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Interest in Treatments to Stop Smoking

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Abstract

We surveyed 884 VT tobacco smokers by random digit dialing to determine past and future use of treatment. Among those who had recently attempted to quit, 61% had ever used a treatment; 21% had ever used a psychosocial treatment and 57% a medication. Among those who planned to quit in the next month, 68% stated they would use a treatment, 35% would use a psychosocial treatment and 62% a medication. The major predictors of past or future use of treatment were greater cigs/day, older age, being a woman, and seeing a health professional. Although this survey suggests many smokers have used or plan to use a smoking cessation treatment; program data indicate <10% of VT smokers who try to quit use the state quitline, counseling or free medication provision. Why smokers do not use these treatments needs to be determined.

Keywords

consumer; nicotine; smoking; smoking cessation; tobacco; treatment

1. Introduction

In the US, about 40% of smokers try to quit each year (Center for Disease Control and Prevention, 2004). In the past, almost all smokers who tried to quit did not use a smoking cessation treatment. For example, in 1986 when the only treatments widely available were nicotine gum and intermittent group programs, over 95% of quit attempts did not use any treatment (Fiore et al., 1990). In the 1990s, over-the-counter (OTC) nicotine replacement therapy (NRT) (Shiffman & Sweeney, 2007) and telephone quit-lines (www.naquitline.org) became widely available in the US. Several national and state surveys have estimated the use of these treatments (Tables 1a and 1b; see appendix). The prevalence of treatment use in these surveys varies, in large part, because the definitions of the numerator and the denominator vary across surveys. The numerators most often used were “ever used a treatment”, “used a treatment in the last year”, or “used a treatment during the last quit attempt”. The denominators most often used were “all current smokers”, “those who smoked a year ago”, “those who smoked a year ago and attempted to quit in the last year”, or “current smokers who attempted to quit in the last year”. Even so, across denominators, typically 20–40% had ever used one or more NRTs but less than 10% had ever used a psychosocial treatment; i.e. telephone, individual or

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group counseling – not including brief clinician counseling or written materials (Tables 1a and 1b). Corresponding rates for use on a recent quit attempt were < 5% for psychosocial treatments and 10-37% for the more popular NRTs (Tables 1a and 1b; see appendix for references).

Lack of awareness and costs are thought to be major external barriers to use of smoking cessation treatments (Kaper, Wagena, Severens, & Van Schayck, 2005), yet how many smokers are unaware of quitlines, medication, etc is unclear. In terms of cost, in most states, treatments for smoking have to be purchased by smokers with their own funds.(McPhillips-Tangum, Bocchino, Carreon, Erceg, & Rehm, 2004). Other reasons cited by smokers included disbelief of efficacy, the belief that one does not need treatment to stop, stigma attached to treatment seeking, and misunderstanding of how treatments work (Hammond, McDonald, Fong, & Borland, 2004; Bansal, Cummings, Hyland, & Giovino, 2004; Van Der Rijt & Westerik, 2004). A common specific reason for not using psychosocial treatments is transportation problems(Hines, 1996). A common specific reason for not using medication is fear of adverse events including dependency(Bansal et al., 2004).

In past studies, those who use psychosocial or medication treatments have been older, more dependent smokers than those who did not, women were more likely to use psychosocial treatments but were not more likely to use medications. Surprisingly, smokers with lower education or of non-Caucasian ethnicity were not reliably less likely to use treatment. (Cokkinides, Ward, Jemel, & Thun, 2005)

We report a secondary data analysis of the 2004 VT Adult Tobacco Survey (ATS) to examine the lifetime prevalence of use of treatments. This analysis adds to the literature because it reports on each specific treatment plus reports on intentions about future use. In addition, VT provides free or discounted access to several treatment modalities (see below) and thus, this survey provides a test of treatment use in a more optimal setting. We also report program data from the Vermont Tobacco Control Program (<http://healthvermont.gov/prevent/tobacco/index.aspx>) to examine use of its free cessation services.

2. Methods

The VT Dept of Health has conducted the VT ATS annually since 2001. The 2004 ATS was a random-digit dial survey of VT adults conducted during a 60 day period in the fall of each year. The survey randomly selected a member of each household until it meets the following recruitment goals: a) 1000 never-smokers (not smoked 100 cigs in their lifetime) or long-term former smokers (> 5 yrs abstinent), b) 1000 current smokers (currently smoke every day or some days) or recent quitters (stopped smoking in the last 5 yrs) and c) 18-24 yr olds are represented at a rate similar to expected in the population. The survey did not include adults who were in institutions, did not have a telephone or did not speak English. The survey included about 30 questions on smoking cessation and treatment use. These questions were only asked of current smokers who had tried to quit in the last year; i.e., current smokers who had not tried to quit recently and former smokers, including recent quitters were not asked these questions. The overall response rate for the random digit dialing was 35% of households with eligible respondents when the US Center for Disease Control guidelines for surveys that screen for specific groups (www.cdc.gov/nis/pdfs/estimation_weighting/EZZati1999.pdf) was used. Among households reached with an eligible potential participant, the response rate was 59%. When we weighted the data to reflect the demographics of Vermonters, the prevalence rates of outcomes varied by < 5% and, thus, for simplicity, we report unweighted data.

Beginning in 2001 free phone counseling and free in-person individual and group counseling via local hospitals were available via the VT Tobacco Control Program funded by Master

Settlement Funds. (www.ahs.state.vt.us/tobaccoboard/RFPs/workplan0405.pdf). Beginning in 2002, nicotine gum, patch and lozenge were available free to uninsured or Medicare smokers. Patients with Medicaid and a physician's prescription could get these medications with either a small co-pay of \$2-\$5 or by enrolling in a counseling service. Other smokers could obtain these NRT at < 60% of cost via a voucher program that required at least one call to the quitline or contact with a counselor. Cessation programs and the availability of medications were advertised via print, radio, television and direct-to-consumer mailings. At the time of the 2004 ATS, the state did not sponsor its own internet cessation site and the ATS did not query about use of the internet. This array of free or discounted smoking cessation services is unusual (www.tobaccofreekids.org/reports/settlements) and allows testing use of treatment under more optimal conditions. The Vermont Tobacco Evaluation and Review Board provides a yearly report about use of the above program services (www.ahs.state.vt.us/tobaccoboard) and these results are also cited herein.

3. Results

3.1. Sample Characteristics

Among the 2000 participants, 884 were current smokers. Their mean age was 44.2 (sd = 14.4), 64% were women, 93% were non-Hispanic Caucasians, 91% had completed high school and 8% were unemployed. Their mean cigs/day was 15 (sd = 9.9); 19% were non-daily smokers, 57% smoked within 30 min of awakening. These results are similar to population estimates for VT smokers from the Behavioral Risk Factor Survey (www.2.cdc.gov/nccdphp/brfss2/publications/index.asp). As a result, the observed rates of treatment use differed from results weighted to reflect the VT population by less than 4%. We therefore report actual rather than weighted results

In the year prior to the survey, 43% (n = 380) of current smokers had attempted to quit. Among these, 41% tried to quit once, 32% twice and 27% three or more times in the last year. The longest quit attempt in the last year lasted only one day or less in 12% of attempters and 1 wk or less in 48%.

3.2. Prior Quit Attempts

Only current smokers who had tried to quit in the last year were asked questions about prior quit attempts. Almost all attempters (95%) cited a health problem or pregnancy as a reason they tried to quit; 66% cited the cost of cigarettes, 63% cited the advice of others, and 51% cited physician advice. Among smokers who had children, 79% cited concern for their children.

Further questions about quitting were asked about all prior quit attempts. Over half of quit attempters had, in their lifetime, obtained information about treatment from a health care professional or organization (57%) or from media outlets (56%), or from a friend or relative (53%). About a third (37%) had read written material. Few reported obtaining information from a quitline (10%) or a workplace (12%).

Overall, 61% had ever used a formal treatment. Over half (57%) had used a medication: 52% had used an NRT and 24% had used bupropion (nicotine microtabs and varenicline were not available in the US at the time of this survey). One-fifth (21%) had used a psychosocial treatment (i.e., quitline, group or individual counseling –not including brief advice from a health professional or reading written materials or internet access); 12% had called a quit line; 8% attended a group or class and 9% attended individual counseling. Among those who had used a psychosocial treatment, 82% had used a medication; among those who had used a medication, 30% had used a psychosocial treatment.

Those who were aware of a treatment but did not use a treatment in prior attempts were asked why they did not. Cost and disbelief in efficacy were cited by approximately 1/5th to 1/3rd of smokers for all treatments, except for quitlines (Table 2). Specific reasons for not attending a group were time of day (61%), distance (36%); child care (18%) and transportation (12%). Specific reasons for not using medications were fear of side-effects (33-58% depending on medication); fear of addiction was less common (13-27%).

We conducted logistic regressions in the group of quit attempters predicting use of a psychosocial treatment or use of a medication and entered the following predictors: age, sex, completed high school, cigs/day, time-to-first cigarette, longest time quit in past, attempted to quit due to health problem or pregnancy, attempted to quit due to social reason and whether they had seen a MD in the last year. In a multivariate regression, being a woman ($p=.005$, $OR=2.4$) and having a shorter time to the first cigarette predicted the use of a psychosocial treatment ($p=.005$, 38 vs. 68 min in users vs. nonusers). Being older ($p=.02$, 45.3 vs. 40.8 yrs in users vs. nonusers), smoking more cigs/day ($p=.03$, 15 vs. 12 in users vs. non-users) and having seen a health professional predicted the use of a medication ($p=.007$, $OR=2.2$).

3.3. Future Quit Attempts

To assess future intentions to use treatment, smokers who stated they planned to quit in the next month ($n=259$, 29% of all current smokers) were asked “if you decide to quit....what methods would you use”. Of these, 177 (68%) would use either a psychosocial or medication treatment. About a third (35%) would use a psychosocial therapy; 27% would use the quit-line, 13% a group class, and 13% individual counseling. About two-thirds (62%) would use a medication; 57% would use an OTC NRT; 42% the patch, 22% gum and 22% lozenge. Only 16% would use prescription inhaler and 8% prescription nasal spray; about one-fourth (24%) would use prescription bupropion. The most common combination of medications was bupropion plus a NRT (19%) and patch plus another NRT (5%). Among all smokers, 5% would use only a psychosocial treatment, 31% would use only a medication and 29% would use both. Put another way, among those who planned to use counseling, 82% planned to use medications; among those who would use medications, 47% would use counseling.

We conducted logistic regressions to examine predictors of whether a smoker planning to quit would use psychosocial treatment or medication and entered the same predictors as above. Having less education predicted intended use of a psychosocial treatment ($p<.05$, $OR=2.3$). Greater cigs/day predicted intended use of a medication ($p=.02$, 14.4 vs. 11.4 for intenders vs. non-intenders).

3.4 Program Use

In the 2004 ATS, almost all (82%) current smokers were aware that assistance to stop smoking was available from the State of VT. Depending on treatment, 66-79% of VT smokers said access to psychosocial or medication treatments was “somewhat easy” or “very easy”. Despite this, both the 2004 ATS and program data

(
<http://humanservices.vermont.gov/boards-committees/tobaccoboard/TERB%20AR2007%20FINAL.pdf/view>
) indicate that less than 10% of all Vermonters who had tried to quit used either the quitline, free counseling or free medication.

4. Discussion

4.1. Summary/Interpretation of Findings

One of our major findings was that, among smokers who had tried to quit, half had ever used a medication and one-fifth had ever used a formal psychosocial treatment. Our rates of ever-

use of treatment are higher than comparable studies (Table 2). Although this could be due to greater tobacco control activity in VT and easier access to treatment in VT than in most states, (http://www.cdc.gov/tobacco/data_statistics/state_data/data_highlights/2006/) , another possibility is that most prior study surveys were completed in 1998-2001 and ours was completed in 2004; thus, our greater use rates may be because treatment use is increasing over time. We know of no direct tests of this.

The prevalence of intention to use treatment on the next quit attempt was even higher: two-thirds would use a medication and a third would to use a formal psychosocial treatment. We are unaware of prior surveys of intentions to use smoking cessation treatments. These higher rate of intention to use treatment than of prior use suggests only a subset of those with plans to use a treatment will do so. In addition, our program data suggest very few smokers use the free or almost-free state services. Thus, although these high intention-to-use rates do suggest many smokers believe psychosocial and medication treatments are worth considering, something appears to be preventing them from accessing treatment. One possible reason for low use is that many quit attempts appear to occur suddenly. For example, in about half of quit attempts, smokers were not planning on quitting the day before they quit. (Larabie, 2005; West & Sohal, 2006) Other reasons cited by smokers included disbelief of efficacy, the belief that one does not need treatment to stop, stigma attached to treatment seeking, and misunderstanding of how treatments work (Hammond et al., 2004; Bansal et al., 2004; Van Der Rijt et al., 2004)

Being older, a woman and a heavier smoker usually predicted past use or plans to use treatment. This result is quite consistent with the prior literature (Cokkinides et al., 2005). Similarly, studies have also found that treatment users scored higher on dependence scales (Shiffman, Di Marino, & Sweeney, 2005). These differences in treatment users vs. non-users are important because they suggest the common exercise of comparing quit rates in treatment users vs. non-users among all smokers may produce incorrect conclusions if it does not adequately correct for such a priori differences in users vs. non-users (Shiffman et al., 2005).

4.2. Comparison with results for other drug dependencies

The formats for the treatment for alcohol/illicit drug disorders and tobacco smoking differ so much it is difficult to compare their use rates between them. Most of the treatment of smoking is via OTC medications and phone therapy (see above). There are no proven OTC medications for alcohol/illicit drugs and most alcohol/drug abuse phone-lines do not treat but refer those with problems. (Hughes, Riggs, & Carpenter, 2001) Conversely, self-help is the major mode of treatment for alcohol/drug problems (Cohen, Feinn, Arias, & Kranzler, 2007) but is very rarely used for smoking. (Lichtenstein, 1999). Perhaps the fairest comparison is one comparing use of formal psychosocial treatments provided by a clinician. In our survey, 21% of smokers who had tried to quit had called or seen a counselor/therapist in their lifetime for smoking cessation. In perhaps the best recent estimates, 12%-45% of those with lifetime alcohol dependence had seen a counselor/therapist for alcohol problems (Kessler et al., 1999; Cohen et al., 2007) and, in one study, about 22% of those with illegal drug use had. (Kessler et al., 1999) Among the many individual studies on why alcohol/illegal drug abusers do not seek alcohol/drug treatment, with a few exceptions (Tucker & Gladsjo, 1993; Cohen et al., 2007), these studies do not make distinctions among internal barriers to deciding to quit, internal barriers to seeking treatment, and internal barriers to being able to quit; i.e., many studies appeared to assume that the decision to stop drug use and the decision to seek treatment and the ability to quit were controlled by the same attitudes and beliefs. Thus, it was unclear from this literature whether the barriers reported were the barriers we are interested in; i.e., the specific barriers influencing treatment seeking once a decision to quit had been made. Some of the internal barriers reported in these studies are specific to alcohol and illicit drug

treatments; e.g. disagreements with tenets of treatment (religiosity in AA treatments). (Klingemann et al., 2001) However, others are likely to also operate in treatment seeking for nicotine dependence; e.g., not wanting to admit loss of control, belief that one can stop without needing treatment (aka denial of addiction), detoxification (i.e., withdrawal) phobia, embarrassment, stigma, and no social validation of treatment.(Hall, 1984; Cohen et al., 2007)

4.3 Assets and Liabilities of the Survey

The major methodological assets to our study were the use of a random-digit dial survey, a relatively large sample size, and inclusion of questions specifically about reasons for not using treatment. Although, our results might represent what would happen in the rest of the US if smokers had few barriers to treatments, our study has several methodological problems that may limit its generalizability; e.g. VT has few minorities. In addition, the 2004 date of the survey may be problematic as secular trends in smoking are occurring(National Cancer Institute, 2003) and treatment options are increasing (e.g. varenicline and internet sites). Our results are also limited to the treatment interests of current smokers who had recently tried to quit. Finally, our results only indicate life-time experience, not what happened at the most recent quit attempt.

4.4. Summary

Our rates of use of and interest in treatment for smoking cessation are encouraging. However, many VT smokers still did not plan to use any treatment even though they knew treatment was free or at greatly reduced price. What cognitive and other barriers are preventing such smokers from accessing treatment access have rarely been studied. However, in one study, an intervention to decrease anxiety about tobacco withdrawal symptoms increased seeking smoking cessation treatment.(Hall, 1984) This suggest delineating the most common reasons for not seeking treatment could lead to changes in the advertising of treatment services or in the information given to smokers by clinicians could increase treatment seeking.

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Appendix: Studies in Tables 1a and 1b

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Table 1a

Prevalence (%) of Ever Use of Treatment Among Current Smokers^a

Study	Date of survey	Sample	N	Any Tx	Psychosocial	Phone	Group	Individual	Any Med	Any NRT	Gum	Patch	Inhaler	Lozenge	Bupropion
Alberg, 2005	1998	MD	1954							35	20	26			
De Zwart, 2002	1998	NZ	250							31					
Yankelovich, 1998	1998	US	1001				6			32	18	32			5
Gallup, 1999	1999	US	?		11					35	16	20			
Paul, 2003	2000	Aus	215							33	12	24	<1		
Bansal, 2004	2001	US	1046						40	32	22	25	2		8
Current Study	2004	VT	380	61	21	12	8	9	57	52	22	41	7	8	24

Aus = Australia, MD = Maryland, N = sample size, NRT = nicotine replacement therapy, NZ = New Zealand, Tx = treatment, US = United States, VT =Vermont

^aSee appendix for references

Table 1b

Prevalence (%) of Use of Treatment in Last Year Among Quit Attempters^a

Study	Date of survey	Sample	N	Any Tx	Psychosocial	Phone	Group	Individual	Any Med	Any NRT	Gum	Patch	Inhaler	Lozenge	Bupropion
Zhu 2000	1996	CA	4480	17	5					14					
Solberg, 2001 ^b	1998	MN	1513	53		2	3				16	32	1		30
Thorndike, 2002	1998	MA	1236							21					
Pierce, 2002	1999	CA	3911	22			3	3	17	14	5	11	0		5
Cokkinides, 2005	2000	US	3996	22	1				22						
Biener, 2006 ^b	2002	MA	787		7	1	6			23					8
Haviland, 2003	2002	US	1380								8	19			20
Pierce, 2004	2002	CA	1257							16					6
Shiffman, 2008	2003	US	12,799	36	7				32	26					12
West, 2007 ^c	2003	CAN, FR, UK, US	1561							33					
West, 2001	2004	UK	NA	21			7			10					4

^aSee appendix for references

^bQuit attempt in last 2 yrs

CA = California, CAN = Canada, FR = France, MA = Massachusetts, MN = Minnesota, N = sample size, NRT = nicotine replacement therapy, Tx = treatment, UK = United Kingdom, US = United States

^cLast 3 mo

Table 2
Among Smokers Who Tried to Quit in the Past Year (n=380) the Percent Aware of and Used Treatment, and Reasons For Not Using a Treatment.

	Quitline	Group	Patch	Gum	Inhaler	Lozenge	Bupropion
Among All Quitters(%)	n=380	n=380	n=380	n=380	n=380	n=380	n=380
Aware of treatment	76	81	91	90	62	68	77
Aware and tried	12	8	41	22	7	8	24
Aware but did not ever try	64	73	49	68	55	59	53
Among Non-Users, Reason Did Not Use Treatment (%) ^a	n=244	n=277	n=188	n=257	n=209	n=225	n=202
Cost	5	21	45	32	27	28	35
Doesn't work	17	19	22	25	16	20	22
Addictive			18	16	15	13	27
Side-effects			52	42	33	34	58

^aReasons are not mutually exclusive