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Integrative tobacco cessation: A survey assessing past quit strategies and future interest

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Abstract

Purpose—Tobacco cessation remains a public health priority. Unassisted quits are most common despite evidence for a combination of guideline-recommended strategies. This paper reports findings from a pilot study designed to assess past quit strategies and tobacco users' receptiveness to using an integrative clinic that offers both conventional and alternative treatments for future cessation attempts.

Methods—Participants were recruited from a pool of individuals reporting for jury duty. Paper-pencil surveys assessed smoking, past cessation behaviors, and interest in use of the integrative clinic which offers both conventional and alternative treatments. Current and former smokers (n=304) returned surveys.

Results—Using multivariate logistic regression, past physiological quit strategies, past behavioral quit strategies, and use of multiple quit strategies increased agreement with interest in future use of an integrative clinic option. Additionally, there is support for the notion that if such a clinic were offered, smokers may be inclined to use this resource for a future quit attempt.

Conclusions—An integrative clinic option for tobacco cessation may encourage smokers to try to quit, especially for those who have used varied cessation strategies in the past. Motivating smokers to use a combined approach for tobacco cessation is a potential future direction for tobacco cessation treatment. Developing and testing an integrative approach may support this effort.

Keywords

smoking cessation; integrative medicine; behavior change; tobacco control

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Introduction

Smoking cessation approaches such as pharmacotherapy, structured behavioral intervention, self-help resources, quitlines, and complementary and alternative medicine (CAM) approaches have increased in variety and availability since bupropion was first released in the US in 2000 (1). Accessibility and cost of treatment options vary by state, however, free telephone quitlines are available in each state (2), and an increasing number of tobacco cessation services are covered by private, state, and federal insurance providers for free or at a lower cost following the inception of the 2010 Affordable Care Act (ACA)(3). The Centers for Disease Control and Prevention (CDC) reports approximately 20% of the population continues to smoke (4) and there are approximately 400,000 smoking-related deaths each year (4). Prevalence of smoking is higher in men (21.5%) than women (17.3%), and adults aged 25-44 years have the highest prevalence of smoking among age groups (5). Large disparities in tobacco use remain across groups defined by race and ethnicity, educational level, socioeconomic status and across regions of the country. Among racial/ethnic populations, non-Hispanic American Indians/Alaska Natives had the highest prevalence (31.4%), followed by non-Hispanic whites (21.0%) and non-Hispanic blacks (20.6%) (5). Smoking prevalence generally decreased with increasing education and was higher among adults living below the poverty level (28.9%) than among those at or above the poverty level (18.3%) (5).

Most smokers (70%) report a desire to quit (6), however, only 40% report a 24-hour quit attempt per year (6, 7). Annually, approximately 2-3% of smokers quit successfully, but for those who relapse, almost two-thirds want to try quitting again within 30 days (1). Despite the increased availability of free or low cost therapies, usage rates are low and relapse rates are high. Hughes, Keely & Naud (8) report 72% of quit attempts do not use treatment-based approaches, and unassisted quitters typically relapse within 8 days. In the US, a mere 16% of smokers who tried to quit in the past year used cessation medication (9).

The U.S. Public Health Service (PHS) evidence-based practice guidelines for tobacco cessation (1) are periodically updated to maximize clinician delivered intervention efforts. The evidence to date indicates quit attempts increase with practitioner and health provider contacts (1), and a review of 41 studies indicates that abstinence is best achieved with the combined use of pharmacotherapy (e.g. nicotine replacement therapy, bupropion, varenicline) along with 4-8 weeks of behavioral intervention (10). Transitioning smokers who typically choose unassisted quits, or a “cold-turkey” strategy, towards quitting using combined evidence-based treatment approach remains a challenge (1, 9).

Currently, it is unclear how often single quit strategies or combinations of strategies are used during quit attempts (11), and whether CAM is or is not included along with conventional cessation approaches. CAM treatments for smoking cessation have been investigated with mixed results (12, 13), however, there is very little information about whether or not adjuvant use (e.g. massage for stress relaxation) is used during a quit attempt. Quit attempt history-taking in research studies typically queries how many, if any, quit attempts were made in the past year or more, but we have not uncovered any literature describing whether or how often tobacco users change strategies from one quit attempt to the next.

Given the evidence that combined treatment strategies are the most promising for prolonged tobacco cessation, there is a need to deliver integrated, individualized treatment options. Within a clinical setting, physicians are trained to deliver brief interventions (e.g., 5 A's) to smokers within their practice. Integrative clinics could provide cessation and relapse prevention services, combining conventional medical and behavioral options, and potentially include supportive CAM options, such as massage for stress-reduction. Prior to launching these enterprises, it is important to assess how receptive tobacco users' will be to an integrative tobacco cessation approach, what factors are related to their interest, and determine whether this opportunity might increase motivation for a quit attempt in current smokers. The purpose of this pilot study was to assess past tobacco cessation strategies and interest in utilizing an integrative tobacco cessation clinic in a sample of current smokers.

Method

Participants

Adults selected for jury duty in a southwestern county in Arizona during a one-month period in 2006 were eligible and thus recruited for the study. Study staff attended several morning and afternoon jury calls over the course of several days. Participants were asked to complete a one-page survey (paper-pencil) asking about past smoking behavior, cessation attempts, and attitudes toward future treatment options. They filled out and returned the survey while in the main waiting area of the jury pool reporting room. The survey took approximately 5 minutes to complete, however due to court activity, some people could not return the survey before they were called to service. Data was entered by study staff at the end of data collection. The study was approved by the University of Arizona Institutional Review Board as an anonymous survey. A total of 423 people returned the survey to research staff. Each session had an average response rate of 33% per court session, with sessions ranging from 10-73% completion.

Measures

Demographics (age, education, gender, race), current smoking status and quit attempts in the past year were self-reported. Participants were asked to indicate if they previously used 28 specific strategies to quit or cut down on smoking in the past, and whether or not they agreed or disagreed with four questions regarding an integrative clinic that used "both conventional and alternative/complementary quit smoking treatments". The questions asked if an integrative clinic were available, would they be "more likely to quit", "would choose that type of clinic", and if their "use would depend on cost". Participants indicated if they strongly disagreed, disagreed, agreed, or strongly agreed with each statement.

Past quit strategies were divided into five pre-determined categories: physiological, behavioral, CAM, multiple strategies, and no strategy. Participants could also select they quit or cut down 'on their own' and not endorse any of the listed strategies. Physiological strategies included aversion therapy, bupropion, and nicotine gum, inhaler, lozenge, nasal spray and patches. The data collection was conducted prior to FDA approval of varenicline for smoking cessation. Behavior focused strategies included cessation counseling, stop smoking classes, telephone quitlines and other self-help materials including stop smoking

web sites. CAM strategies included acupuncture, Ayurveda, biofeedback, chelation, chiropractic, dietary supplements, energy healing, folk medicine, herbs, homeopathy, hypnosis, massage, meditation, naturopathy, and yoga. 'Multiple strategies' indicates if a participant listed two or more of the above categories. The 'no strategy' category indicates the participant selected none of the 28 treatments to quit or cut down in the past. In total, six categories were analyzed: on their own (only), physiological, behavioral, CAM, multiple strategies, and no strategy. Categories are not mutually exclusive, thus each was analyzed separately.

Analysis

Data were summarized and comparisons between current and former smokers were made using appropriate Chi-square and t-tests. Multivariate logistic regression models using Stata 12.1 (StataCorp; College Station, TX) were used to determine the characteristics associated with interest in trying an integrative treatment approach in the future for tobacco cessation. The three integrative clinic questions (likely to quit smoking, choose that kind of clinic, use would depend on cost) served as the dependent variables. Responses were converted to a binary format (agree/disagree) from the 4-point scale to use in the logistic regression, enabling us to compare answers from those who agree with the statement, to those who disagree with the statement (referent group). Demographic variables (age, gender, race, education), type of smoker (current or former), and previous cessation strategies were included in the model. Of the demographic variables, age was continuous, gender was coded "1" for male and "0" for female, race was coded "1" for Caucasian and "0" for other race and ethnicity, and education is coded "1" if participants report attending at least some college and "0" for a high school education or less.

Results

A total of 423 people responded (28% current smokers, 44% former smokers, 28% never used tobacco). Only those who indicated they were current or former smokers were included in the analysis. The logistic regression analyses about future quit attempts and use of integrative clinics only included current smokers (n=117). Approximately half (51%, n= 60) of current smokers have made a quit attempt in the past year.

Table 1 displays comparisons between current and former smokers who returned surveys. Overall, this sample of current smokers were more likely to be younger, and have a high school degree or less. Fifty-six percent of the current smokers reported at least one quit attempt in the last year. There were no differences in the proportion of Caucasian, Hispanic or other race between current and former smokers.

There were other differences between groups. CAM strategies were more likely to be reported by females (76%; $\chi^2= 6.8$, $p<.01$), choosing to quit 'on their own' was more likely to be reported by those with at least some college (57%; $\chi^2= 4.4$, $p<.01$), and those who chose no strategy were younger on average (44.8 years, $sd=14.5$ vs. 48.9 years, $sd=14.6$; $t=2.16$, $p<.01$).

Participants who had used physiological, behavioral, on their own, or multiple strategies were more likely to agree to the question, “Would you be more likely to quit smoking if an integrative clinic were available?” suggesting that this type of clinic would be desirable to smokers who have tried to quit in the past (Table 2). Those who reported prior use of physiological and multiple strategies were more likely (OR: 5.9 [1.7–20.1] and OR: 4.0 [1.1 – 14.9] respectively) to agree with the statement that they would choose an integrative clinic in the future to aid quit attempts. Only those who reported using a physiological strategy in the past were more likely to agree with the statement that use of an integrative clinic would depend on cost (OR: 5.6 [1.4 – 21.8]).

Discussion

These findings support the notion that there is interest among smokers in using an integrative clinic for tobacco cessation, and that if such a clinic were offered smokers may be more likely to use this resource for a quit attempt, especially those who have reported use of varied strategies for cessation in the past. Our results demonstrate that current and former smokers choose multiple domains of strategies for quit attempts (27% physiological, 14% behavioral, 10% CAM, 51% on their own) and that there is interest in future use of an integrative tobacco cessation clinic, particularly by those who reported use of physiological, behavioral, or multiple strategies. In this community sample, age, gender, and race were not consistently associated with future interest in an integrative clinic option, nor with increased likelihood of quitting. Having at least some college education was significant in several models related to future interest in an integrative clinic option, which is consistent with previous findings that having higher education is associated with future use of integrative and/or CAM treatments (14).

The findings provide novel information regarding assisted quit strategies used by tobacco users. Although 64 participants (21%) reported use of multiple strategies in the past, only 9% of the total sample (11 former, 15 current smokers) reported using both physiological and behavioral strategies, a combination indicated to be the most effective, and 4% of the total sample (6 former, 6 current) reported using all three physiological, behavioral, and CAM strategies. This observation supports earlier findings that less than 5% of smokers use combined approaches to assist them during quit attempts (9). Additionally, 41% of current smokers did not list any strategy for cessation. Of these 48 smokers, only half actually reported a quit attempt in the past year so it is reasonable to assume they would not use any strategies if they are not attempting to quit.

The present study has several limitations. First, the study was performed prior to varenicline, e-cigarettes and smokeless snus being available in the US, thus these strategies were not listed on the survey. Second, data were collected from a convenience sample in an Arizona county. Although, jury pools are random sampling of voters in that community, results may not be generalizable to the community, smokers in general, or on a national level. Third, we do not know which strategies in the pilot survey were used concurrently, or whether multiple quit attempts were made with single strategies among different domains. There is the possibility that current smokers may repetitively choose the same strategy (or strategy domain) over the course of multiple quit attempts (e.g., use patches then switch to

medication on another attempt – both physiological strategies), however this study was unable to detect transitions since a quit attempt timeline was not requested. Future studies could help understand transitions between strategies chosen for quit attempts and if flexibility increases the likelihood of a quit attempt being successful.

Integrative approaches to tobacco cessation, including use of over-the-counter and prescription pharmacotherapy, counseling services, and adjuvant CAM treatments are limited or non-existent. A significant number of smokers report general use of CAM therapies (15) and Sood et. al (14) reported 67% of participants in an outpatient tobacco cessation clinic were interested in future use of CAM for tobacco cessation, with greatest interest in hypnosis, herbal products, acupuncture, relaxation, and massage therapy. In summary, the present study shows interest among current smokers for the future use of an integrative approach to tobacco cessation, and forecasts potential for recruiting participants who have used multiple domains of strategies for quit attempts in the past to research integrative tobacco cessation options. Investigating how an integrative approach fits into tobacco cessation treatment can provide an important contribution to public health policy and practice approaches, especially since the 2010 ACA expands access to smoking cessation services and now requires most insurance companies to cover cessation treatments (16). Additional studies are required to assess how to motivate smokers to use effective combined approaches for tobacco cessation and to investigate the feasibility and potential efficacy of using CAM - to reduce symptoms such as stress, anxiety or pain - as an adjuvant therapy to conventional cessation therapies.

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What is already known about the topic?

- Tobacco cessation remains a public health priority.
- Despite an increase in available treatment options, most tobacco quit attempts are unassisted.
- Combinations of tobacco cessation treatments, including complementary and alternative approaches, are understudied

What this paper adds?

- Tobacco users have used a variety of options for past quit attempts.
- Integrative treatment options may encourage tobacco users to seek quit assistance.

Table 1

Demographics and past quit strategies of current and former smokers.

	All	Current Smoker	Former Smoker	Comparison test of current versus former smokers
N		117	187	
Age (years)	48	41	51	t=5.8, p<.01
% Female	52%	48%	56%	$\chi^2=1.6$, p=0.21
Education				
No College	49%	60%	42%	$\chi^2=8.6$, p<.01
College	51%	40%	58%	
Race/Ethnicity				
Caucasian	82%	82%	82%	$\chi^2=0.88$, p=0.97
Hispanic	9%	10%	9%	
Other	9%	8%	9%	
Quit attempt in past year		52%	9%	$\chi^2=187$, p<.001
Past Quit Strategy				
Physiological (n=81)	26%	36%	21%	$\chi^2=8.3$, p<.01
Behavioral (n=42)	14%	17%	12%	$\chi^2=1.71$, p=0.19
CAM (n=29)	10%	11%	9%	$\chi^2=0.54$, p=0.46
On their own (n=154)	51%	39%	58%	$\chi^2=11.32$, p<.001
Multiple (n=64)	21%	28%	17%	$\chi^2=9.1$, p<.01
'On their own' exclusively (n=104)	34%	17%	45%	$\chi^2=24.8$, p<.001
No Strategy Reported (n=96)	32%	41%	26%	$\chi^2=7.9$, p<.01

Table 2

Current smoker's interest in and likelihood of using an integrative tobacco cessation clinic, results from multivariate logistic regression.

	More Likely to try to Quit	Choose that kind of clinic	My use would depend on cost
Variables	Odds ratio (95% Confidence Interval)		
Physiological Strategy	4.6 (1.6 – 13.4) **	5.9 (1.7–20.1) **	5.6 (1.4 – 21.8) *
Age	1.0 (1.0 – 1.1)	1.0 (1.0 – 1.1)	1.0 (1.0 – 1.1)
Gender	0.9 (0.4 – 2.4)	0.9 (0.3 – 2.6)	0.6 (0.2 – 1.8)
Race	1.9 (0.5 – 6.8)	1.3 (0.3 – 5.1)	1.5 (0.4 – 6.0)
Education	1.3 (0.5 – 3.4)	2.8 (0.9 – 8.3)	1.1 (0.4 – 3.4)
Behavioral Strategy	4.5 (1.1 – 17.9) *	2.7 (0.6 – 11.1)	2.6 (0.5 – 13.0)
Age	1.0 (1.0 – 1.1)	1.0 (0.9 – 1.1)	1.0 (1.0 – 1.1)
Gender	1.0 (0.4 – 2.5)	0.9 (0.3 – 2.5)	0.7 (0.2 – 1.9)
Race	2.3 (0.7 – 8.1)	1.7 (0.4 – 6.7)	2.1 (0.6 – 7.9)
Education	1.7 (0.6 – 4.3)	3.3 (1.1 – 9.7) *	1.4 (0.5 – 4.1)
CAM Strategy	2.3 (0.5 – 10.7)	2.0 (0.4 – 9.7)	1.4 (0.2 – 8.5)
Age	1.0 (1.0 – 1.1)	1.0 (0.9 – 1.1)	1.0 (1.0 – 1.1)
Gender	1.21 (0.4 – 2.8)	1.0 (0.4 – 3.0)	0.7 (0.2 – 2.1)
Race	2.6 (0.8 – 8.9)	0.9 (0.5 – 1.5)	2.2 (0.6 – 8.2)
Education	1.6 (0.6 – 4.2)	3.1 (1.1 – 9.2) *	1.4 (0.5 – 4.1)
On Their Own	2.9 (1.1 – 8.0) *	1.3 (0.5 – 3.6)	0.5 (0.2 – 1.4)
Age	1.0 (1.0 – 1.1) *	1.0 (1.0 – 1.1)	1.0 (1.0 – 1.1)
Gender	0.9 (0.4 – 2.2)	0.8 (0.3 – 2.3)	0.6 (0.2 – 1.8)
Race	2.8 (0.8 – 9.7)	1.9 (0.5 – 7.3)	2.4 (0.6 – 9.1)
Education	1.4 (0.6 – 3.7)	3.0 (1.1 – 8.7) *	1.5 (0.5 – 4.4)
Multiple Strategies	8.6 (2.2 – 34.6) **	4.0 (1.1 – 14.9) *	2.0 (0.5 – 7.0)
Age	1.0 (1.0 – 1.1)	1.0 (1.0 – 1.1)	1.0 (1.0 – 1.1)
Gender	1.3 (0.5 – 3.4)	1.2 (0.4 – 3.3)	0.7 (0.3 – 2.0)
Race	1.9 (0.6 – 6.8)	1.4 (0.4 – 5.6)	2.0 (0.5 – 7.4)
Education	1.6 (0.6 – 4.5)	3.3 (1.1 – 9.9) *	1.4 (0.5 – 4.0)

*
p < .05

**
p < .01