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The Relationship Between In-Treatment Abstinence and Post-Treatment Abstinence in a Smoking Cessation Treatment

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Abstract

Previous research has indicated that abstinence early in a smoking cessation program is predictive of successful posttreatment abstinence. However, it has not been established whether or not this effect is independent of other in-treatment abstinence patterns. In this paper the relationship between three potentially important aspects of in-treatment smoking abstinence and posttreatment smoking abstinence are examined: early abstinence, extended abstinence, and end-of-treatment abstinence. We examined the relationship between smoking behavior measured each weekday over 70 visits (approximately 14 weeks) of a contingency management smoking cessation program and at a follow-up visit 6 months after study entry (3 months after the scheduled end of treatment). Ninety-five of 102 participants were successfully followed-up. Seven of these 95 participants were confirmed abstinent. Early abstinence, defined as abstinence during the first 10 treatment visits, was significantly and independently related to follow-up abstinence ($OR = 56.67 [7.29-440.63]$). Extended abstinence and end-of-treatment abstinence were related to follow-up abstinence, but not independent of early abstinence based on multiple regression models. Inclusion of a variety of demographic and environmental characteristics did not significantly alter this relationship. Thus, consistent with the previous literature, the establishment of early abstinence appears to be crucial to establishing longer-term abstinence, independent of other in-treatment abstinence patterns.

Keywords

cigarette; contingency management; nicotine; predictor; quitting

There have been relatively few studies that have attempted to predict posttreatment abstinence in a smoking cessation treatment from in-treatment smoking behavior. Those studies that have reported a relationship between in- and posttreatment abstinence have all come to the same general conclusion; abstinence during the first 2 weeks of treatment is predictive of posttreatment abstinence (Higgins et al., 2006; Kenford et al., 1994; Westman, Behm, Simel, & Rose, 1997; Yudkin, Jones, Lancaster, & Fowler, 1996). This type of information is important for at least two reasons. First, if some particular aspect of in-treatment smoking abstinence is important for posttreatment abstinence, then treatment could be optimized by targeting this specific behavior to increase posttreatment abstinence. Second, and perhaps more importantly for the future development of smoking cessation

treatments, this measure of in-treatment smoking abstinence could serve as a proxy for posttreatment abstinence when initially developing and optimizing smoking cessation treatments before moving these treatments on to a randomized controlled trial with multiple follow-ups. This could potentially result in a more streamlined and cost-effective way to develop new smoking cessation treatments.

While abstinence during the first 2 weeks of treatment clearly predicts follow-up abstinence, abstinence at other points in treatment might be equal or better predictors of follow-up abstinence. For instance, more frequent and continuous abstinence during treatment might increase the probability of posttreatment abstinence. However, we are unaware of any study that has specifically demonstrated this. Gilpin, Pierce, and Farkas (1997) did show that in a population sample, those former smokers who were abstinent for a longer period of time were more likely to be abstinent at a follow-up interview than those former smokers who had been abstinent for a shorter period of time. Similarly, in laboratory studies (Lussier & Higgins, 2005; Yoon, Higgins, Bradstreet, Badger, & Thomas, 2009), smokers who had been abstinent for 2 weeks chose smoking over money much less frequently than smokers who had been abstinent only 1 day. However, it is surprising that there are no studies demonstrating that the more frequently or more continuously one is abstinent from smoking during a smoking cessation treatment, the more likely one is to be abstinent at a posttreatment follow-up session. Thus, one aim of the present study is to examine whether more frequent or more continuous abstinence during treatment leads to a greater likelihood of posttreatment abstinence.

It is also plausible that those participants who are abstinent when treatment ends are more likely to also be abstinent at a posttreatment follow-up session. After all, those who are smoking when treatment ends have either not met the abstinence criterion during treatment or have already lapsed or relapsed, which is presumably a bad prognostic factor for abstinence in the not too distant future. Even with relatively high rates of relapse after treatment completion, there should be more participants who are abstinent at the end of treatment and don't relapse than participants who continue smoking throughout treatment and quit only after treatment ends—given the low rates of success for any nontreatment aided quit attempt (Cohen, Lichtenstein, & Prochaska, 1989). However, as far as we are aware there is no empirical basis for asserting that being abstinent at the end of treatment is an important predictor of posttreatment abstinence. Thus, a second aim of this paper is to examine whether being abstinent at the end of treatment predicts posttreatment abstinence.

As mentioned above, the early initiation of abstinence has been consistently associated with increased rates of follow-up abstinence. Kenford et al. (1994) reported that any smoking within the first 2 weeks of treatment predicted both short- and long-term failure in a smoking cessation program. With nicotine replacement therapy, early abstinence is associated with a 10- to 12-fold increase in the odds of being abstinent at follow-up (Kenford et al., 1994; Westman, Behm, Simel, & Rose, 1997; Yudkin et al., 1996). Likewise, abstinence early in contingency management treatments¹ of pregnant smokers is associated with end-of-pregnancy abstinence (Higgins et al., 2006). However, early abstinence, at least in contingency management procedures, is also associated with an increased likelihood of being successful in treatment; that is, smoking less frequently, less continuously, or being abstinent at the end of treatment (Lamb, Morral, Kirby, Iguchi, & Galbicka, 2004). Thus, it is unclear whether the strong association of the early initiation of abstinence with posttreatment abstinence is a result of this early cessation of smoking per se,

¹Contingency management is a procedure that promotes behavior change through the use of operant reinforcement contingencies. Incentives (e.g., cash or vouchers) are made contingent on producing a therapeutic target behavior (e.g., a breath CO level < 4 ppm). See Higgins, Silverman, and Heil (2008) for an extensive review.

or a result of these individuals being more likely to maintain abstinence for extended periods while in treatment and/or to be abstinent when treatment ends. Thus, the third aim of this study is to examine to what extent early abstinence, as defined as not smoking during the first 2 weeks of treatment, is a predictor of posttreatment abstinence independent of its relationship with extended in-treatment abstinence and end-of-treatment abstinence.

Finally, subject characteristics such as living with another smoker, being female, or being younger might influence both an individual's likelihood of being abstinent during treatment and posttreatment abstinence (see Caponetto & Polosa, 2008 for a review). Thus, we also examine the influence of a variety of demographic and environmental characteristics on posttreatment abstinence, and examine whether these subjects' characteristics and/or environmental factors can explain any relationship between in-treatment abstinence and posttreatment abstinence.

Method

Participants and Abstinence Criterion

Participants were enrolled in a previously reported contingency management study (Lamb, Morral et al., 2004), and completed a follow-up visit 6 months after study entry (approximately 3 months from the scheduled end of their study participation). Most participants were Caucasian and a little over half were female. The majority of participants were either employed full-time or students. On average, participants reported becoming full-time smokers around age 18. All participants reported a desire to quit smoking (see Lamb, Morral et al., 2004 for a more detailed description of participant characteristics). There were 102 participants eligible for the follow-up visit, by virtue of completing a baseline period and being randomized into a contingency management treatment. Ninety-five participants successfully completed the follow-up visit (93%). Participants were considered abstinent at the follow-up visit if they reported not smoking at all for the past week, had a breath carbon monoxide (CO) level of <4 ppm, and had a salivary cotinine level of <20 ng/ml. Follow-up data from one participant who reported not smoking in the past week were not used. This participant reported using smokeless tobacco and had a salivary cotinine level of 599.3 ng/ml, even though their breath CO level was consistent with not smoking in the past day. From the 94 remaining participants, 8 reported having not smoked in the past week during the follow-up visit. Each of these 8 participants had breath CO levels consistent with abstinence over the past 24 hours (<4 ppm; see Javors, Hatch, & Lamb, 2005). However, one participant had cotinine levels inconsistent with smoking abstinence over the past week (198.9 ng/ml) while reporting having not used nicotine replacement therapy (NRT) or other tobacco products. This participant was scored as smoking at follow-up. The remaining 7 participants were scored as being abstinent at follow-up, which gave a follow-up abstinence rate of 7% (7 of 94).

During the contingency management treatment, abstinence was defined as a self-report of not smoking on the past day and a breath CO level of <4 ppm. The study consisted of 70 visits, which occurred during each nonholiday weekday. Visits could be excused in advance. Participants received \$1.00 for each visit they submitted a breath CO sample. The first 10 visits were the baseline phase. On the first baseline visit, participants could receive an additional \$2.50 if their breath CO level was <4 ppm. During the next nine baseline visits, participants could only receive \$1.00 for submitting each breath CO sample and were monitored for how they were doing in this quit attempt on their own. During the subsequent 60 visits participants received one of several contingency management interventions (see Lamb, Morral et al., 2004).

Statistics were calculated using STATA SE version 10.1 (Stata Corporation, College Station, TX) running on a Mac Pro with a Quad-Core Intel Xeon processor using Mac OSX 10.5.7. In general, the relationship between various variables and abstinence at follow-up was assessed using logistic regression, though in some cases, as outlined in the text, Fisher's exact test or a chi square test were used.

Results

Early Treatment Abstinence

Given the strong relationship between complete abstinence during the first 2 weeks of treatment and posttreatment abstinence in the literature (e.g., Higgins et al., 2006; Kenford et al., 1994; Westman et al., 1997), we defined early treatment abstinence as being abstinent during the first 10 visits of treatment, which approximated the first 2 weeks of treatment. One of 56 (2%) participants who failed to produce even one visit of early abstinence was abstinent at follow-up. Two of 31 (6%) participants produced between 1 and 9 visits of early abstinence and were also abstinent at follow-up, whereas 4 of 6 participants (67%) who were abstinent on all 10 visits were also abstinent at follow-up. As shown in Table 1, participants who were abstinent on all 10 visits were much more likely to be abstinent at follow-up. Consistent with the results of Kenford et al. (1994) and others, complete abstinence early in treatment appeared crucial to longer-term success.

Extended Abstinence

The results of Gilpin et al. (1997) suggest that longer periods of abstinence lead to greater proportions of people maintaining abstinence. We defined these long periods of abstinence during treatment in two ways. Total cumulative abstinence was defined as the total number of in-treatment visits during which the abstinence criterion was met. Total consecutive abstinence was defined as the maximum number of sequential in-treatment visits meeting the abstinence criterion. Both variables were regressed individually on abstinence at follow-up using logistic regression. Total cumulative abstinence and total consecutive abstinence were significantly related to follow-up abstinence, as shown in Table 1. Not surprisingly, total consecutive abstinence correlated 0.89 ($p < .001$, $n = 94$) with total cumulative abstinence. Thus, to simplify analysis, we only used total consecutive abstinence when building multiple regression models. This measure was also more similar to other findings in the literature (Lussier & Higgins, 2005; Yoon et al., 2009).

End-of-Treatment Abstinence

Similar to total in-treatment abstinence, we divided abstinence at the end-of-treatment two ways. Consecutive end-of-treatment abstinence was defined as the number of sequential visits abstinent from visit 70. Cumulative end-of-treatment abstinence was defined as the total number of abstinent visits during the last 10 scheduled visits. Consecutive end-of-treatment abstinence, but not cumulative end-of-treatment abstinence, was significantly related to follow-up abstinence, as shown in Table 1. Thus, consecutive end-of-treatment abstinence was used in all subsequent analyses.

Multiple Regression Model

A model including the independent variables early abstinence (defined as no smoking during the first 10 treatment visits), total consecutive abstinence, and consecutive end-of-treatment abstinence regressed on follow-up abstinence was highly significant, LR $\chi^2(3) = 17.18$, $p = .0006$, pseudo $r^2 = 0.34$, $n = 94$. However, as shown in Table 2, only early abstinence was an independent predictor for follow-up abstinence.

The lack of significance for both total consecutive abstinence and consecutive end-of-treatment abstinence likely resulted from these variables being highly related to early abstinence. For instance, the median number of total consecutive visits abstinent for participants who achieved early abstinence was 52 (interquartile range = 24–70). For the rest of the participants who did not achieve early abstinence the median number of total consecutive visits abstinent was 2 (interquartile range = 0–7.5). The same pattern was evident for the median number of consecutive end-of-treatment abstinence: 52 (interquartile range = 0–70) versus 0 (interquartile range = 0), for those participants either achieving complete early abstinence or not, respectively. Thus, early abstinence was the best independent predictor of follow-up abstinence.

Demographic Variables

We also examined whether the relationship between early abstinence and follow-up abstinence might be mediated by a demographic third variable. We used tabular analysis to examine the relationship between follow-up abstinence and the following demographic variables: gender, race/ethnicity, marital status, annual salary, employment status, and education. We used logistic regression to examine the relationship between follow-up abstinence and age.

Of all the demographic variables tested, only marital status and employment status appeared to be related to follow-up abstinence ($p < .10$). The relationship between marital status and follow-up abstinence, $\chi^2(4) = 11.58$, $p = .021$, appeared to have been driven almost entirely by the high follow-up abstinence rate among participants who were separated (2 of 4; 50%) compared to participants that were either single (1 of 30; 3%), married (3 of 38; 8%), divorced (1 of 16; 6%), or in a common-law marriage (0 of 5; 0%) at the intake session. A dichotomous marital status variable (married or not) was unrelated to follow-up abstinence (Fisher's exact test, $p = 1.00$). A variable separating subjects into either married (legally or common-law), single, or formerly married (separated or divorced) was also unrelated to abstinence at follow-up, $\chi^2(2) = 2.38$, $p = .30$, $n = 93$. Additionally, a Fisher's exact test which excluded those participants who were separated was still significant for the relationship between early abstinence and posttreatment abstinence, $p = .015$, $n = 89$. Thus, it appeared that marital status was not a mediating variable for the relationship between early abstinence and follow-up abstinence.

The relationship with employment status, $\chi^2(4) = 8.24$, $p = .08$, appeared to have been driven by the higher rates of follow-up abstinence for participants who were either unemployed (2 of 5; 40%) or students (2 of 14; 14%), compared to participants who were employed either full-time (3 of 58; 5%), part-time (0 of 3; 0%), or seasonally (0 of 2; 0%). A dichotomous employment variable (employed vs. unemployed) was related to follow-up abstinence, with 4 of 19 (21%) participants not employed being abstinent at follow-up compared to 3 of 63 (5%) participants who were employed ($p = .047$, Fisher's exact test). However, this variable was unrelated to early abstinence, as 5% of participants not employed were abstinent on visits 11–20, compared to 7% of participants who were employed ($p = 1.00$, Fisher's exact test). Thus, the relationship between early abstinence and follow-up abstinence was independent of employment status. However, employment status seemed to *modify* the relationship between early abstinence and follow-up success. Of the 76 participants who failed to achieve early abstinence, 3 were abstinent at follow-up. All three of these participants were not employed. Of the 19 participants who were not working one achieved early abstinence, and was abstinent at follow-up along with, as was just mentioned, three participants who did not achieve early abstinence ($p = .21$, Fisher's exact test). Conversely, for those participants who were employed, 3 of 5 early abstainers were abstinent at follow-up, compared 0 of the 58 participants who were not early abstainers ($p < .001$, Fisher's exact test).

Environmental and Quitting History Variables

We examined whether the relationship between early abstinence and follow-up abstinence might be mediated by any environmental variables. We used tabular analyses with the following environmental factors: living with a smoker, smoking allowed at work, and people who one smoked with at work. None of these factors were significant at the $p < .10$ level. We used logistic regression to determine whether the following variables in a participant's quitting history were related to follow-up abstinence: number of days not smoking during the past year, number of days intentionally not smoking during the past year, number of previous quit attempts, and longest time (in days) without smoking since one started smoking regularly. Only the longest time without smoking since the participant regularly started smoking was significantly related to follow-up abstinence (OR = 1.001 [1.0001–1.002], $p = .024$, pseudo $r^2 = 0.16$, $n = 91$). Rerunning this analysis using the $\log_{10}$ of the longest time without smoking (+1 to include initial values of 0) produced similar results (OR = 3.71 [1.15–11.99], $p = .029$, pseudo $r^2 = 0.14$, $n = 91$). A regression model with this logged variable and early abstinence as an independent variables was highly significant, LR $\chi^2(2) = 16.64$, $p = .0002$, pseudo $r^2 = 0.34$, $n = 91$, and compete early abstinence remained significant (OR = 31.26 [3.25–300.83] $p = .003$). However, logged longest time without smoking was not significant (OR = 1.80 [0.50–6.46], $p = .37$). Thus, the longest time without smoking was not a mediating variable for early abstinence.

Smoking-Related Variables

We examined the following variables related to smoking using either tabular analysis or logistic regression: how soon after rising one smoked, the Fagerström Test of Nicotine Dependence (Heatherton, Kozlowski, Frecker, & Fagerström, 1991), intake breath CO level, self-report of how important cigarettes were, self-report of how difficult it would be not to smoke tomorrow, age at smoking first cigarette, and the age when one first smoked regularly. Of all these measures, only the time to first cigarette after rising was significantly related to follow-up abstinence, $\chi^2(3) = 10.22$, $p = .017$, $n = 94$. No participant who smoked within 5 minutes of rising was abstinent at follow-up (0 of 38; 0%). Only 2 of 32 (6%) participants who smoked between 6 and 30 minutes after rising were abstinent at follow-up, whereas 3 of 17 (18%) and 2 of 7 (29%) participants who smoked between 30 and 60 minutes and an hour or more after rising, respectively, were abstinent. A Fisher's exact test that excluded those who smoked within 5 minutes of awakening demonstrated that a significant relationship still remained between early abstinence and posttreatment abstinence ($p < .001$, $n = 56$).

Discussion

This study substantially replicates the findings of several previous retrospective studies showing that participants who are abstinent early in treatment are much more likely to be abstinent at a posttreatment follow-up session (Higgins et al., 2006; Kenford et al., 1994; Westman et al., 1997; Yudkin et al., 1996). This study also extends these studies by showing that only certain aspects of in-treatment abstinence predicts later abstinence. While both consecutive abstinence throughout and at the end of treatment are associated with posttreatment abstinence, this relationship is not independent of early treatment abstinence. Furthermore, this study, like the earlier studies, showed that the effect of early abstinence was likely not to be the result of who those early abstainers were. That is, no particular subject characteristic seemed to mediate the effect of early abstinence on follow-up abstinence.

The relationship between early abstinence and follow-up abstinence in the current study appeared to be even larger than in previous studies using nicotine replacement therapy

(NRT). The odds ratio of participants producing complete early abstinence was 56.67 compared to odds ratios on the order of 10–12 in previous studies with NRT (Westman et al., 1997; Kenford et al., 1994; Yudkin et al., 1996), although the lower 95% confidence limit for this study (7.29) would include these values. Additionally, the current odds ratio for participants producing early abstinence is similar to that found by Higgins and coworkers (2006) with a contingency management procedure (odds ratio = 27.7–30.4). We found it interesting that Higgins et al. (2006) found that the odds ratios for participants in the control condition were from 5.5 to 11.2, much like those in studies using NRT. These findings suggest that early abstinence in contingency management procedures might be particularly crucial to the effectiveness of these treatments. Lamb, Kirby, Morral, Galbicka, and Iguchi (2004) have argued that early abstinence is in fact crucial to the effectiveness of contingency management programs, as these programs operate by increasing the frequency of abstinence by contingently reinforcing it. These findings provide some limited support for the assertion that the early development and contingent reinforcement of abstinence is crucial to the effectiveness of the contingency management treatments of smoking.

While the current results are clearly limited to the particular sample used and the retrospective nature of the analysis, these limitations are mitigated by its replication and extension of previous studies showing that early abstinence predicts later abstinence. The contribution of other factors to follow-up abstinence, and perhaps the interaction of these factors with early abstinence, likely went unobserved because of the small sample size of this study and the limited measurement of these factors. However, the contribution of these factors is likely much less than is the contribution of early abstinence, which also has the advantage that it can be a target of treatment. Future prospective studies that can control the amount of early abstinence in participants will provide the necessary data for evaluating the accuracy of the current and prior retrospective analyses.

The current results, together with those of Higgins et al. (2006); Kenford et al. (1994); Westman et al. (1997), and Yudkin et al. (1996) clearly indicate that a crucial treatment goal for *all* smoking cessation treatments should be the early and complete initiation of abstinence. Early abstinence is highly related to individuals being more abstinent during treatment and at the end of treatment, but the importance of complete early abstinence appears to be greater than what can be explained by either total cumulative abstinence or end-of-treatment abstinence. For instance, of the 10 participants who were abstinent at the end of treatment, but did not produce early abstinence, none were abstinent at follow-up. Hence, treatments should be designed to promote the early and complete initiation of abstinence. The key will be to promote early abstinence in such a way as to not discourage continued efforts toward quitting in those participants who do not succeed at initiating abstinence early on.

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References

- Capponnetto P, Polosa R. Common predictors of smoking cessation in clinical practice. *Respiratory Medicine*. 2008; 102:1182–1192. [PubMed: 18586479]
- Cohen S, Lichtenstein E, Prochaska JO. Debunking myths about self-quitting. *American Psychologist*. 1989; 11:1355–1365. [PubMed: 2589730]
- Gilpin EA, Pierce JP, Farkas AJ. Duration of smoking abstinence and success at quitting. *Journal of the National Cancer Institute*. 1997; 89:572–576. [PubMed: 9106646]

- Heatherton TF, Kozlowski LT, Frecker RC, Fagerström KO. The Fagerström Test for Nicotine Dependence: A revision of the Fagerström Tolerance Questionnaire. *British Journal of Addiction*. 1991; 86:1119–1127. [PubMed: 1932883]
- Higgins ST, Heil SH, Dumeer AM, Thomas CS, Solomon LJ, Bernstein IM. Smoking status in the initial weeks of quitting as a predictor of smoking-cessation outcomes in pregnant women. *Drug and Alcohol Dependence*. 2006; 85:138–141. [PubMed: 16720082]
- Higgins, ST.; Silverman, K.; Heil, SH. Contingency management in substance abuse treatment. New York: Guilford Press; 2008.
- Javors MA, Hatch JP, Lamb RJ. Evaluation of cut-off levels for breath carbon monoxide as a marker for cigarette smoking over the past 24 hours. *Addiction*. 2005; 100:159–167. [PubMed: 15679745]
- Kenford SL, Fiore MC, Jorenby DE, Smith SS, Wetter D, Baker TB. Predicting smoking cessation: Who will quit with and without the nicotine patch. *Journal of the American Medical Association*. 1994; 271:589–594. [PubMed: 8301790]
- Lamb RJ, Kirby KC, Morral AR, Galbicka G, Iguchi MY. Improving contingency management programs for addiction. *Addictive Behavior*. 2004; 29:507–523.
- Lamb RJ, Morral AR, Kirby KC, Iguchi MY, Galbicka G. Shaping smoking cessation using percentile schedules. *Drug and Alcohol Dependence*. 2004; 76:247–259. [PubMed: 15561476]
- Lussier JP, Higgins ST. Influence of the duration of abstinence on the relative reinforcing effects of cigarette smoking. *Psychopharmacology*. 2005; 181:486–495. [PubMed: 16034556]
- Westman EC, Behm FM, Simel DL, Rose JE. Smoking behavior on the first day of a quit attempt predicts long-term abstinence. *Archives of Internal Medicine*. 1997; 157:335–340. [PubMed: 9040302]
- Yoon JH, Higgins ST, Bradstreet MP, Badger GJ, Thomas CS. Changes in the relative reinforcing effects of cigarette smoking as a function of initial abstinence. *Psychopharmacology*. 2009; 205:305–318. [PubMed: 19390842]
- Yudkin PL, Jones L, Lancaster T, Fowler GH. Which smokers are helped to give up smoking using transdermal nicotine patches? Results from a randomized, double-blind, placebo-controlled trial. *British Journal of General Practice*. 1996; 46:145–148. [PubMed: 8731618]

Table 1

Relationship Between In-Treatment Abstinence and Post-Treatment Abstinence

Abstinence measure	Odds ratio	95% CI	<i>p</i>
Early abstinence	56.67	7.29–440.63	0.001
Total cumulative abstinence	1.05	1.02–1.09	0.004
Total consecutive abstinence	1.05	1.01–1.08	0.006
Cumulative end-of-treatment abstinence	1.17	0.98–1.40	0.810
Consecutive end-of-treatment abstinence	1.04	1.005–1.07	0.024

Note. CI = confidence interval. *n* = 94.

Table 2

Significance of Each In-Treatment Abstinence Measure in a Multiple Regression Model

Abstinence measures	Odds ratio	95% CI	<i>p</i>
Early abstinence	99.78	2.66–3737.22	0.013
Total consecutive abstinence	1.03	0.95–1.12	0.418
Consecutive end-of-treatment abstinence	0.96	0.88–1.04	0.278

Note. CI = confidence interval. *n* = 94.