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Traditional and Innovative Promotional Strategies of Tobacco Cessation Services: A Review of the Literature

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Abstract

Introduction—An estimated 43.5 million American adults currently smoke cigarettes. Well-designed tobacco education campaigns with adequate reach increase cessation and reduce tobacco use. Smokers report great interest in quitting but few use effective treatments including quitlines. This review examined traditional (TV, radio, print ads) versus innovative tobacco cessation (internet, social media) promotions for quitline services.

Methods—Between November 2011 and January 2012, searches were conducted on EBSCO, PubMed, Wilson, OCLC, CQ Press, Google Scholar, Gale, LexisNexis, and JSTOR.

Results—Existing literature shows that the amount of radio and print advertising, and promotion of free cessation medications increases quitline (QL) call volume. Television advertising volume seems to be the best predictor of QL service awareness. Much of the literature on Internet advertising compares the characteristics of participants recruited for studies through various channels. The majority of the papers indicated that Internet-recruited participants were younger; this was the only demographic characteristic with high agreement across studies.

Conclusions—Traditional media was only studied within mass media campaigns with TV ads having a consistent impact on increasing calls to quitlines, therefore, it is hard to distinguish the impact of traditional media as an independent QL promotion intervention. With innovative media, while many QL services have a presence on social media sites, there is no literature on evaluating the effectiveness of these channels for quitline promotion.

Keywords

tobacco; smoking cessation; tobacco use cessation

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Disclaimer:

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Introduction

Cigarette smoking and exposure to secondhand smoke result in approximately 443,000 premature deaths and \$193 billion in health-care costs and productivity losses in the United States each year.¹ In 2010, 68.8% of current cigarette smokers said they would like to completely stop smoking, and 52.4% had tried to quit smoking in the past year.² In 1999, the Centers for Disease Control and Prevention (CDC) created the National Tobacco Control Program (NTCP) to reduce disease, disability, and death related to tobacco use.³ The NTCP funds program activities in all 50 states, the District of Columbia, eight U.S. territories and jurisdictions, six national networks, and eight tribal support centers. To help smokers and other tobacco users quit, all states now have a cessation quitline that can be accessed through a national toll-free number (1-800-QUIT NOW) with many state QL services also offering free cessation medications as part of their promotional strategy.³ Quitlines have proven to be effective with smokers who use them^{4,5,6,7} and play an integral role in media-based efforts to increase quit attempts in the general population.⁸ However, the use of QL services is low and most people quit on their own. The field of advertising is inherently dynamic and has traditionally included television, radio, newsprint, and out of home (i.e., posters or billboards) promotional campaigns. The Internet has added new dimensions to this field with an estimated 85% of the US population with Internet access.⁹ As such, QL services may be provided to tobacco users through an increasing array of promotional activities available via innovative digital (online and mobile) social media.¹⁰ To improve the likelihood of long-term tobacco cessation, it is important to understand and compare how different populations respond to traditional and innovative promotional activities that increase QL usage. Understanding the reach and utilization of innovative strategies, can further assist in determining which promotional interventions lead to a higher quitline call volume. The purpose of this literature review is to provide a summary of the published research relevant to promotional QL activities. It is not meant to be a systematic review of all research available on the topic of traditional and innovative promotional methods used in tobacco cessation.

Methods

Data Sources

A literature review was conducted between November 2011 and January 2012. Studies were retrieved from multiple peer-reviewed article databases including: EBSCO¹¹, PubMed¹², Wilson¹³, OCLC¹⁴, CQ Press¹⁵, Google Scholar¹⁶, Gale¹⁷, LexisNexis¹⁸, and JSTOR¹⁹ for articles related to QL service promotion and recruitment practices with specific emphasis on its effects on QL programs of interest and usage of services. This review includes literature published from 1980 through January 2012. Articles that focused on smoking cessation interventions and laws and policies specific to cessation were excluded.

Data Extraction

Extraction was conducted independently by one researcher. Article abstracts were initially reviewed to determine relevance for inclusion. If the abstract was selected for initial review, the full article was downloaded so that the researcher could undertake a more thorough

review. This resulted in a set of 52 full-text documents. After completion of in depth reviews, articles that were excluded were those that focused on smoking cessation rather than promotions, or literature that analyzed smoking laws and policies and their effects on the QL calls. An agreement was reached by the study team on the final 30 documents for inclusion.

Study Selection

Traditional Methods Selection—Table 1 lists the search terms that were used under specific groupings to find appropriate papers on the recruitment of smokers to a quitline or cessation program through traditional channels (television, radio, print, mailings). A few studies identified by conducting a search using the television and advertisement terms only (Table 1); these were included because they still provided general outcomes on smoking-related traditional advertisement activities. Of the 30 total relevant references, 19 discussed at least one form of traditional promotion.

Innovative Methods Selection—Table 2 lists the search terms used to identify literature related to innovative QL promotional methods (Web, social media, mobile applications). Seven of the 30 references we found were related to innovative channels.

Other Literature—In addition to the 19 traditional and 7 innovative references generated from the search, an additional four case studies that were published by the North American Quitline Consortium²⁰ were included for a total of 30 relevant references. Figure 1 provides a visual representation of the search strategy and exclusion process used for this review.

Results

Traditional Promotion

Television—A majority of relevant literature available on QL promotions has been focused on television, and the literature shows that the level of television advertising is strongly correlated with QL call volume. Of the 19 references found for traditional media, 15 examined television advertising with some incorporating additional media. Table 3 displays the relevant literature on traditional promotions.²¹⁻³⁹

Radio—There were no relevant individual studies included in this review because radio advertising was included in the campaigns using multiple media outlets. The objectives of these studies place an emphasis on comparing or reinforcing television and/or print campaigns.^{27,28,33}

Print—Print advertisements are also most often used in combination with a mass media campaign involving television, radio, and outdoor ads. Two studies reported results related to newspaper advertising. Farrelly et al.²⁷ found that newspaper advertising may be slightly correlated with QL call volume, and Czarnecki et al.³³ found that smokers may be less likely to report print ads as their primary referral source to a QL when compared with other media (8% of smokers who were aware of a QL program learned about it from a print ad, compared with 62% from television, 19% from word of mouth, and 14% from radio).

Direct Mailings—There was only one study that looked at direct mail as a method for QL promotion.³⁶ A campaign held in New York (excluding New York City) in 2005 sent two types of postcards to 70,000 households with smokers. All postcards advertised free nicotine patches from the New York State Smokers' QL, but half of the postcards also contained negative messaging (i.e., - Need an example of what negative messaging means). Effectiveness of the campaign was evaluated by the quitline caller's zip code and self-reported referral sources. Approximately 3.7% of those exposed to this campaign had called the quitline in the 15 days post mailing. Call volume peaked 4 days after the mailing date. However, there was no significant difference in call volume between the two different postcard versions. The estimated cost per caller associated with the campaign was \$60.87.

Free Cessation Medications—Many state QLs offer free cessation medications as part of their promotional strategy. Three studies looked at the effect of free nicotine replacement therapy (NRT) on call volume and QL reach. In 2003, New York ran broadcast and print announcements in two counties for a 2-week supply of nicotine patches or gum.³⁷ Call volume was monitored in the two counties before, during, and after the promotion. The median number of QL calls went from 6 per day, to a peak of 148 per day, and decreased to 26 per day, before, during and after the promotion intervention, respectively. The second part of the study looked at two newspaper ads, one that offered a free stop smoking guide (control advertisement) and another that offered the free guide plus a free Better Quit[®] stop smoking aid (a type of cigarette substitute). The ads were run only once each, on the same day of the week and in the same section of the newspaper. In the week before the control ad ran, median calls to the QL phone service were 7 per day and they doubled to 14 per day two days after ad ran before they returned to their original level. In the 2 days after the ad offering the free substitute, the median number of calls increased to 27.5 calls per day before returning to the pre-advertisement level.

Another study published in 2006 looked at the NRT voucher promotion as well as three other free nicotine patch programs in New York State that happened concurrently in different counties.³⁸ Cummings et al. measured the call volume and reach of each promotion. In each case, average weekly call volume increased considerably as a result of the free NRT offer. The announcement for the free patches generated more than 400,000 calls to the New York State Smokers' QL within the first 3 days of the promotion, overwhelming the capacity of the QL phone service to respond to the calls. Program reach was limited by the available supply of free NRT. The 6-week nicotine patch program in New York City achieved the highest reach of 4.8% with a total program cost of \$2.7 million.

The introduction of free nicotine patches to callers who are members of participating insurance companies or employer groups and who enroll in the counseling program from the Ohio Tobacco QL also resulted in a large increase in call volume.³⁹ Call volume averaged 2,351 intake calls per month before the introduction of free NRT, and this increased to an average of 3,606 intake calls per month after free NRT was offered. In the first 10 months of the NRT program, average daily call volume increased by more than 140% compared with the 9-month period before the patches were available.

Case Studies—Case studies were classified among other literature published and available to the public during this review. However, there was very little information available. The North American Quitline Consortium²⁰ published four case studies that highlighted the QL services in Iowa, New York, Oklahoma, and South Dakota. The results were similar with previous published literature that call volumes to QL services are directly correlated with the level of advertising.

Innovative Promotion

Online—Online promotions employed by QLs include Web sites, search engine keyword ads, and banner advertisements. We found 7 articles in total that were related to online QL service promotions. However, 5 articles were not directly relevant because they were not specific to QL service promotion or recruitment and were excluded. A summary of published literature on innovative promotions, is described in Table 4⁴⁰⁻⁴⁶. One study compared traditional and online advertisements in recruiting smokers to an online only, a phone only, or a Web and phone cessation program.⁴⁰ Online advertising consisted of banner ads placed on national and local Web sites purchased on a per impression basis and paid search engine ads purchased on a per click basis. Search engine ads were elicited by certain keywords, such as “quit smoking.” Relevant ads were only displayed to search engine users in specific geographic regions. Similar ads were also run on traditional media during the same time period. All of the advertisements prompted viewers to click or visit a URL associated with Healthway's Quitnet for more information.⁴⁰ After reading a description of the programs on Healthway's website, viewers could choose one of three cessation treatment programs: (1) 24/7 online support via Quitnet, (2) telephone counseling, or (3) telephone and online support. Registration for the online Quitnet program was slightly higher among traditional media responders than among online responders.

Graham et al.⁴⁰ conducted a study as a partnership between Healthways QuitNet LLC, ClearWay Minnesota, and the New Jersey Department of Health and found that paid search advertising was the most cost-effective approach compared to the average cost of traditional media for promoting calls to quitlines (\$5 to \$8 per quitline registrant for paid search engine advertisements versus \$19 to \$500 per registrant for traditional media). Overall, online advertisements cost an average of \$36 per registrant. Because this is one of the first studies to examine innovative channels of QL promotion, there are limitations as described in Table 4.

An earlier study by Graham et al.⁴¹ examined characteristics of smokers who responded to search engine advertising for an online cessation program. Internet users who entered the terms “quit(ing)” or “stop(ing) smoking” in a search engine query (AOL^{TM*}, MSN^{TM*}, Yahoo^{TM*}, Google^{TM*}) and had no prior visit to the Quitnet (based on cookies) were interrupted by an invitation to the Quitnet Web-based program. Using the broadest population denominator, preliminary results suggest that approximately 2.7% of internet users looking for online cessation information will enroll in a research trial such as this one.

*Use of trade names is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

McDonnell et al.⁴³ focused their promotion efforts on a smoking cessation program that targeted Korean Americans in the Oakland and San Francisco areas of California. This study illustrated that online advertising can be effective in targeting a specific population; however, there are many study components that make it hard to generalize for the adult population.

A primary focus of many of the studies on innovative channels is cost-effectiveness. Milner et al.⁴⁵ presented on additional cost estimates based on advertisements for Quitnet and QL services from Colorado and New Jersey. He reported that online advertising is 5 times less expensive than traditional advertising and can be highly targeted to attract specific demographic groups.

Social Media—Evidence is lacking in the published literature to support the effectiveness of social media promotions on QL call volume. There is a limited amount of literature examining the role of social media in promoting smoking cessation in general.⁴⁶

Discussion

Over the past 40 years, media interventions to promote population-based smoking cessation have become an integral part of comprehensive tobacco control programs. Television advertisements have been one of the most commonly used and evaluated media channels within the tobacco control community.⁴⁷ Therefore, it is not surprising that a majority of relevant literature available on QL promotions has been focused on television, while research on innovative promotional strategies is limited. The relevant studies that have focused on traditional channels have reported consistent results and is also consistent with the findings of the Guide to Community Preventive Services.⁴⁸

For example, the literature shows that the level of television advertising is strongly correlated with QL call volume. Similarly, the amount of radio, print advertising, and free cessation medications also appears to be associated with QL call volume but few studies on these channels exist. Therefore, among traditional media studies, television seems to be the best predictor of QL service awareness.

Among innovative promotional strategies, there is less research that has been conducted on online promotional methods. Online ads referred a higher proportion of young adults (aged 18 to 24), men, non-whites, those with a high school degree or less, those who had not yet quit smoking, and those who smoked within 30 minutes of waking up to the quitline when compared to callers who came to the quitline through other sources.⁴⁰ Published studies have been consistent in reporting that internet advertising may be more cost-effective (cost of successfully recruiting participants to a QL service) than traditional channels. The specific estimates of cost per recruited participant range from \$2.25 to over \$35.^{40,42-45}

While there is much interest in QL promotion activities as the literature suggests, research on television advertising seems to be complete and consistent. However, the literature on the remaining traditional channels and innovative media has many gaps. This is consistent with the findings in the Community Guide Mass Reach Health Communications Interventions to promote QL use.⁴⁸ First, other traditional channels such as radio and print advertising are only studied within mass media campaigns, making their impact hard to distinguish. Second,

with innovative media, many QL services have a presence on social media sites; however, there is no published literature on how to evaluate the effectiveness of these channels. As innovative media begins to gain attention, further data and research on innovative promotional strategies will become increasingly important.

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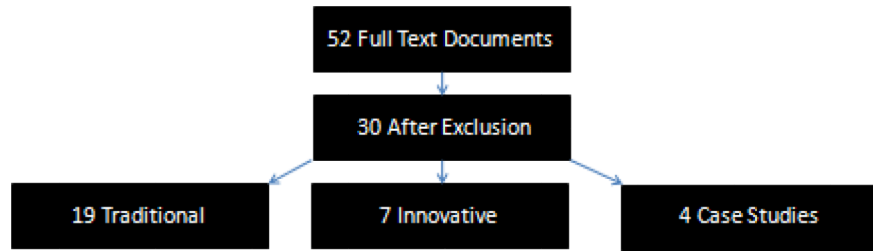


Figure 1.
Search Strategy and Exclusion Process

Table 1

Traditional Promotions Search Terms

Traditional Terms	Advertisement Terms	QL Specific
T.V.	Promotion	Quitline
Television	Ads	Cessation program
Radio	Advertise	Channels
Print	Advertisements	
Mass media	Recruitment	
NRT		

Note: NRT = nicotine replacement therapy; QL = Quitline

Table 2

Innovative Promotions Search Terms

Innovative Terms	Advertisement Terms	QL Specific
Web	Promotion	Quitline
Online	Ads	Cessation program
Internet	Advertise	
Social media	Advertisements	
Social network	Recruitment	
Facebook	Banner	
Apps	Pop up	
New		

Note: QL = Quitline

Table 3

Relevant Literature on Traditional Promotional Strategies

Study	Design	Relevant Findings	Limitations
Television Pierce, Anderson, Romano, Meissner, & Odenkirchen, 1992 ²¹	Call volume peaks of the Cancer Information Service Telephone Line were compared to television public service announcements.	In 3 months when a public service announcement ran, call volume spiked. Promotions increased the percentage of males, callers younger than age 40, and callers with a high school degree or less.	Comparisons of ad content and call volume were discredited by the ads' different airing amounts and schedule.
Mudde & DeVries, 1999 ²²	A random sample of smokers was interviewed before and 10 months after a national campaign. A control group was also interviewed for test effects.	Most smokers were aware of the campaign, but active participation rates were low. Dose-response relationship between exposure and quitting was found. Cost per long-term quit was estimated to be \$12.	The Netherlands is such a small country that national media has the potential to reach everyone, so finding a comparative control impossible; QL phone service participation was subject to self-selection bias.
Carroll & Rock, 2003 ²³	Measured the efficiency of different ads and media buy options (e.g., type of program in which ad was placed: news, comedy) in generating calls to the QL phone service.	The more graphic ad was more efficient in generating QL calls. Combining health effects ads with QL phone service ads further increased calls. Ads in programs with less viewer involvement (e.g., storyline, plot) generated fewer calls, but could actually be more efficient.	Analysis was limited by short campaign period (1.5 months). Only attributed calls to advertisements that ran within an hour of the call being received. This did not allow for the impact of multiple exposures to be assessed. Length could bias shorter programs (sitcom vs. movie).
Miller, Wakefield, & Roberts, 2003 ²⁴	Weekly TARPs were compared with QL call volume; three follow-ups were conducted to study quit rates.	Weekly call volume was strongly related to TARPs. A greater association was observed for ads specifically promoting the QL phone service.	Does not account for multiple calls; therefore, individual callers may have been counted more than once.
Wilson, Grigg, Graham, & Cameron, 2005 ²⁵	QL phone service registration by M ori (NZ indigenous population) was used to measure the effectiveness of a television campaign.	Higher rates of M ori calls to the QL service were found during intense campaign months. A M ori-focused ad generated 91 calls per 100 TARPs.	Analysis focused on a specific population group.
Erbas, Bui, Huggins, Harper, & White, 2006 ²⁶	Generalized partial linear models with a Poisson distribution were used to analyze advertising levels and QL phone service calls. Covariates included day of the week and overtime trends.	Peak calls coincided with the days of the week with more advertising. Total number of ads and TARPs were positively correlated with call volume. There were seasonal variations that were not predicted by the level of advertising.	Results supported the use of this flexible modeling strategy to examine QL phone service call volume and time trends. Further analysis might include hourly data.
Farrelly, Hussain, & Bauer, 2007 ²⁷	A linear regression of monthly total county-level calls to QL phone service was run on monthly paid television, radio, and newspaper advertisement expenditures.	Television and radio expenditures were significantly correlated with call volume, and newspaper expenditures were marginally correlated. Television expenditures produced greater call volumes than radio and newspaper expenditures.	Did not take into account ad quality, placement, or message. Ads could spill over across different media markets and would not be accounted for in the expenditures.
Mosbaek, Austin, Stark, & Lambert, 2007 ²⁸	Cost per call was calculated for daytime television, evening television, and radio, as well as for ad message.	Daytime television was 7 times more cost-effective than evening television, and more than radio placements. Real-life testimonials and ads with practical advice on how to quit were most effective in generating calls to the QL phone service.	Majority of ads ran back-to-back so it was hard to classify "delayed callers." Continuous study means that air period differed between ads.

Study	Design	Relevant Findings	Limitations
Siabpush, Wakefield, Spittal, & Durkin, 2007 ²⁸	TARPs were compared with weekly number of calls to the QL phone service for different socioeconomic groups.	Higher weekly TARPs corresponded closely to a larger volume of calls. Call rates varied by SES.	SES measures were based on callers' postcode rather than individual-level measures. Ad campaign messages may have appealed differently to different SES populations.
Cotter, Perez, Dessaux, & Bishop, 2008 ³⁰	Investigated the relationship between the television Target Audience Rating Points (TARPs) and the number of calls to the QL phone service during a mass media campaign.	Television advertising increased awareness of the QL and also led to a call response.	Only television TARPs were considered when it was a mass media campaign; spillover from other media could not be accounted for.
Bui, Huggins, Hwang, White, & Erbas, 2010 ³¹	Modeled the relationship between the number of calls to QL and TARPs for both a Quit and NRT campaign. Also examined potential day of the week effects.	The number of calls to the QL increased with the TARPs for both types of campaigns. Relationships between day of the week and call volume were independent of TARP levels.	Analysis did not take into account other public relations activities that could generate calls to the QL phone service and cause day of the week differences.
Cowling, Modayil, & Stevens, 2010 ³²	8-year study on the relationship between aided ad recall and level of television ad placement (TARPs). Both Web and phone surveys were used to interview California smokers and nonsmokers.	Log-cumulative TARPs found the strongest relationship with aided ad recall. A one-unit increase in log-cumulative TARPs led to a 7.4% overall increase in ad recall. This relationship showed diminishing returns after a large volume of ad placements.	Did not control for emotional content of ads. Television results could be affected by spillover from other markets (radio, print, billboards, and public relations activities were also part of the campaigns).
Czamecki, Vichinsky, Ellis, & Perl, 2010 ³³	A multimedia campaign for the New York Nicotine Patch Program, run in New York City. Awareness, interest, barriers, and future outreach plans were asked in an annual population-based survey.	60% of survey participants reported awareness of program. 62% heard about program from television ads, 14% from radio, and 8% from newspaper.	Response and cooperation rates for the survey were low. The measure of future outreach to the program was self-reported as an intention rather than an actual outcome indicator.
Durkin, Wakefield, & Spittal, 2011 ³⁴	Weekly advertising levels (TARPs) on QL phone service call volume were examined by type of message and SES group.	For every 100 TARPs per week, calls increased by 7%. Association between TARPs and call volume did not differ by SES. Narratives with higher levels of emotion had a greater impact on call volume.	Only included ads that evoked some type of emotional response. Study may be a saturated market, which limits generalizability of study results.
Farrelly, Davis, Nonnemaker, Kanyab, & Jackson, 2011 ³⁵	Regression analysis was used to explain variation in quarterly media market-level per smoker calls to the QL phone service. Ads were measured on TARPs and graphic and emotional content.	Per smoker call volume was positively associated with total TARPs. Cessation ads were more effective than Secondhand Smoke ads in promoting QL calls. Ads with graphic images or no graphic images or strong emotions were associated with higher call volume.	There was no information on what time of day the ads were aired. The long time span of the study did not allow local promotional activities to be included.
Direct mail	O'Connor, Carlin-Menter, Celestino, Bax, Brown, Cummings, & Bauer, 2008 ³⁶	Call volume increased by 36 percent, from 139 to 189 calls per day. There was no difference in messaging strategy and increase in call volume.	Messaging differences may have been too subtle and the offer of free NRT may have been enough to increase call volume.
NRT	Bauer, Carlin-Menter, Celestino, Hyland, & Cummings, 2006 ³⁷	Median call volume increased 25 times above pre-promotion levels with the NRT voucher offer. Newspaper promotions including an offer for a free smoking aide doubled median QL call volume over those that did not offer this aide.	New York passed the Clean Indoor Air Act (CIAA) during the time of the NRT promotion.
	Cummings, Fix, Celestino, Carlin-	Four NRT promotions were offered in New York. Call volume was tracked before, during and after the free NRT giveaway promotions.	There are better controlled, randomized trials.

Study	Design	Relevant Findings	Limitations
Menter, O'Connor, & Hyland, 2006 ³⁸			
Tinkelman, Wilson, Willett, & Sweeney, 2007 ³⁹	Significance testing was used to examine intake call volume before and after the availability of free NRT.	Call volume increased from 2351 to 3606 intake calls per month or 78 to 188 per day.	This was an observational study. Individuals were not randomly assigned, so there may be additional reasons for the increase in call volume aside from availability of free NRT.

Note: NRT = nicotine replacement therapy; QL = Quitline; TARP = target audience rating point

Table 4

Relevant Literature on Innovative Promotional Strategies

Study	Design	Relevant Findings	Limitations
Graham, Milner, Saul, & Pfaff 2008 ⁴⁰	Compared traditional and online advertisements in recruiting smokers from New Jersey and Minnesota to an online-only, a phone-only, or a Web and phone cessation program	130,214 unique identifiers were created on the Quitnet server, with 18.4% from traditional media responders and 81.6% from online ad clicks. Of the online clicks, 6.8% selected the Web-based program only, 1.1% chose phone counseling only, and 1.25% selected the combination of Web and phone services	Study relied on cookies to track Web site utilization among registered users of the program. Regularly deleted cookies would not be recognized as a return user and could be counted more than once. For campaigns featuring the same ad scheme, it is hard to measure spillover effects between different types of media
Graham et al. (2006) ⁴¹	Examined characteristics of smokers who responded to search engine advertising for an online cessation program	28,297 individuals were invited, with 39.4% acceptance of invitation, 19.6% were eligible, and 12.8% participated. Of the original number invited, 47.1% were referred through Google, 32.8% through Yahoo, 17.6% through MSN, and 2.6% through AOL. The majority of study participants were female (60.5%), white (86.4%), and college educated (48.4%)	The advertising was only designed to promote a Web cessation program, and search engine ads target users who are presumably already interested in and taking steps toward quitting
Gordon, Akers, Severson, Danaher, & Boles, 2006 ⁴²	Examined comprehensive recruitment strategies to an online cessation program for smokeless tobacco users	The majority of participants reported learning about the study from newspaper articles (33%) and online sources, such as Google ads and other Web sites (34%). Participants also self-reported the following referral sources: radio interviews (10.8%), word of mouth (7.8%), television stories (5.5%), and direct mail (1.4%). The total cost per participant of the Google campaign was \$6.70, \$36 for direct mail, \$92 for media campaigns, and \$115 for newspaper ads.	Only targeted smokeless tobacco users, a much smaller proportion of the population than cigarette smokers, and the media campaign and budget was very limited.
McDonnell, Lee, Kazinets, Moskowitz, 2011 ⁴³	Examined promotion efforts of a smoking cessation program that targeted Korean Americans in the Oakland and San Francisco areas of California.	44% found the study through a text link (most likely Google AdWords), 35% through a graphic link (online newspaper ads), and 10% reported hearing about the program through multiple channels. Overall cost per participant was \$66.50, with Google ads being the most cost-effective (number not reported).	Because the study was trying to meet a certain participant quota, additional campaign media were constantly being added to try to recruit additional participants. Salient channels to the Korean American community were chosen; therefore, the results may not be representative of the general population.
Houston & Ford, 2008 ⁴⁴	Evaluated an Internet-delivered intervention for smoking cessation	The cost per click for study recruitment was \$0.47, and for every 4.8 users that clicked through to the site, one was recruited. The cost per participant was \$2.25. Most users of the online program were younger than age 45 years, white, and from urban counties.	The study focused on program effectiveness rather than the recruitment strategies implemented
Milner, Long, & Kazimir, 2005 ⁴⁵	Evaluated cost effectiveness and provided a descriptive analysis of audience targeting of online advertising to promote cessation in Colorado and New Jersey.	Online advertising was 5 times less expensive.	Although results were presented on registrants and ad concept testing, study was mainly focused on cost effectiveness and costs per enrollee.
Backinger, Pilsner, Augustson, Frydl, Phillips, Rowden, 2010 ⁴⁶	Conducted a content analysis of smoking cessation videos on YouTube to look for quit smoking messaging using evidence-based practices.	42% of the most viewed (determined by video views) quit smoking videos contained evidence based practices.	Search strategies based on the terms 'quit smoking' may have limited search results.