

Tobacco Control/Underserved Populations

# 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.<sup>1</sup> 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.<sup>2–4</sup>

Quitlines have been found to be effective across a wide range of demographic subgroups,<sup>2–5</sup> and callers indicate high levels of satisfaction with quitlines across race/ethnicity, educational level, rural/urban location, and sex.<sup>6</sup> Quitlines appear to reach disparate 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.<sup>7</sup> 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.<sup>8–11</sup>

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,<sup>12</sup> but state-level utilization rates reached an average of 1% in 2004.<sup>13</sup> Efforts to increase quitline reach often rely on media or other promotional strategies and are constrained by budgetary limitations.

Emily K. Burns, MD, MSPH, and Arnold H. Levinson, PhD, are with the Colorado School of Public Health, Aurora, Colorado. Elizabeth Ann Deaton, MA, is with the Cancer Prevention & Control Division, University of Colorado Denver, Aurora, Colorado.

Send reprint requests to Elizabeth Ann Deaton, MA, Cancer Prevention & Control Division, University of Colorado Denver, 13001 E 17th Place/MS F542, Aurora, CO 80045; elizabeth.deaton@ucdenver.edu.

This manuscript was submitted June 11, 2010; revisions were requested September 7, 2010; the manuscript was accepted for publication October 7, 2010.

Copyright © 2011 by American Journal of Health Promotion, Inc.  
0890-1171/11/\$5.00 + 0  
DOI: 10.4278/ajhp.100611-QUAN-183

Increasing consumer demand for evidence-based smoking cessation treatment is a national public health priority.<sup>14</sup> 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<sup>15</sup>; in Australia, 46.4% of smokers in a small survey reported interest in using proactive telephone services for smoking cessation.<sup>16</sup> 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%).<sup>16</sup> 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.<sup>15</sup> One recent prospective study identified possible barriers to calling a telephone quitline.<sup>17</sup> 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 intervals [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.<sup>18</sup> 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 atti-

tudes 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 ( $\geq 18$  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.<sup>19</sup> 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 1533 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 ( $\geq 100$  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 ( $n = 1662$ ).

### Measures

Primary outcome measures included intent to use the QL ("What best describes your intentions regarding calling the QuitLine in the future?"),

barriers to calling the QL (“People have different reasons for not using the QL. What are your most important reasons?” [asked of those who expected never to call the QL or not in the next 6 months]), and knowledge of QL services (“What do you think the QuitLine provides to callers?”). Covariates included demographic characteristics (sex, age, race/ethnicity, sexual orientation), SES (federal poverty level, education level, insurance status), mental illness or limitations, smoking history (daily smoking, cigarettes per day), and cessation history (past quit attempts, previous QL use).

Verbatim responses to the QL barriers question were coded using a combination of theoretically conceived categories: factors developed by Solomon et al.<sup>17</sup> and novel codes that emerged from the verbatim responses. Two coders independently assigned the verbatim responses to the code list, and differences were resolved by the lead investigator. The  $\kappa$  coefficient for inter-rater reliability was .70, indicating substantial agreement.<sup>20–22</sup> A similar process was used to develop an analytic variable on knowledge of QL services; verbatim responses were coded into four categories, and precoded responses were merged with those categories.

### Analysis

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 6 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 6 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],

**Table 1**  
**Intent to Call the Colorado QuitLine Among Current Smokers Who Do Not Rule Out Quitting, by Demographic and Mental Health Characteristics\***

	Sample Size	Weighted Sample	Intend Never to Call	Will Not Call in Next 6 Months	Will Call in Next 6 Months	Will Call in Next Month
Total			45.6%	26.1%	18.1%	10.2%
Sex†						
Men	653	250,950	51.5%	24.9%	14.9%	8.6%
Women	1009	208,114	38.3%	27.5%	22.0%	12.2%
Age, y						
18–24	154	83,233	45.2%	26.0%	19.3%	9.5%
25–44	597	221,377	49.4%	25.9%	15.0%	9.7%
45–64	759	134,736	39.6%	26.3%	22.4%	11.6%
≥65	152	19,718	44.3%	26.8%	19.4%	9.5%
Race/ethnicity†						
White, non-Latino	1298	321,179	40.1%	31.1%	20.6%	8.2%
Latino	175	93,247	65.1%	11.8%	10.9%	12.2%
Black/African-American	102	19,184	36.0%	22.5%	16.1%	25.5%
Other	87	25,453	50.1%	17.5%	15.7%	16.7%
Sexual orientation						
Heterosexual	1458	398,076	44.3%	26.1%	19.1%	10.6%
Gay, lesbian, or bisexual	64	25,586	76.8%	10.6%	6.8%	5.5%
Insurance						
Private	865	225,789	48.6%	25.5%	18.5%	7.4%
Medicare	141	20,815	28.7%	34.2%	25.7%	11.4%
Medicaid	93	28,032	22.0%	16.9%	31.0%	30.1%
No insurance	447	154,713	44.9%	27.8%	15.8%	11.4%
High school						
12th grade or less; GED	239	73,768	50.3%	22.9%	15.8%	11.0%
High school graduate to some college	980	280,318	42.0%	27.7%	19.1%	11.3%
College graduate/postgraduate	343	84,231	53.8%	21.2%	18.0%	7.0%
Federal poverty level						
<100%	191	54,669	40.0%	25.9%	17.0%	17.2%
100%–199%	410	116,518	43.4%	25.0%	18.9%	12.7%
≥200%	920	239,264	46.7%	27.8%	19.1%	6.3%
Mental illness diagnosis or limitation						
Yes	1373	359,904	39.4%	30.1%	16.1%	14.3%
No	245	88,732	47.0%	24.8%	18.8%	9.4%

\* GED indicates general equivalency diploma.

† Overall  $\chi^2 < 0.05$ .

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 respon-

dents 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

**Table 2**  
**Odds Ratios of Factors Associated With Intent Never to Call the QuitLine Among Current Smokers Who Do Not Rule Out Quitting\***

	Univariate Odds Ratio	Multivariate Odds Ratio†
Sex		
Men	1.7 (1.2, 2.5)	
Women	Referent	
Ethnicity		
Non-Latino‡	Referent	Referent
Latino	2.7 (1.5, 4.9)	2.5 (1.4, 4.7)
GLB		
No	Referent	Referent
Yes	4.2 (1.8, 9.4)	5.2 (2.4, 11.4)
Insurance		
Private	3.4 (1.5, 7.7)	4.2 (1.3, 14.1)
Medicare	1.4 (0.6, 3.7)	2.4 (0.7, 8.8)
Medicaid	Referent	Referent
No insurance	2.9 (1.2, 7.0)	3.8 (1.1, 13.0)
Quit attempts in past year		
0	1.5 (1.0, 2.3)	1.9 (1.2, 2.8)
≥ 1	Referent	Referent
Current daily smoker		
No	2.7 (1.6, 4.5)	2.7 (1.6, 4.5)
Yes	Referent	Referent
Ever called quitline		
No	3.4 (2.2, 5.3)	2.6 (1.6, 4.3)
Yes	Referent	Referent

\* 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.

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.<sup>23</sup> 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.<sup>24</sup> Past research has shown that targeted media campaigns increase calls to the QL among Latinos<sup>25,26</sup>; better understanding the effects of the media campaign might also elucidate the barriers that it overcame.

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 3**  
**Reasons for Not Calling the QuitLine Among Current Smokers Who Do Not Rule Out Quitting, by Intent to Call the QuitLine**

	Specific Service Inadequacies	QuitLine Not Effective	QuitLine Modality Won't Work for Me	No Need for Assistance	Need Different Services	Don't Have Time	Not Ready/Don't Want to Quit	Not Addicted/Don't Smoke Very Much	Lack of Information About QuitLine	Other
Intent to call*										
Intend never to call	2.3%	3.7%	11.9%	43.2%	3.2%	2.0%	2.7%	6.4%	2.0%	22.6%
Won't call in next 6 months	4.0%	2.1%	3.7%	20.1%	1.8%	6.5%	20.4%	1.8%	6.1%	33.5%
Total	2.9%	3.1%	8.9%	34.8%	2.7%	3.6%	9.1%	4.8%	3.5%	26.6%

\* Overall  $\chi^2 < 0.05$ .

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

	Intent to Call the QuitLine*	
	Intend Never to Call	Won't Call in Next 6 Months
Telephone counseling	37.6%	42.4%
Nicotine patches/gum	5.0%	12.5%
Both	11.5%	14.3%
Other	45.9%	30.9%

\* Overall  $\chi^2 < 0.05$ .

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,<sup>27</sup> 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.<sup>16,17</sup> However, although a previous study found that the perception that the QL would not work was a barrier for 25% of respondents,<sup>16</sup> 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,<sup>17</sup> 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 intent 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).<sup>28</sup>

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 intent 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.

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

1. Fiore M, Jaen C, Baker T, et al. *Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline*. Rockville, Md: US Department of Health and Human Services; 2008.
2. Tinkelman D, Wilson SM, Willett J, Sweeney CT. Offering free NRT through a tobacco quitline: impact on utilisation and quit rates. *Tob Control*. 2007;16(suppl 1):i42-i46.
3. Swartz SH, Cowan TM, Klayman JE, et al. Use and effectiveness of tobacco telephone counseling and nicotine therapy in Maine. *Am J Prev Med*. 2005;29:288-294.
4. An LC, Schillo BA, Kavanaugh AM, et al. Increased reach and effectiveness of a statewide tobacco quitline after the addition of access to free nicotine replacement therapy. *Tob Control*. 2006;15:286-293.
5. Miller N, Frieden TR, Liu SY, et al. Effectiveness of a large-scale distribution programme of free nicotine patches: a prospective evaluation. *Lancet*. 2005;365:1849-1854.
6. Maher JE, Rohde K, Dent CW, et al. Is a statewide tobacco quitline an appropriate service for specific populations? *Tob Control*. 2007;16(suppl 1):i65-i70.
7. Sood A, Andoh J, Rajoli N, et al. Characteristics of smokers calling a national reactive telephone helpline. *Am J Health Promot*. 2008;22:176-179.
8. Shiffman S, Brockwell SE, Pillitteri JL, Gitchell JG. Individual differences in adoption of treatment for smoking cessation: demographic and smoking history characteristics. *Drug Alcohol Depend*. 2008;93:121-131.
9. Cokkinides VE, Halpern MT, Barbeau EM, et al. Racial and ethnic disparities in smoking-cessation interventions: analysis of the 2005 National Health Interview Survey. *Am J Prev Med*. 2008;34:404-412.
10. Levinson AH, Perez-Stable EJ, Espinoza P, et al. Latinos report less use of pharmaceutical aids when trying to quit smoking. *Am J Prev Med*. 2004;26:105-111.
11. Cokkinides VE, Ward E, Jemal A, Thun MJ. Under-use of smoking-cessation treatments: results from the National Health Interview Survey, 2000. *Am J Prev Med*. 2005;28:119-122.
12. Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs*. Atlanta, Ga: US Department of Health and Human Services; 2007.
13. Cummins SE, Bailey L, Campbell S, et al. Tobacco cessation quitlines in North America: a descriptive study. *Tob Control*. 2007;16(suppl 1):i9-i15.
14. Orleans CT. Increasing the demand for and use of effective smoking-cessation treatments: reaping the full health benefits of tobacco-control science and policy gains—in our lifetime. *Am J Prev Med*. 2007;33(6 suppl 1):S340-S348.
15. Hughes JR, Marcy TW, Naud S. Interest in treatments to stop smoking. *J Subst Abuse Treat*. 2009;36:18-24.
16. Paul CL, Wiggers J, Daly JB, et al. Direct telemarketing of smoking cessation interventions: will smokers take the call? *Addiction*. 2004;99:907-913.
17. Solomon LJ, Hughes JR, Livingston A, et al. Cognitive barriers to calling a smoking quitline. *Nicotine Tob Res*. 2009;11:1339-1346.
18. Tobacco Program Evaluation Group. *Adult Tobacco Use and Exposure, Colorado 2008*. Denver, Colo: Colorado School of Public Health; 2009.
19. Blumberg SJ, Luke JV. *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, January-June 2008*. Atlanta, Ga: National Center for Health Statistics; 2008.
20. Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics*. 1977;33:159-174.
21. Cohen J. A coefficient of agreement for nominal scales. *Educ Psychol Meas*. 1960;20:37-46.
22. Fleiss JL, Cohen J. The equivalence of weighted kappa and the intraclass correlation coefficient as measures of reliability. *Educ Psychol Meas*. 1973;33:613-619.
23. Zhu S-H, Pulvers K, Zhuang Y, Baezconde-Garbanati L. Most Latino smokers in California are low-frequency smokers. *Addiction*. 2007;102:104-111.
24. Levinson AH, Borrayo EA, Espinoza P, et al. An exploration of Latino smokers and the use of pharmaceutical aids. *Am J Prev Med*. 2006;31:167-171.
25. Burns EK, Levinson AH. Reaching Spanish-speaking smokers: state-level evidence of untapped potential for quitline utilization. *Am J Public Health*. 2010;100(suppl 1):S165-S710.
26. Wetter DW, Mazas C, Daza P, et al. Reaching and treating Spanish-speaking smokers through the National Cancer Institute's Cancer Information Service. A randomized controlled trial. *Cancer*. 2007;109(suppl 2):406-413.
27. Burns E, Tong S, Levinson A. *Colorado QuitLine Report, December 2002-June 2008*. Aurora, Colo: Tobacco Program Evaluation Group, University of Colorado, Denver; 2009.
28. Montañó DE, Kasprzyk D. Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. In: Glanz K, Rimer BK, Viswanath K, eds. *Health Behavior and Health Education: Theory, Research, and Practice*. 4th ed. San Francisco, Calif: Jossey-Bass; 2008:68-92.

#### 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.

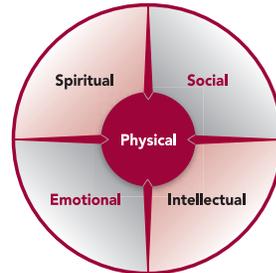
Online  
subscriptions  
now available

Volume 25, Number 1  
September/October 2010

# The Wisdom of Practice and the Rigor of Research

## Definition of Health Promotion

“Health Promotion is the art and science of helping people discover the synergies between their core passions and optimal health, enhancing their motivation to strive for optimal health, and supporting them in changing their lifestyle to move toward a state of optimal health. Optimal health is a dynamic balance of physical, emotional, social, spiritual, and intellectual health. Lifestyle change can be facilitated through a combination of learning experiences that enhance awareness, increase motivation, and build skills and, most important, through the creation of opportunities that open access to environments that make positive health practices the easiest choice.”



**DIMENSIONS OF  
OPTIMAL HEALTH**

(O'Donnell, *American Journal of Health Promotion*, 2009, 24,1,iv)

“The *American Journal of Health Promotion* provides a forum for that rare commodity — *practical and intellectual exchange between researchers and practitioners.*”

**Kenneth E. Warner, PhD**

Dean and Avedis Donabedian Distinguished University Professor of Public Health  
School of Public Health, University of Michigan

“The contents of the *American Journal of Health Promotion* are *timely, relevant,* and most important, *written and reviewed by the most respected researchers in our field.*”

**David R. Anderson, PhD, LP**

Senior Vice President & Chief Health Officer, StayWell Health Management

*Subscribe today...*

ANNUAL SUBSCRIPTION RATES: (Available 1/1/11. Good through 12/31/11)

	INDIVIDUAL		INSTITUTION	
	Print + Online	Print	Online	Print + Online
U.S.	\$139	\$184	\$359	\$359
Canada and Mexico	\$148	\$193	\$359	\$368
Other Countries	\$157	\$202	\$359	\$377

Call 800-783-9913 (U.S. only) or 818-760-8520



Editor in Chief

Michael P. O'Donnell, PhD, MBA, MPH

Associate Editors in Chief

Margaret Schneider, PhD

Jennie Jacobs Kronenfeld, PhD

Shirley A. Musich, PhD

Kerry J. Redican, MPH, PhD, CHES

SECTION EDITORS

Interventions

Fitness

Barry A. Franklin, PhD

Medical Self-Care

Lucy N. Marion, PhD, RN

Nutrition

Karen Glanz, PhD, MPH

Smoking Control

Michael P. Eriksen, ScD

Weight Control

Kelly D. Brownell, PhD

Stress Management

Cary Cooper, CBE

Mind-Body Health

Kenneth R. Pelletier, PhD, MD (hc)

Social Health

Kenneth R. McLeroy, PhD

Spiritual Health

Larry S. Chapman, MPH

Strategies

Behavior Change

James F. Prochaska, PhD

Culture Change

Daniel Stokols, PhD

Population Health

David R. Anderson, PhD, LP

Applications

Underserved Populations

Antronette K. (Toni) Yancey, MD, MPH

Health Promoting Community Design

Bradley J. Cardinal, PhD

The Art of Health Promotion

Larry S. Chapman, MPH

Research

Database

Leslie Spenser, PhD

Financial Analysis

Ron Z. Goetzel, PhD

Measurement Issues

Shawna L. Mercer, MSc, PhD