Rates and Reasons: Disparities in Low Intentions to Use a State Smoking Cessation Quitline

Emily K. Burns, MD, MSPH; Elizabeth Ann Deaton, MA; Arnold H. Levinson, PhD

Abstract

Purpose. Little is known about population-level rates and reasons for low intentions to call the quitline, a widely available evidence-based smoking cessation treatment.

Design. This study is a secondary analysis of the 2008 Colorado Adult Tobacco Attitudes and Behavior Survey.

Setting. This is a population-based telephone survey of adults in Colorado.

Subjects. Study respondents (N = 1662) included current adult smokers who had heard of the Colorado QuitLine (QL) and did not report that they never intend to quit.

Measures. Outcome measures included intent to call the QL, self-reported reasons for not intending to call the QL, and knowledge of QL services.

Analysis. Descriptive and multivariate logistic regression analyses were used for each outcome variable. All analyses were weighted for complex survey design to represent the population of Colorado.

Results. Overall 45.6% of smokers intend never to call the QL. In multivariate analysis, Latinos (odds ratio [OR] = 2.5; 95% confidence intervals [CI], 1.4, 4.7), gay/lesbian/bisexuals (OR = 5.2; 95% CI, 2.4, 11.4), and those with no insurance compared with Medicaid (OR = 3.8; 95% CI, 1.1, 13.0) were most likely to intend never to call the QL. Perceiving no need for assistance (34.8%) was the most common reason for not calling.

Conclusions. A majority of smokers have no or weak intentions of ever calling the QL, with variation by subgroup. Reasons for not intending to call can inform targeted media campaigns to increase QL reach. (Am J Health Promot 2011;25[5 Supplement]:S59–S65.)

Key Words: Smoking Cessation, Quitline, Disparities, Intention, Prevention Research. Manuscript format: research; Research purpose: program evaluation; Study design: nonexperimental; Outcome measure: cognitive; Setting: state/national; Health focus: smoking control; Strategy: skill building/behavior change; Target population age: adults; Target population circumstances: education, income level, race/ethnicity

Purpose

Telephone quitlines provide first-line, evidence-based smoking cessation treatment.1 Quitline services typically include proactive telephone counseling and often free or reduced nicotine replacement therapy (NRT); combining NRT with counseling increases the reach and effectiveness of quitlines.2–4 Quitlines have been found to be effective across a wide range of demographic subgroups,2–5 and callers indicate high levels of satisfaction with quitlines across race/ethnicity, educational level, rural/urban location, and sex.6 Quitlines appear to reach disrare populations, some of whom historically underutilize other smoking cessation treatments. One study of a national quitline found that, compared with a general population of smokers, callers to the quitline were more likely to be non-Hispanic, black, or from lower socioeconomic status (SES) and educational levels.7 In contrast to their quitline usage, smokers with less education, with lower SES, and of some minority race/ethnicities are usually less likely to use other cessation treatments.8–11

Despite the evidence of broad satisfaction and effectiveness across disparate groups, quitlines remain underutilized. The Centers for Disease Control and Prevention reports that a state-level quitline could reach 8% of adult smokers,12 but state-level utilization rates reached an average of 1% in 2004.13 Efforts to increase quitline reach often rely on media or other promotional strategies and are constrained by budgetary limitations.

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Tobacco Control/Underserved Populations
Increasing consumer demand for evidence-based smoking cessation treatment is a national public health priority.\textsuperscript{14} Quitline reach ultimately depends on smokers' intentions to use them in future quit attempts. Several studies have estimated smokers' interest in using quitlines in the future. In a Vermont population-level survey, 27% of smokers planning to quit in the next month reported that they would use the quitline\textsuperscript{15}; in Australia, 46.4% of smokers in a small survey reported interest in using proactive telephone services for smoking cessation.\textsuperscript{16} These high levels of intent, compared with actual quitline reach, suggest that intent to use quitlines may not strongly predict eventual use.

Little research is available about reasons most smokers do not use quitlines. A small (n = 194) study in Australia found that the primary barriers to using proactive telephone service included preferring to quit without help (32.7%) and belief that the service would not help (25%).\textsuperscript{16} In Vermont, 17% of smokers who tried to quit in the past year without using the quitline reported believing that the treatment does not work; additional barriers were not assessed.\textsuperscript{15} One recent prospective study identified possible barriers to calling a telephone quitline.\textsuperscript{17} After a list of barriers was developed and validated, several reasons why respondents might not call a quitline were identified: stigma, low appraisal of service, no need for assistance, poor fit with service, privacy concerns, having others who will help, and being unsure of staff's motives. Although intent to call the quitline in the next 30 days at baseline resulted in higher odds of actually calling the quitline within the next 2 months (multivariate odds ratio [OR] = 1.64; 95% confidence interval [CI], 1.28–2.12), fewer than half (22% overall at 2-month follow-up) of smokers called the quitline out of those who said they would probably or definitely call a quitline in the next 30 days (56% overall at baseline). Being unsure of quitline staff's motives was the only barrier predictive of actually calling the quitline. Overall endorsement of barriers was low. The study called for further research into cognitive barriers to using telephone quitlines.

Examining the group of smokers who have very low intentions to use the quitline might be informative because this group will limit the potential reach of the quitline and highlight barriers to calling the quitline. Low rates of intention to call the quitline may vary by population subgroup. Barriers shared across populations may point to broader media approaches that address similar topics across populations, whereas subpopulations with different barriers could suggest the need for more targeted media. Variations in the proportion of smokers with low intentions to call the quitline may also suggest targeting of campaigns to certain populations. Determining the rates of intent and barriers to calling will be particularly important among groups in Colorado who have been found to have higher smoking prevalence, such as Latinos and gay, lesbian, or bisexual (GLB) smokers.\textsuperscript{18} To further understand quitline disparities and barriers and thereby suggest future directions for media approaches, this study focused on differences among population subgroups in reporting low intentions to use the Colorado QuitLine (QL) and self-reported reasons why smokers did not intend to call. The Colorado QL provides up to five proactive coaching calls and 4 to 8 weeks of free NRT to medically eligible callers. This study expands the literature by reporting population-level low intentions of using the quitline and self-reported barriers to quitline use, neither of which are well established. Better understanding of these measures can guide interventions to increase quitline reach and increase consumer demand for this evidence-based cessation treatment across important subpopulations.

METHODS

Design
Data for this study are from the 2008 adult Colorado Tobacco Attitudes and Behaviors Survey (TABS), which was funded through a tobacco tax increase approved by voters in Colorado. The TABS, which was also conducted in 2001 and 2005, is a population-level, weighted survey that includes general demographics, smoking and cessation history, other tobacco use, and attitudes about tobacco-related policies. The 2008 TABS also included questions about past QL use, reasons for nonuse, knowledge of QL services, and intention to use the QL. The TABS received approval from the Colorado Multiple Institutional Review Board; all data used for this study were deidentified.

Sample
Survey respondents consisted of a random, stratified sample of Colorado adults (≥18 years) sampled via random-digit dialing on landline and cell phone sampling frames. Cell phones were included as part of the sample starting in 2008, reducing noncoverage bias in a year when an estimated 17% to 18% of U.S. households no longer had landline telephones.\textsuperscript{19} Several groups were oversampled, including smokers and former smokers, African-American adults, and adults in certain parts of the state. Respondents were interviewed in English or Spanish according to their preference. A total of 14,156 interviews (12,623 landline and 1,533 cell phone) were conducted in 2008. The overall response rate was 32.7% for cell phone respondents and 46.7% for landline respondents; respondents were weighted to represent the overall population of Colorado. Weighting corrects for three factors to decrease potential biases associated with the survey respondents: (1) unequal probabilities of selection owing to the sample design, (2) differential nonresponse among subgroups of the population, and (3) differences in demographic characteristics of the sample compared with the total population.

This secondary analysis of 2008 TABS data was limited to current smokers (≥100 lifetime cigarettes and currently smoke every day or some days) who had heard of the Colorado QL, answered a subsequent question about intent to call the QL (never, might call but not in next 6 months, will call in next 6 months, or will call in next month), and did not report that they never intend to quit (n = 1,662).

Measures
Primary outcome measures included intent to use the QL (“What best describes your intentions regarding calling the QuitLine in the future?”),
The study included a descriptive analysis of intent to use the QL (by four response categories listed above) by demographic and socioeconomic factors. After the descriptive analysis, never intending to use the QL was chosen as the primary category of interest for subsequent analysis based on several factors. First, almost half of all study respondents reported this category of intending to never use the QL, making it an important category limiting reach of the QL. Second, intent to call the QL is not well associated with eventually calling the QL; the “never” category was felt to be the extreme response category of the group and therefore the most reliable indicator of actually never calling the QL. Multivariate logistic regression was used to analyze the relative importance of demographic and socioeconomic factors of interest in intending to never call the QL, adjusted for smoking and cessation history. All primary independent variables and covariates were analyzed univariately; all covariates significant at $p = .10$ and below were then added in a forward stepwise manner to the multivariate model and retained for significance of $p < .05$. Feasible interactions (i.e., sex by ethnicity) were assessed for significance in the full multivariate model.

The final stage of the analysis involved analyzing reasons for not intending to call the QL and what respondents reported the QL provides by never intending vs. not in the next six months, with a $\chi^2$ test for significance between the two groups for each analysis. Finally, the two groups were combined to examine overall differences in reasons and what the QL provides by subpopulation. The rationale for expanding this final stage of analysis to include those who may call but not in the next 6 months was to explore differences between this group and those who intend never to call that may suggest overcoming barriers to using the QL. All analyses were weighted to adjust for complex-sample survey design and conducted in SU-DAAN 10.0 (Research Triangle Park, North Carolina).

RESULTS

Almost half (45.6%) of study respondents never intended to call the QL, and another fourth (26.1%) said they may call but not within the next six months (Table 1). Intent varied significantly by sex and race/ethnicity. Men were more likely to intend never to call the QL compared with women (51.5% vs. 38.3%). Latinos intended never to call the QL more than half again as often as white, non-Latinos (65.1% vs. 40.1%); the difference by sex persisted among Latinos (76.9% of Latino men vs. 38.1% of Latina women never intended to call [data not shown]). Although the small sample size of Spanish-speaking Latinos ($n = 37$) precluded analysis as a separate subgroup, there was not a difference in trend of never intending to call the QL between English and Spanish-speaking Latinos (66.4% vs. 56.5%). Black/African-American smokers were three times more likely to intend to call the QL in the next month compared with white, non-Latino smokers (25.5% vs. 8.2%).

In univariate logistic regression analysis, several subpopulations had significantly greater odds compared with their counterparts of never intending to call the QL, including men, Latinos (compared with white, non-Latino, black/African-American, and other smokers combined), GLB smokers, and those with private insurance or no insurance compared with Medicaid (Table 2). Other demographic and socioeconomic variables were not associated with intending never to call the QL. In multivariate analysis, being Latino, of GLB sexual orientation, or having private insurance or no insurance resulted in significantly higher odds of intending never to call the QL compared with their counterparts (Table 2).

The most common reason for intending not to call the QL was not perceiving a need for assistance, which was reported by one-third of respondents. Reasons varied by whether study respondents never intended to call the QL or might call but not in the next six months (Table 3). Compared with those who might call but not in the next 6 months, those who never intend to call reported that they did not need assistance twice as often and that the QL modality will not work for them more than twice as often. Reasons for not intending to call the QL were also significantly different by ethnicity (Latino vs. non-Latino). The primary differences by ethnicity were that 16.5% of Latinos said they would not call because they do not smoke enough or are not addicted, compared with 1.5% of non-Latinos. Latinos were also one-fourth as likely to report that the QL modality will not work for them (2.3% vs. 10.8% among non-Latinos) and that they were not ready to quit (2.3% vs. 11.1% among non-Latinos [data not shown]). Reported cigarettes per day were analyzed post hoc to see if Latinos who never intended to use the QL actually did smoke less; there was no significant difference in median cigarettes smoked per day between Latinos who never intended to use the QL vs. all other Latino smokers (3.5 [95% CI, 1.4–7.9] vs. 4.7 [95% CI, 1.0–8.3]).
respectively). Latinos who never intended to call the QL smoked a median of 3.5 cigarettes per day (95% CI, 1.4–7.9), marginally less than the median among non-Latinos of 9.5 (95% CI, 7.7–10.2). Eighty-eight percent of Latinos who never intended to call the QL were English speaking, with no significant difference in primary language spoken from Latino smokers with other intent levels to call the QL.

Knowledge of what the QL provides also varied by whether study respondents never intended to call the QL or might call but not in the next 6 months (Table 4). Those who intended never to use the QL were half again as likely to respond that the QL provided “other” services and therefore less likely to report that the QL specifically provided telephone counseling or nicotine patches or gum. GLB status was the only demographic variable with a significant difference in beliefs about what the QL provides by subgroup; GLB study respondents were more likely to report that the QL provided “other” services compared with heterosexual study respondents.

DISCUSSION

Almost three-fourths of Colorado smokers who intend to quit at some time in the future have no intention or only weak intention to use the Colorado QL for assistance. Latino smokers, GLB smokers, and those with no or
private insurance are the most likely to have no intention to call the QL, primarily because they see no need for assistance with smoking cessation. These findings suggest a substantial limit on potential quitline reach in general, and especially among three populations who have high smoking prevalence and low cessation success rates.

Latinos were more than twice as likely to report never intending to call the QL compared with non-Latinos. Importantly, this difference was not explained in multivariate modeling by a lower cigarette per day or rate of daily smoking, despite more than one in six Latinos reporting that they do not smoke enough to use the QL and past studies showing that Latinos do smoke lower numbers of cigarettes per day. Nor was it explained by SES or gender, despite the fact that smoking prevalence is higher among Latino men than women. Future qualitative research is needed to further explain the initial findings identified in this study, such as not smoking enough to quit, as well as to determine additional barriers to using the QL. For example, one qualitative study on the use of smoking cessation medications among Latinos in Colorado identified the perception that quitting should involve willpower only, rather than treatment.

GLB smokers were most likely to intend to never call the QL at a striking three-fourths of the population. Although differences in reasons for not using the QL were not significant between GLB and heterosexual groups, a fairly low number of GLB study respondents limited statistical power in this group. Of note, however,

### Table 2

<table>
<thead>
<tr>
<th>Odds Ratios of Factors Associated With Intent Never to Call the QuitLine Among Current Smokers Who Do Not Rule Out Quitting*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Men</td>
</tr>
<tr>
<td>Women</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
</tr>
<tr>
<td>Non-Latino‡</td>
</tr>
<tr>
<td>Latino</td>
</tr>
<tr>
<td><strong>GLB</strong></td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td><strong>Insurance</strong></td>
</tr>
<tr>
<td>Private</td>
</tr>
<tr>
<td>Medicare</td>
</tr>
<tr>
<td>Medicaid</td>
</tr>
<tr>
<td>No insurance</td>
</tr>
<tr>
<td><strong>Quit attempts in past year</strong></td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>≥1</td>
</tr>
<tr>
<td><strong>Current daily smoker</strong></td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td><strong>Ever called quitline</strong></td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

* GLB indicates gay, lesbian, or bisexual.
† The multivariate analysis was also adjusted for all the covariates in Table 1; nonsignificant univariate predictors are not shown in the table.
‡ White, black, and “other” race/ethnicity categories were combined in this analysis owing to no significant differences in odds ratios between these groups.

### Table 3

<table>
<thead>
<tr>
<th>Reasons for Not Calling the QuitLine Among Current Smokers Who Do Not Rule Out Quitting, by Intent to Call the QuitLine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Service Inadequacies</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Intent to call*</td>
</tr>
<tr>
<td>Intend never to call</td>
</tr>
<tr>
<td>Won’t call in next 6 months</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

* Overall $\chi^2 < 0.05$. 

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not a single GLB respondent reported that the QL modality would not work for them, suggesting that there may not be an inherent characteristic of the QL modality preventing its use among the GLB population. Study results suggest that the GLB population might not have as much understanding of what the QL can offer. A much larger proportion of GLB respondents reported “other” reasons for not using the QL, suggesting that further research into QL barriers is warranted in the GLB population.

The differences in intent to use the QL by insurance status were interesting and somewhat unexpected. Previous research supports that the QL reaches the low SES population of smokers representative to their smoker proportions,27 and the current study suggested that most in the Medicaid population reported positive intentions to use the QL. However, the much higher proportion of those with no insurance as well as private insurance who intend never to call the QL was surprising and somewhat alarming. Among the privately insured, increasing numbers of states, including Colorado, are expanding partnerships with private insurers to share or bear the costs of providing QL services to their own members. This study suggested that QL acceptability and increased reach might be significantly limited in the privately insured population. More surprising was the low intentions of those with no insurance to ever use the QL; reasons for not using the QL did not suggest specific differences based on insurance status to explain this finding. Perhaps the QL has developed a type of “social stigma” related to being a free public service or a “handout” that was not independently captured through our study. This possibility deserves further exploration along with other barriers to QL use among the noninsured to continue to expand QL reach in this underserved and high smoking prevalence population.

Reasons why the majority of smokers do not plan to call the QL point to new potential ways to reach smokers. This study supports the few previous studies on this topic that have identified not wanting assistance as a main reason not to call.16,17 However, although a previous study found that the perception that the QL would not work was a barrier for 25% of respondents,16 only 8.9% of respondents in this study said it would not work for them. This difference could be due to differences in study methodology or setting. However, it points to the need to address a more upstream barrier to QL use related to the need for cessation treatment in general before addressing barriers more specific to the QL. Media messages could focus on the idea that getting help to quit smoking is beneficial and is not a sign of weakness. Among the group who may call but not in the next 6 months, approximately one of five said they were not ready or did not want to quit. That suggests that these individuals are not necessarily resistant to the QL but to quitting itself; outreach focusing on motivation to quit in general may be a way to encourage QL use among these individuals. Furthermore, because higher proportions of those who never intend to call may not have known exactly what services the QL provides compared with those with some intent to call, raising awareness about the specific services the QL provides may motivate more smokers to call.

Compared with the most recent study on barriers to calling a quitline,17 the current study may offer additional insight into why people do not call a QL because it focused on self-reported reasons for low intention of calling rather than barriers among those who intend to call. Additionally, the current study expands the list of barriers to calling the QL compared with the previous study by uncovering the two reasons of not being ready to quit or not smoking enough to use treatment, collectively comprising almost 15% of reasons for being unlikely to call the QL. Further research needs to replicate and expand the current study’s findings in other settings and determine prospectively the relationship between low intentions of using the QL and future cessation behavior. For future studies, it may be useful to analyze low intentions to call the QL and reasons for that low intention using a theoretical framework (e.g., the theory of planned behavior involving the link between intent and behavior with focus on how attitudes, subjective norms, and perceived control influence intent).28

This study has limitations. If intent to call the QL is not associated with future behavior, the validity of these findings could be limited because the primary outcome is intent to call the QL rather than actually calling the QL. However, because most smokers do not call the QL, reporting never or not intending to call in the next 6 months probably is associated with not actually calling; the question becomes whether the two categories represent important differences in magnitude of strength of low intentions. Although this question warrants further study, several findings of significant differences in reasons for not intending to call and belief in what the QL provides suggest that the categories of intention to call are different and meaningfully related with causal factors. Based on the strengths of the study as providing a population-level analysis of intent to use the QL and contributing to the scant literature on barriers to QL use, intent to use the QL was deemed to be an adequate measure.

Table 4
Perceptions of What the QuitLine Provides Among Current Smokers Who Do Not Rule Out Quitting, by Intent to Call the QuitLine

<table>
<thead>
<tr>
<th>Intent to Call the QuitLine*</th>
<th>Intend Never to Call</th>
<th>Won’t Call in Next 6 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone counseling</td>
<td>37.6%</td>
<td>42.4%</td>
</tr>
<tr>
<td>Nicotine patches/gum</td>
<td>5.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Both</td>
<td>11.5%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Other</td>
<td>45.9%</td>
<td>30.9%</td>
</tr>
</tbody>
</table>

* Overall χ² < 0.05.
In conclusion, this is one of the first population-level surveys to assess low intentions of using the QL to determine disparities in potential reach of the QL and ways to address barriers based on reasons for not intending to use the QL. Latinos, GLB smokers, and those without insurance appear to have the lowest intentions to ever use the QL, coupled with high smoking prevalence and low cessation success rates. Addressing general barriers such as believing in no need for assistance to quit as well as population-specific barriers may help increase the reach of the QL in these important subpopulations. QL reach among the privately insured population may also be limited based on this study. Further research needs to delineate and verify the most important barriers to QL use and methods to overcome them.

References


SO WHAT? Implications for Health Promotion Practitioners and Researchers

What is already known on this topic?

Despite knowledge that quitlines are underutilized, few population-level studies have focused on disparities in the rate of low intent to use quitlines and reasons for low intent.

What does this article add?

This study indicated that nearly three-fourths of Colorado smokers have low intentions or no intentions of using a quitline, with Latinos, GLB smokers, and the uninsured having the lowest intent and also higher smoking prevalence and lower cessation success. A main reason for this lack of intent is the belief that assistance is not needed to quit.

What are the implications for health promotion practice or research?

Understanding this widespread low intent and specific reasons among subpopulations may inform targeted media campaigns designed to increase quitline reach. This study also suggests that further research is needed to determine the relationship between intent to use the QL and future cessation behavior.