of Asians than states that did not respond (2.54% vs. 3.12%).

Table 2 Characteristics of respondents and non-respondents

Characteristics	*N*	Mean	SD	Median	Range
% of Asian population					
Respondent	28	2.54%	1.67	1.89%	0.67–7.33
Non-respondent	20	3.12%	2.32	2.58%	0.63–8.25
Total	48	2.78%	1.97	2.18%	0.63–8.25
Funding level[a]					
Respondent	28	$3.67	4.16	$2.27	0.17–20.80
Non-respondent[b]	18	$2.01	2.36	$0.94	0.14–8.88
Total	46	$3.02	3.63	$1.87	0.14–20.80

[a] Funding Level refers to average amount per smoker spent on services and medications

[b] Two missing values among non-respondents were excluded in the comparison

Current Quitline Service for Asian-Language Speakers

Both the NAQC survey and the current survey indicated that Asian-language quitline services are rare among U.S. quitlines. Except for California, no quitline had a separate phone number for Asian-language speakers, provided Asian-language cessation materials, or offered direct counseling services in any Asian language. The majority of quitlines (89%) relied on a third-party translation service to provide Asian-language counseling, if they provided it at all (data not shown in Table 2) [6].

Readiness for an Asian-Language Service

State agencies that did not provide Asian-language services directly were asked about their readiness to adopt such services. Their answers were coded as 2 = strongly agree, 1 = agree, 0 = uncertain, −1 = disagree, and −2 = strongly disagree. On average, there had been little discussion related to providing this service (mean for *discussion* = −1). Only 10.7% of potential adopters reported having had any discussions about staffing the quitline with Asian-language bilingual staff and providing separate phone lines for Asian-language speakers. Furthermore, when asked if they were ready to add the service, none responded positively (mean for *readiness* = −1.32).

Barriers to an Asian-Language Service

The low readiness of these potential adopters to establish an Asian-language quitline service suggests that there are barriers that prevent them from doing so. Figure 1 displays the mean scores of the nine potential barriers that were assessed; a higher score indicates that the item is perceived as a larger barrier. The data indicate that practical issues are more salient than cultural issues.

The most prominent barrier was the perception that the proportion of Asians in the state (*population*) was too small to warrant the suggested services (mean = 0.96). The majority of respondents (71.4%, not shown in the figure) agreed with the statement. The second major barrier was *cost* (mean = 0.61); over half of potential adopters (57.1%) indicated that the cost of staffing the quitline and providing separate language phone lines would be prohibitive. Many (39.3%) felt there was no *need* to staff the quitline with Asian-language bilingual staff and provide separate language phone lines for Asian-language speakers because translation services work well (mean = 0.32). About a third of the funding agencies felt that it would be difficult to *staff* the quitline with Asian-language bilingual staff (mean = 0.25); difficult to make the *decision* regarding which language lines should be provided, given

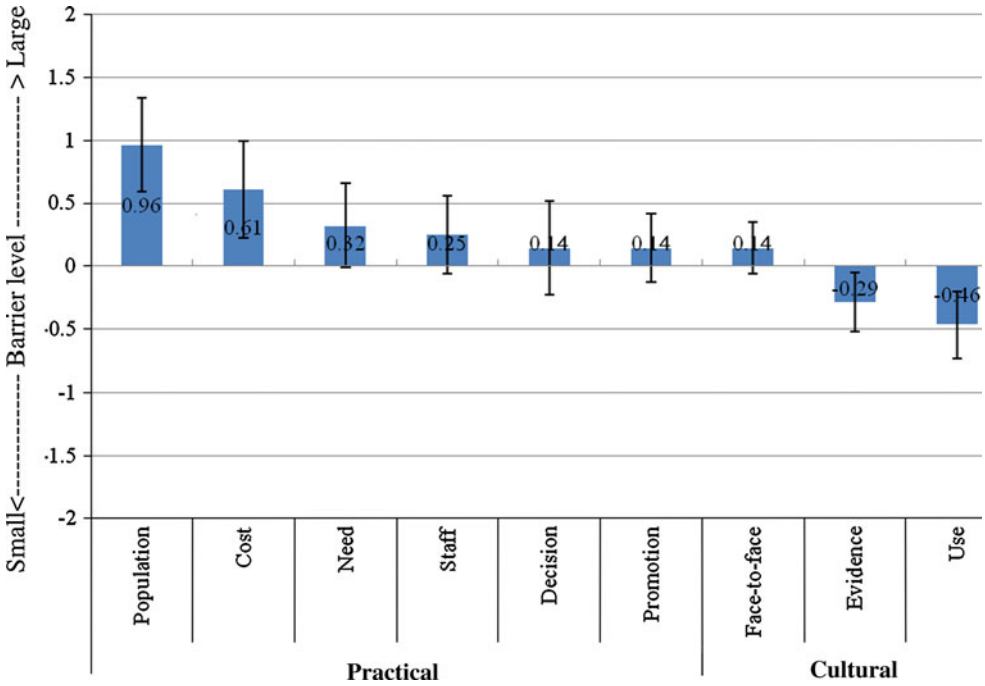

Fig. 1 The average score on the level of barriers to an Asian-Language Service among state funding agencies

the variety of Asian languages (mean = 0.14); or to decide what *promotional* strategies would be effective in prompting Asian-language speakers to call a quitline (mean = 0.14) (Fig. 1).

Potential adopters rated cultural barriers as less problematic. The mean scores for believing that Asian-language smokers would not *use* counseling to help them quit smoking, believing there is insufficient *evidence* for counseling's effectiveness with Asian-language smokers, and believing that Asian-language smokers would prefer *face-to-face* programs to telephone-based programs were −0.46, −0.29, and 0.14, respectively. However, the responses indicate their general lack of certainty around these cultural issues. About 80% were uncertain whether Asian-language smokers would call a quitline or if there is sufficient evidence regarding the effectiveness of counseling/coaching for Asian smokers. More than half (53.6%) of the respondents were unclear about whether Asian smokers would prefer face-to-face or telephone-based cessation programs.

Asian Population and Funding Level

Table 3 shows the results of 14 regression models that used proportion of the state's population that were Asian and the level of funding for quitlines as the predictors of the two readiness variables, the nine potential barriers, and the three indices (practical, cultural, and total barriers). The data indicate that the proportion of the Asian population is significantly associated only with the level of *discussion* ($P = .04$). When funding level for state quitlines was

Table 3 Two predictors of barriers to an Asian-language service ($N = 28$)

	Predictor 1: % of Asian[a]			Predictor 2: funding level[c]		
	Coef.	(SE)	*P*	Coef.	(SE)	*P*
Dependent variable						
Discussion	.51	.25	.04*	.10	.09	.27
Readiness	.17	.23	.46	.04	.09	.65
Barriers						
Practical						
Population[b]	−.27	.23	.24	.001	.09	.99
Cost	.09	.22	.70	−.08	.09	.38
Need	.04	.23	.87	−.02	.09	.84
Staff	−.23	.24	.32	−.02	.09	.80
Decision	−.07	.22	.76	−.004	.09	.96
Promotion	−.20	.24	.39	.13	.12	.26
Sum	−.15	.21	.49	−.01	.09	.93
Cultural						
Face-to-face	.51	.31	.09	.03	.14	.84
Evidence	−.17	.27	.54	.02	.13	.90
Use	−.49	.26	.06	−.19	.10	.07
Sum	−.28	.23	.23	−.12	.09	.20
Total barriers	−.19	.21	.38	−.06	.09	.51

* $P < 0.05$

[a] The actual proportion of Asian population from the 2010 U.S. census

[b] The perceived Asian population

[c] The results are similar when an outlier in quitline funding level was included or excluded in the models. This study examines the models with the remaining outlier

controlled, potential adopters with a higher proportion of Asians in their state were more likely to report that there have been discussions about an Asian-language service. Funding level was not associated with any of the readiness variables, the potential barriers, or the indices.

Table 3 also shows that funders in states with a higher Asian population were more likely than those in states with a lower Asian population to perceive that Asian-language speakers would use counseling and that they would prefer face-to-face counseling, although the differences are not statistically significant. Funders in states with higher quitline funding level were more likely to perceive that Asians would use counseling, although again, the difference is not significant ($P = .07$).

Discussion

This study found that readiness for establishing an Asian-language quitline service among U.S. quitline funders was generally low. The major barriers to an Asian-language service are the practical concerns. The most prominent barrier is the perception that the population of Asians in the state is too small to warrant specialized services; this is followed by concerns about finding funding for the service. Potential adopters include states whose Asian population ranges from less than 1 to over 8% and whose expenditures on quitline services (counseling and quitting aids) vary from as little as $0.14 per smoker to as much as $20.80 per smoker (Table 2). It is reasonable to expect that funding agencies in states with high proportions of Asians would be more ready to offer these additional services. Funders might also perceive fewer barriers to establishing Asian-language quitline services if their overall quitline funding levels are high.

However, none of the perceived barriers were explained by the proportion of Asians in the population or the quitline funding level of the state. Even in states with relatively high Asian populations, funding agencies still perceived that there were too few Asians to warrant staffing language-specific quitlines. In addition, they perceived that the cost for such services would be prohibitive, even if the quitline was relatively well funded.

The lack of Asian-language services is in stark contrast to the availability of Spanish-language services. Almost all state quitlines (98%) provide direct counseling in Spanish, yet only 6% provide direct Asian-language services. There are 26 states that provide Spanish language services that have Hispanic/Latino populations in the range of 1–8% (similar to the range of the Asian population among states that do not provide Asian-language services) [12]. Moreover, the funding level in those 26 states is, on average, lower than that of states without Asian-language services ($2.51 vs. $3.02) (Table 2). These results lead us to raise the question: If states with low Hispanic/Latino populations and relatively low funding levels were able to adopt Spanish language services, why have Asian-language services been overlooked? This study suggests that the obstacles to establishing an Asian-language service stem from something more than population size and cost.

One possible explanation is that beliefs about the cultural appropriateness of a telephone-based service for Asian-language smokers prevent those who could fund such services from considering them. Although this study found that funders generally believe that Asian-language smokers would use counseling to help them quit and believe that counseling would be effective (Fig. 1), they also believe that Asians would prefer a face-to-face program rather than a quitline service. This may reflect the fact that telephone-based intervention is relatively new, and that traditional cessation services tend to be conducted face-to-face [17–20].

Another possible explanation for not providing Asian-language services is the belief that the implementation would be too difficult. Unlike Spanish, which is readily understood across country and region, there are many Asian languages. It may be difficult for state funders to determine which languages to offer and staffing quitlines with bilingual personnel may seem to be an insurmountable problem (Fig. 1). Perhaps the real difficulty that has kept the Asian-language quitline service from catching hold has more to do with the perceived challenges of implementing the service. Funders in states with relatively large Asian populations were more likely to discuss the issue of staffing the quitline with Asian-language bilingual staff and providing a separate language phone line for Asians, which indicates a level of interest in such services (Table 3). However, none of the states felt ready to offer these services. It is likely that the gap between interest and readiness can be bridged only by solving the technical issues of implementation.

The reality is that Asian-language smokers have been active callers to a quitline when the services are offered directly in the languages they speak (i.e., California) [10]. In examining 15 years of data of quitline operation in California it is clear that Asian-language smokers (Mandarin, Cantonese, Korean, Vietnamese) called the quitline at rates that are no lower than their English speaking white counterparts. Many callers stated they heard about the Asian-language quitline and called because of California's Asian-language media campaign, which demonstrates that Asian-language smokers will use a cessation program if they are informed about the service. In fact, several quitlines in Asian countries have reported large numbers of smokers calling to receive telephone counseling when the services are publicly promoted [21–23].

Furthermore, a recent study conducted at the California quitline tested a telephone counseling protocol for Asian-language smokers. It found that counseling doubled the rate of success among Chinese-, Korean-, and Vietnamese-speaking smokers compared to the use of self-help materials alone [24]. The data indicate that the effect of telephone counseling for Asian-language speakers is even larger than that found in the English-speaking population. On a practical level, community based programs face many of the same practical barriers that quitlines do and a few more as well. Community based Asian-language services naturally require many small, local programs to ensure access to the service across the state and across languages. Quitlines are especially cost-effective and suited for groups with too few members in any one area to justify having individual programs based on language. In light of evidence that supports the feasibility, utilization, and efficacy of Asian-language quitline services, funding agencies should be encouraged to support quitline services for the Asian-language speakers in their states.

This study has several limitations including the use of self-report, which may not reflect the actual barriers. Another limitation of this study is a response rate of 58%. It is possible that non-respondents would have expressed a different perspective than respondents [25] although it is unlikely that they would have indicated there were fewer barriers to adopting these programs. The major difference between respondents and non-respondents appears to be, not the size of their Asian populations, but their funding level. Funding agencies that failed to complete the survey may have been hesitant to extend the quitline service to Asian-language populations because of a lack of funds [26].

This study has strong implications for establishing Asian-language quitline services. Since it appears that logistical issues are the major barrier, one solution may be to establish a multistate Asian-language quitline. Indeed, the CDC-funded multistate project has generated interest in expanding Asian-language services among U.S. state qutline funders. In addition to the three original participating states (CA, HI, and CO), three more states have signed on, and more states have expressed interest in receiving information about how the multistate project works to serve the Asian-language population.

The value of a multi-state Asian-language quitline is threefold. First, it makes it possible to serve a larger Asian population by reducing cost through a centralized operation. Second, it allows greater access for Asian-language speakers nationwide. Even states with small Asian populations can participate. Third, it solves logistical issues such as staffing with qualified bilingual counselors/coaches and quality assurance. A centralized quitline can reach beyond the provision of counseling. It can facilitate anti-smoking media campaigns in Asian languages among communities with large Asian immigrant populations. The positive message of free help via a quitline can be part of a strong media campaign to make smoking socially unacceptable [27]. In addition, physicians can be encouraged to refer their Asian-language patients who need to quit smoking to this nationwide quitline [28]. There is sufficient evidence that Asian-language smokers will actively use quitline services. There is also evidence of the effectiveness of quitline counseling for them [10, 24]. A multi-state effort can reduce the practical and cultural barriers to Asian-language services. If implemented successfully, such a multi-state quitline would also serve as a model for state health departments in providing other behavioral cessation services for minority groups, helping to reduce disparities in access to effective treatment for these populations [29].

Acknowledgments This work is supported by a grant from the Centers for Disease Control and Prevention (CDC). Grant #: R18DP002106. We would also like to thank Linda Bailey and Jessie Saul for facilitating the survey.

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