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Smoking cessation abstinence goal in treatment-seeking smokers

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HIGHLIGHTS

- Abstinence goal changes over time.
- Lower educational level is a consistent predictor of a stringent abstinence goal.
- Abstinence goal and status are correlated.
- Goal predicts future status even when current status is controlled.

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ABSTRACT

Introduction: Baseline abstinence goal is a robust predictor of cigarette abstinence. However, important questions about goal remain unanswered. These include variables correlating with goal, changes in goal, relationship of goal and abstinence status over time, and predictors of change. The current study aimed to address these questions.

Method: Participants were treatment-seeking volunteers in two clinical trials. In Clinical Trial 1 (N = 402), participants smoked ≥10 cigarettes per day (CPD) and were ≥50 years of age. In Clinical Trial 2 (N = 406), participants smoked ≥10 CPD, smoked within 30 min of arising, and were ≥18 years of age.
The outcome variables were biochemically verified 7-day abstinence from cigarettes at weeks 12, 24, 52, and 104. Abstinence goal, demographic, psychological, and smoking related variables were assessed via standard instruments.

Results: At baseline, the greater the desire to quit and one's expectations of success, and the lesser the educational level, the more likely participants were to have a quit forever goal. Throughout the two-year study, abstinence from cigarettes and a lower educational level were correlated with a goal of quit forever; 37% of participants changed goal. There were no predictors of goal change. Abstinence goal was related to abstinence status across the study period. The goal predicted abstinence status at subsequent assessments, even when status was controlled.

Conclusion: Lesser educational levels were consistent predictors of a more stringent goal. Abstinence goal changes over time. These findings suggest that repeated counseling about goal is advisable and participants would benefit from such counseling, independent of demographic characteristics and smoking status.

1. Introduction

Effective interventions exist for the treatment of cigarette smoking. Less well known are the processes that move people towards taking advantage of these interventions to achieve cigarette abstinence.

Smokers' statements of abstinence goals at treatment initiation have proven a consistent predictor of treatment outcome. This is especially true when those who have an abstinence goal of quitting forever are compared with those who have other goals such as reduced or intermittent use, abstinence for a limited time period, or acceptance that slips will occur despite abstinence attempts. Those selecting an abstinence goal of quitting forever are more likely to stop smoking than those who select other abstinence goals (Peters, Hughes, Callas, & Solomon, 2007).

These findings have been consistent across the two subpopulations of smokers that have been studied: those entering abstinence oriented

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treatment programs and those entering interventions that recruit any smoker, regardless of intent to quit (Hall et al., 2006). Abstinence goal at treatment initiation predicts abstinence status across samples with different characteristics, including those drawn from the general population (Hall, Havassy, & Wasserman, 1990) and psychiatric patients (Shmueli, Fletcher, Hall, Hall, & Prochaska, 2008).

Given this consistency in predictive power, it is of interest to determine how abstinence goals change over time and the variables that contribute to the selection of abstinence goals. One study (Shmueli et al., 2008) examined changes in abstinence goals over time.

Participants were 100 smokers in treatment in a smoke-free adult inpatient psychiatry unit. Smoking was assessed at hospital intake, shortly before discharge, and post hospitalization. The participants were more likely to endorse a quit forever goal shortly before discharge than at admission. Also, the participants' abstinence goal shortly before discharge was significantly related to their abstinence status post hospitalization.

A goal of quit forever at treatment entrance also predicts abstinence from other drugs of abuse. Wasserman, Weinstein, Havassy, & Hall (1998) found that abstinence goal predicted abstinence from illicit opioids in methadone maintenance patients; Hall, Havassy, & Wasserman (1991) and McKay, Merikle, Mulvaney, Weiss, & Koppenhaver (2001) found that abstinence goal predicted abstinence from cocaine in cocaine treatment patients. Mowbray et al. (2013) reported that a stringent abstinence goal predicted a higher percentage of days abstinent, and a higher number of days since last drink.

Bujarski, O'Malley, Lunny, & Ray (2013) coded drinking goal into three categories: (a) controlled drinking (to be in control of alcohol consumption); (b) conditional abstinence (temporary abstinence or acceptance of the possibility of a slip); and (c) quit forever. Using these categorizations, they found that a goal of quit forever was associated with the best outcomes, followed by conditional abstinence. Controlled abstinence was associated with the poorest outcomes.

These parallel findings across addictions reinforce the need to understand the processes by which individuals set goals. These studies examined the predictive power of baseline goal. However, important questions remain unanswered. These include what variables correlate with the goal on treatment entrance; whether the goal changes over time; and if so, what variables are correlated with these changes; and the predictive power of goals over time. Thus, the specific aim of the current study was to provide data to address these questions.

2. Methods

2.1. Participants

We analyzed data from two large samples of treatment seeking smokers drawn from the general population. The two parent studies are described in detail in the original manuscripts.

In Clinical Trial 1, participants (N = 402) were aged 50 and older and smoked 10 cigarettes per day or more (Hall et al., 2009). They were recruited from the general population and received 12 weeks of group counseling, nicotine replacement therapy (NRT), and bupropion SR. They were then randomly assigned to either: (1) no further treatment; (2) extended cognitive behavioral treatment (CBT) alone up to week 52; (3) extended CBT plus NRT up to week 52; or (4) NRT alone up to week 52. The participants were assessed at baseline, and at weeks 12, 24, 52, and 104.

In Clinical Trial 2, participants (N = 406) were aged 18 and older, smoked 10 cigarettes per day or more, and reported smoking within 30 min of arising (Hall et al., 2011). They were recruited from the general population and received 12 weeks of group counseling, NRT, and bupropion SR, and then were randomly assigned to one of five conditions: (1) no further treatment; (2) active bupropion SR alone provided up to week 52; (3) placebo bupropion SR alone provided up to week 52; (4) active bupropion SR and extended CBT, both provided up to week 52; or (5) placebo bupropion SR and extended CBT, both provided up to week 52. The participants were assessed at baseline, and at weeks 12, 24, 52, and 104.

The samples from these two clinical trials were combined for the current analyses. Thus, for the current study, N = 808.

3. Measures

The primary instrument of interest in both studies was the Thoughts about Abstinence (TAA) Questionnaire (Hall et al., 1990, 1991). This is a four-item questionnaire which is adapted from an instrument originally developed by Marlatt, Curry, & Gordon (1988). The first three items measure desire to quit smoking, expectations of success in quitting, and perceived difficulty of quitting, all on a 10-point Likert scale. The final item asks respondents to endorse one of the following seven categories that best reflects the abstinence goal: (1) have no clear goal; (2) want to use cigarettes in a controlled manner — to be in control of how they smoke and how much they smoke; (3) want to be totally abstinent for a period of time, after which they will decide about continued use; (4) want to smoke occasionally, but not let it be a habit; (5) want to quit smoking once and for all, but realize they may slip; (6) want to quit smoking cigarettes once and for all, to be totally abstinent and never smoke cigarettes again; and (7) other.

We assessed cigarette smoking by self-report of cigarettes smoked in the past seven days, verified by carbon monoxide and anatabine/anabasine assays in Clinical Trial 1. Abstinence was verified by carbon monoxide and cotinine assays in Clinical Trial 2.

In addition, in both studies at baseline, we administered: (1) a descriptive questionnaire to assess smoking behaviors, age, gender, education, occupation, marital status, and ethnicity; (2) the Fagerström Test for Cigarette Dependence (FTCD), a six-item instrument that measures smoking behaviors indicative of cigarette dependence (Fagerstrom, 2012, 1978; Heatherton, Kozlowski, Frecker, & Fagerström, 1991); (3) the Profile of Mood States (McNair, Lorr, & Droppleman, 1992), which yields a Total Mood Disturbance score (POMS TMD); (4) the Perceived Stress Scale, a 14-Likert-item scale, which measures perceived stressful life situations (Cohen & Cohen, 1983); (5) the Medical Outcome Studies 36-item Short-form Health Survey (Ware & Sherbourne, 1992), which yields two subscales (general mental health scale and physical health scale); and (6) the depression section of the Computerized Diagnostic Interview Schedule for DSM-IV (CDIS) (Robins et al., 2000), administered by research staff.

4. Statistical methods

With one exception, noted below, after inspecting the data, we collapsed the abstinence goal into two categories: endorsement of an abstinence goal of quitting forever versus other abstinence goal. Other abstinence goal included participants in all other categories. This bivariate categorization was used because of low frequencies in categories other than quit forever (Table 1). This categorization was supported by preliminary analyses, which failed to show differences between the seven categories on baseline smoking behavior, psychological variables, or demographic characteristics.

4.1. Propensity score analysis to adjust for differences between Clinical Trials 1 and 2

To control for differences between the two clinical trials that might result in biased estimates, we conducted a propensity score analysis (Lanehart et al., 2012). The quality of the scores was found to be high when side-by-side boxplot models were compared. The score was included in analytic models. Variables that contributed to the propensity score were living situation, income, level of nicotine dependence, number of cigarettes smoked per day, years as a smoker, desire to quit, expectations of success, and perceived difficulty. Age was entered as a separate covariate in the models, given the obvious and predetermined age

Table 1
Percentage of participants who endorsed each of the abstinence goal at different time points.

	Baseline		Week 12		Week 24		Week 52		Week 104	
	n	%	n	%	n	%	n	%	n	%
No goal	5	0.6	10	1.9	23	4.1	34	6.9	39	8.5
Controlled use	5	0.6	9	1.7	18	3.2	27	5.5	23	5.0
Abstinence for a short time, then decide about continued use	5	0.6	7	1.3	19	3.4	17	3.4	10	2.2
Not a habit, but smokes occasionally	28	3.6	33	6.3	34	6.1	34	6.9	21	4.6
Quit smoking, but might slip	203	25.8	153	29.1	143	25.6	106	21.4	100	21.7
Quit forever	531	67.6	297	56.6	312	55.9	267	53.9	251	54.5
Other	9	1.2	16	3.1	9	1.6	10	2.0	17	3.7

Note: Percentage may not add up to 100 due to rounding.

difference between the two clinical trials (Clinical Trial 1: mean age = 56.7, SD = 5.9; Clinical Trial 2: mean age = 40.7, SD = 9.8).

4.2. Multiple imputation procedure to handle missing data

Abstinence status was missing for 3% of the sample at 12 weeks, 4% at 24 weeks, 7% at 52 weeks, and 16% at 104 weeks. The abstinence goals were missing for 3% of the sample at baseline, 35% at week 12, 31% at week 24, 39% at week 52, and 43% at week 104.

Missing values were imputed using a multiple imputation procedure which uses an iterative process based on the available abstinence status and goal data (McKnight, McKnight, Sidani, & Figueredo, 2007). Missing values were replaced with imputed values to create a complete dataset over multiple iterations, thereby eliminating biases that would occur if the missing data were not included in the analyses. Parameter estimates from each iteration were averaged to provide a single estimate. The imputation procedure reached the final estimate in 20 iterations.

4.3. Consolidation of treatment groups

To reduce the number of parameters in the model, we followed the procedures described by Grady et al. (2014) to consolidate treatment groups. Briefly, we combined the treatment groups between the two clinical trials that were similar in structure and content, and had similar abstinence rates at followup assessments when compared using a Chi-square test. This procedure reduced the number of groups to five. These groups consisted of: (1) a group that combined the no further treatment control groups from both studies with the placebo bupropion alone group from Clinical Trial 2; (2) a group that combined the extended CBT alone group from Clinical Trial 1 with the placebo bupropion plus extended CBT group from Clinical Trial 2; (3) a group that combined the extended CBT plus NRT group from Clinical Trial 1 with the extended CBT plus active bupropion group from Clinical Trial 2; (4) the extended NRT group from Clinical Trial 1 was not combined with any other other group; and (5) the extended active bupropion group from Clinical Trial 2 was not combined with any other group.

4.4. Analyses to address study questions

To determine the variables correlated with abstinence goal (quit forever vs. other goals) at baseline, we used Pearson's correlation for continuous variables and Chi-square tests for categorical variables. The variables included were demographic variables, smoking history and abstinence status variables, the first three items of the TAA questionnaires (desire, expectations, difficulty), FTCD total score, POMS TMD, the physical health component and mental health component scales of the SF-12, perceived stress scale score, and the SPI index.

Predictors of abstinence goal and changes in abstinence goal over the course of the study were assessed by a GEE analysis. In the initial step of computing the GEE model, we entered those baseline variables that correlated with outcome, along with the propensity scores. The variables that failed to reach $p < .05$ were successively eliminated from the model. We entered the interaction terms of treatment condition, baseline cigarettes smoked per day, and educational level over time in the model. Treatment condition was chosen because of its theoretical importance; baseline cigarettes smoked per day and educational level were chosen because they correlated with the abstinence goal on at least two time points. None of the interactions reached significant levels, and were eliminated from the final model.

To determine the relationship of abstinence goal to abstinence status (relapsed versus abstinent), we used series of multivariate logistic regression models. The variables that correlated with abstinence status over time were used as covariates. These were age and treatment group. Propensity score was also included. Abstinence status and abstinence goal were correlated (at week 12, $r = 0.25$ and $p < .0001$; at week 24, $r = 0.29$ and $p < .0001$; at week 52, $r = 0.32$ and $p < .0001$; at week 104, $r = 0.28$ and $p < .0001$). Therefore, we also included abstinence status at the previous assessment as an additional covariate. These analyses were used to determine the ability of abstinence goal at each assessment to predict abstinence status at the following assessment, with abstinence status at the earlier assessment controlled. Thus, we studied the predictive power of abstinence goal from weeks 12 to 24, from weeks 24 to 52, and from weeks 52 to 104.

The stability of abstinence goal over time was calculated as the percentage of participants changing abstinence goal. These calculations were completed from baseline to week 12, weeks 12 to 24, weeks 24 to 52, and weeks 52 to 104.

All data analyses for this paper were generated using SAS software, Version 9.3 of the SAS System for Windows (SAS Institute Inc, 2011). We considered estimates to be statistically significant if the p-value from a two-tailed test was <0.05.

5. Results

5.1. Variables correlated with abstinence goal

Table 1 shows the number and percent of individuals endorsing each abstinence goal at baseline. Table 2 shows the mean and standard deviation (SD) of continuous measures by abstinence goal. Table 3 shows the prevalence of quit forever abstinence goal by categorical variables.

At baseline, participants' educational level ($r = -0.08$, $p = 0.0207$), desire to quit ($r = 0.17$, $p = <.0001$), and expectation of success ($r = 0.19$, $p = <.0001$) were all significantly correlated with abstinence goal. The higher the desire to quit and the expectation of success, the more likely the participant was to have an abstinence goal of quitting forever. Those with higher educational levels were less likely to select quitting forever as their abstinence goal.

Over the course of the study, the GEE model indicated that those who were abstinent from cigarettes were 57% more likely to have quit forever as their abstinence goal (AOR = 1.57, 95% CI = 1.45–1.70). This model also indicated that those with college education or higher were less likely to have a quit forever abstinence goal (AOR = 0.80, 95% CI = 0.69-0.94) over time as were those in the extended-active condition in the second clinical trial (AOR = 0.59, 95%CI = 0.45, 0.78).

5.2. The stability of goal

As Fig. 1 indicates, abstinence goal did change over the course of the two-year assessment period. Visual inspection suggested that

Table 2
Mean and standard deviation (SD) of continuous measures by abstinence goal at baseline.

	Those with quit forever abstinence goal		Those with other abstinence goals	
	n	Mean (SD)	n	Mean (SD)
Age*	531	49.3 (10.85)	255	47.6 (12.12)
Numbers of cigarettes smoked in last 7 days	531	137 (59.98)	255	132.5 (65.95)
Years of regular smoking	530	30.9 (11.45)	255	29.3 (12.41)
Fagerstrom Test for Cigarette Dependence (FTCD)	529	5.0 (2.05)	254	4.7 (2.06)
POMS Total Mood Disturbance Score (POMS TMD)	505	16.2 (28.96)	248	20.4 (28.28)
Perceived stress scale (PSS)	528	19.9 (7.53)	253	20.3 (7.57)
Standardized mental component scale (MCS)	504	50.1 (8.83)	247	48.9 (9.01)
Standardized physical component scale (PCS)	504	49.7 (8.62)	247	50.3 (7.73)
Standardized physical component scale (PCS)	528	4.8 (1.41)	255	4 (1.5)

Note.
* Comparisons statistically significant at $p < 0.05$, two-tailed test.

participants were slightly, but consistently, more likely to change from other abstinence goals to quit forever abstinence goal.

From baseline to week 12, 31% of participants changed their abstinence goal; from weeks 12 to 24, 20% changed their abstinence goal; from weeks 24 to 52, 21% changed their abstinence goal; finally, 26% changed their abstinence goal from weeks 52 to 104. Overall, 37% of participants changed their abstinence goal during the two-year treatment period.

Table 3
Prevalence of quit forever abstinence goal by categorical demographic characteristics and smoking behavior at baseline.

Characteristics	n (%)	Prevalence of quit forever abstinence goal at baseline (%)
Education *		
<High school degree	27 (3.5)	81.5
HS graduate	84 (10.8)	71.4
Some college	288 (36.9)	68.8
College or more	381 (48.9)	64.6
Race/ethnicity		
Black	61 (7.9)	68.9
Asian	27 (3.5)	59.3
White	598 (77.3)	67.4
Other	88 (11.4)	69.3
Employment		
Employed	540 (69.5)	67.2
Others	237 (30.5)	67.5
Marital		
Married	219 (28.0)	69.0
Not married	564 (72.0)	67.0
Living situation		
Rent or own	695 (89.0)	67.1
Not rent or own	86 (11.0)	70.9
Desire of quit *		
Low desire (1–3)	7 (0.9)	71.4
Middle desire (4–7)	178 (22.7)	56.2
High desire (8–10)	598 (76.4)	70.7
Expectation of success *		
Low expectation (1–3)	17 (2.2)	58.8
Middle expectation (4–7)	260 (33.2)	56.9
High expectation (8–10)	507 (64.7)	73.2
Perceived difficulty		
Low difficulty (1–3)	69 (8.8)	69.6
Middle difficulty (4–7)	285 (36.5)	66.7
High difficulty (8–10)	427 (54.7)	67.7
History of major depressive episode (MDE)		
Yes	219 (27.9)	67.1
No	566 (72.1)	67.8
Treatment group		
BT + Brief + Placebo/MM	258 (32.8)	69.4
Active/MM	79 (10.1)	67.1
E-CBT + Placebo/CBT	177 (22.5)	61.0
E-Combined + Active/ CBT	174 (22.1)	71.3
E-NRT	98 (12.5)	68.4

Note: Percentage may not add up to 100 due to rounding.
* Comparisons statistically significant at $p < 0.05$, two-tailed test.

5.3. Prediction of changes in goal

As noted above, none of the time X independent variable interaction terms were significant in the GEE model. So no meaningful predictors of changes in goal emerged.

5.4. Abstinence goals as predictors of abstinence status over time

Of importance, these data suggested that abstinence goal was a predictor of abstinence status, even when the abstinence status at the previous time point was controlled.

The abstinence goal at week 12 was significantly related to abstinence status at week 24 (AOR = 1.96, 95% CI = 1.27–3.02). Abstinence status at week 12 was also significantly related to abstinence status at week 24 (AOR = 18.00, 95% CI = 11.83–27.39). Similarly, week 24 abstinence goal (AOR = 2.30, 95% CI = 1.50–3.53) and abstinence status (AOR = 14.25, 95% CI = 9.32–21.79) were both significantly related to week 52 abstinence status. However, week 52 abstinence status (AOR = 13.32, 95% CI = 8.83–20.09), but not abstinence goal (AOR = 1.57, 95% CI = 0.99–2.50), was significantly related to week 104 abstinence status. Thus, both participants' abstinence status and abstinence goal at the assessment immediately preceding were significant predictors of their later abstinence status during weeks 12 through 52.

Multivariate logistic regression models indicated that baseline abstinence goal did not predict abstinence status at week 12 (AOR = 1.18, 95% CI = 0.86–1.62), week 24 (AOR = 1.36, 95% CI = 0.99–1.86), and

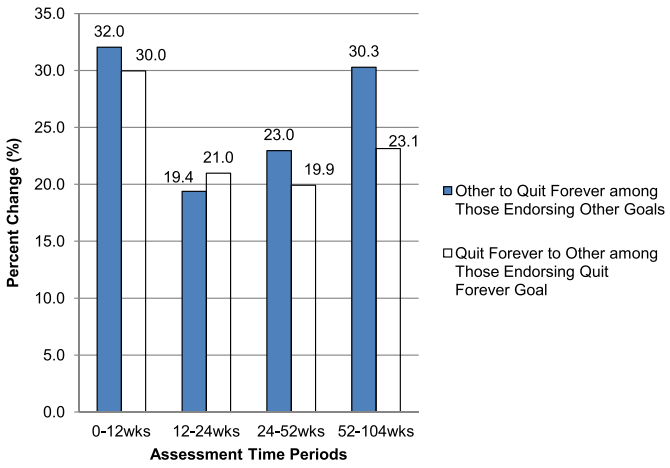

Fig. 1. Percent change in abstinence goal from 'other' to 'quit forever' and from 'quit forever' to 'other'.

week 52 (AOR = 1.35, 95% CI = 0.97–1.88), but did predict abstinence status at week 104 (AOR = 1.59, 95% CI = 1.11–2.28).

6. Discussion

This study yielded important new information about abstinence goal: (1) abstinence goal is not invariant, but changes over time; (2) clinically meaningful correlates of goal both at treatment entrance, and during the course of treatment, were identified. These include educational level and abstinence status; (3) an intriguing finding was that during the course of treatment, abstinence goal was a predictor of abstinence status, even when abstinence status at the previous assessment was controlled.

With respect to the variability of goal over time, 37% of participants changed goal over the course of the study. As Fig. 1 indicates, similar numbers of participants change from a goal other than quit forever to quit forever, or from quit forever to another abstinence goal at weeks 12, 24 and 52, with a slightly larger spread at week 104.

Although the assessment of variability in abstinence goal at baseline among participants was not a stated aim of this study, we noted a surprising amount of variability of goal among participants at study entrance. Thirty-three percent had a goal other than quit forever at study start. This occurred even though participants in these studies would be assumed to be highly motivated to quit. That is, they had proactively initiated contact with a smoking treatment clinic, participated in a lengthy pretreatment screening process involving a telephone screening, an orientation meeting, an hour long initial assessment, and agreed to enter into an extended treatment that lasted for a full year. One would assume a smoker who completed this process would be motivated to quit smoking forever, but these data suggest that evaluating goals at the beginning of treatment, even among presumably motivated smokers, is important, and may allow tailoring of the intervention to fit the smokers' stated goal. For example, smokers with a goal other than complete and total abstinence could be given a motivational intervention, such as motivational interviewing, with the providers' goal being movement towards a goal of complete and total abstinence early in treatment.

Two clinically meaningful correlates of abstinence goal emerged from these analyses. First, both at baseline, and over time, higher educational levels were correlated with the choice of abstinence goals other than quit forever. This is counterintuitive, since it would be expected that smokers with higher educational levels would be more knowledgeable about the health risks of smoking, and thus more likely to elect to quit forever. On the other hand, it may be that the information about the harms of smoking has been so widely disseminated that factual knowledge about smoking is independent of educational level, and other variables in the more educated smokers affected their choice of abstinence goal. It has been shown that individuals of higher socioeconomic and educational levels feel that they have more control over their lives than those of lower levels (Lachman & Weaver, 1998; Specht, Egloff, & Schmukle, 2013). This perception of control may have led the more educated participants to believe that they could control their smoking at some reduced level. This finding suggests that treatment programs should remind all smokers that there is no level of smoking that is safe. On the other hand, it should also be noted, that the amount of variance explained by the correlations was quite small.

Second, the GEE models indicated that abstinence status and abstinence goal were correlated over the two year period. Those who were abstinent were more likely to have a goal of quit forever. These data highlight the importance of continually assessing abstinence goal during treatment, and reinforcing a goal of abstinence, especially among those who are smoking.

It is of interest that even when abstinence status at a previous assessment is controlled, abstinence goal predicts abstinence status at the next assessment. This finding once again underscores the importance of continually assessing and reinforcing goal, since it continues to be a strong predictor of later abstinence status, even among those who are smoking.

There are several limitations to this study. Even though abstinence goals changed over time and we found sufficient variation in abstinence goals that predictors potentially could be identified, we did not find predictors of change. We were comprehensive in our selection of variables to study. Nevertheless, some that might have proved useful were not assessed. Among these are partner smoking status and social support for abstinence.

Also, it might be hypothesized that individuals endorsing a goal of 'wants to quit once and for all, but realizes he or she may slip', may ultimately be the most successful in attaining abstinence, since such individuals have the most reasonable expectations of the abstinence process, and thus would not suffer from an Abstinence Violation Effect (Marlatt & Donovan, 2007). Preliminary analyses indicated this was not the case. However, we did not collect time-line follow-back data over the course of the study, and thus were unable to test the hypothesis that individual selecting this goal would be more likely to return to abstinence after a lapse.

Self-efficacy is another consistent predictor of outcome, and it might be suggested that goal and abstinence self-efficacy are correlated, and this correlation underlies the relationship between goal and outcome. However, in the current study, the expectation of success at quitting, a measure of self-efficacy (Hendricks, Delucchi, & Hall, 2010) was correlated with goal, but only at baseline. The same was true for desire to quit.

It is somewhat surprising that baseline goal correlated only with abstinence status at week 104. Since goal was a robust predictor at other times points, and baseline goal has been a robust predictor in multiple other studies, we can only attribute this finding to chance variation.

Another limitation is the sample selected. They were treatment seeking smokers, and the results may well be different had we selected those who wished to quit on their own.

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Contributors

Dr. Hall obtained funding for, and directed, the studies from which these data were obtained, took the lead in conceptualizing the aims of the current study, and wrote the paper. Ms. Shi conceptualized and completed the data analyses. Drs. Humfleet, Muñoz worked with Dr. Hall to conceptualize and complete the studies from which these data were derived. Dr. Prochaska contributed to the conceptualization, writing, and editing of the paper, and collaborated in formulating responses to reviewers.

Conflict of interest

The authors have no competing interests to declare.

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