

ORIGINAL ARTICLES

PSYCHOSOCIAL ASPECTS OF CHANGES IN CIGARETTE-SMOKING BEHAVIOR

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ABSTRACT

This paper examines the relationships between patients' perceptions of susceptibility to illness, self-efficacy, anxiety, social support and subsequent changes in cigarette-smoking behavior through a prospective study involving 213 patients using a Veterans Administration Medical Center (VAMC). During an inpatient or outpatient visit to the VAMC, veterans received a questionnaire and were then enrolled in a smoking cessation intervention trial wherein some patients received a practitioner-initiated minimal-contact intervention and other patients received usual care. Smoking status was assessed 3 months following hospital discharge.

Analyses revealed that patients most likely to have reduced their smoking, whether in the intervention or control group, were those reporting both high perceived susceptibility and high expectations of efficacy. Those least likely to have reduced their smoking were those reporting high susceptibility but low efficacy — what has been characterized as a 'learned helplessness' mode. Expectations of efficacy were inversely associated with general level of anxiety; that is, those reporting high levels of anxiety tended to report lower levels of self-efficacy. This relationship was powerfully buffered by a measure of social support. The results of this study suggest a number of potentially effective counseling strategies for practitioners who are trying to get their patients to quit smoking.

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Key words: Smoking cessation — Susceptibility — Self-efficacy

INTRODUCTION

Cigarette smoking is clearly a significant health risk and cessation of smoking remains one of the most important measures for disease prevention and health promotion [1]. While many different approaches to cessation have been investigated, and valuable insights gained, there remains a sense of disappointment at the outcomes of efforts to reduce cigarette consumption [2]. In our understanding of psychosocial factors associated with successful reduction, many issues remain problematic, including what messages are effective, what types of smokers are more likely to be successful, and what change strategies are most useful to pursue.

Messages with threatening themes may provide the impetus for smokers to attempt to stop, but it is questionable whether threats are effective for longer-term success. A study of male cardiovascular patients found that smoking cessation following a heart attack was not related to beliefs concerning threat or susceptibility [3]. Strategies that deal with an array of factors need to be explored if the effectiveness of smoking cessation efforts is to improve.

Recently, attention has focused on the roles of self-efficacy, stress, and social support in smoking cessation behavior. Self-efficacy is defined by Bandura [4] as the conviction that one can successfully execute the behavior required to produce a desired outcome. The strength of conviction in one's own effectiveness, Bandura maintains, affects the likelihood of initiating a change in behavior, the amount of effort expended on the change, and the duration of the change. A model incorporating self-efficacy in smoking cessation has been developed by Pechacek and Danaher [5]. In this model, both expectations of outcome (e.g. susceptibility to illness due to smoking) as well as expectations of efficacy are regarded as crucial in order for long-term cessation to occur. Empirical evidence for the role of self-efficacy in smoking cessation is sparse, and largely based on cross-sectional or retrospective data. However, the evidence which does exist suggests that self-efficacy plays a powerful role in smoking cessation. Conditte and Lichtenstein [6] found that self-efficacy increased among successful quitters in a smoking-treatment program, and that post-treatment efficacy expectations were strongly related to 3-month maintenance of cessation. Long-term follow-up of the subjects in this study [7] found this relationship to hold for 6-month maintenance (though not for 1-year maintenance of cessation). Successful long-term quitters have also been found to possess higher levels of self-efficacy than did relapsers [8].

What factors influence expectations of efficacy? Pechacek and Danaher suggest that efficacy expectations are, at least in part, a result of previous smoking cessation efforts. If the smoker continually fails in his or her attempt to quit, expectations of efficacy diminish, until a 'learned helplessness' behavior pattern develops [9]. This behavior pattern is characterized by the smoker who perceives a threat due to smoking, but feels unable to change his or her smoking behavior.

Related to the work of self-efficacy is a psychosocial model developed by Ockene and colleagues [10] which views smoking as a maladaptive coping response to environmental stressors. Based on this model, the smoker's likelihood of quitting on a long-term basis is a function of his or her ability to cope with stressors without the use of cigarettes. Ability to cope is contingent on the presence of 'personal assets' or coping resources other than smoking. Personal assets or resources identified include a perception of personal competence, an internal locus of control, and the availability of 'significant others' for emotional support. Some aspects of this model have been supported in empirical research. Janis and Hoffman [11] found significant long-term cessation among subjects who were assigned a partner (who was also a smoker) to provide support in quitting. A study of recent ex-smokers [12] found that those engaging in any one of a variety of coping behaviors were the most successful in preventing relapse. It seems likely that psychosocial stress or anxiety and social support are linked to expectations of personal efficacy.

This study examines the roles of perceived susceptibility, self-efficacy, anxiety, and social support as they relate to motivation to quit smoking and to subsequent changes in the number of cigarettes smoked among smokers in a health-care setting. The following questions are specifically addressed: (1) are perceived susceptibility and self-efficacy related to changes in the amount of smoking and/or a desire to quit smoking? (2) Are anxiety and social support related to changes in the amount of smoking and/or a desire to quit smoking? Are they associated with perceived susceptibility or self-efficacy? Although the study was designed as a trial to assess interventions by health-care practitioners, it permits the testing of a number of the factors discussed in relation to changes in smoking patterns.

METHODS

Sample and design

Subjects were male inpatients ($n = 125$) and outpatients ($n = 88$) at a Veterans Administration Medical Center (VAMC) who were enrolled in a practitioner-initiated smoking cessation intervention trial. The enrollment procedures differed from those of many other smoking intervention trials in that, rather than enrolling only those who were motivated to answer an advertisement in a paper or a poster or flyer in an office, *all* patients who smoked and who would normally be considered eligible for a smoking-cessation intervention were actively sought for the project. Excluded from

the study were patients who were: terminally ill; unable to read or understand educational materials; in psychiatric ward or clinic program or undergoing treatment for alcohol or drug addiction. Since follow-up interviews were to be conducted by telephone, patients not possessing telephones were also excluded from the study. Based on the number of patients initially approached and on admission records, excluded patients represented roughly 15–20% of all potential patients.

Patients were assigned (by time period) to an intervention group or a 'usual care' control group. All subjects were initially administered a questionnaire assessing number of cigarettes smoked daily as well as characteristics thought to be associated with smoking or smoking cessation behavior. In the questionnaire, patients were asked whether they wished to quit smoking within the calendar year. Those in the intervention group responding 'Yes' or 'Don't Know' to this question were administered the smoking intervention. Patients in the control group, regardless of their answers to this question, received the care usually given to smokers at the VAMC. The number of cigarettes smoked daily was assessed again for both experimental and control groups approx. 3 months following discharge from the VAMC.

The intervention consisted of a minimal-contact smoking cessation program amenable to use in a health-care setting. Three components were basic to the program: consultation from a health practitioner; a self-help smoking cessation kit; and incentives to comply with the self-help kit. While at the VAMC, smokers received consultation related to their smoking from a health provider or student health practitioner. The first series of activities described in the self-help smoking cessation kit (a relaxation exercise, a stop-smoking contract, and the first day of a 3-week smoking diary) was completed with the patient. Patients then took the self-help kit home, where the remainder of the diary was to be followed. Compliance with the smoking diary was reinforced by weekly telephone calls from the practitioner, and by offering the patient a free State lottery ticket for each week of the diary completed [13].

In analyzing relationships between measures derived from the questionnaire, all cases were used; this included 119 patients in the intervention group and 94 patients in the control group. However, when analyzing the relationships between questionnaire measures and 3-month changes in the number of cigarettes smoked, only intervention group patients and control group patients who responded 'Yes' or 'Don't Know' to the question about whether or not they wanted to quit smoking (but did not receive the intervention) were included. Of the 119 patients in the intervention group, 24 (20%) patients reported not wishing to quit smoking within the calendar year (these patients were not offered the intervention). Of 95 remaining patients, 23 (24%) refused the intervention when offered, leaving 72 patients who were offered and who accepted the smoking-cessation intervention. Of the 94 patients in the control group, 20 (21%) patients reported not wishing to quit smoking. Since none of the control patients were offered the intervention, we could not determine (and then exclude from analyses) the number

of patients who would have refused the intervention. Comparisons between the control and intervention groups are therefore biased to the extent that the control group contains some subjects who may not have accepted the intervention once offered whereas the intervention group contains only those who accepted the intervention. Of the 146 inpatients and outpatients used in the longitudinal analyses, 119 patients (82%) were successfully re-contacted 3 months following hospital discharge to determine smoking status.

Measures

The actual questions are presented in the Appendix. Most questions assessing a particular belief or attitude were scored on a 7-point scale. These scales were anchored by endpoints reflecting polar attributes of the belief or attitude. A description of how these measures were constructed is presented below. The numbers in parentheses following each heading correspond to the questions in the Appendix. The range, mean, and standard deviation are also presented for each measure.

Perceived susceptibility of illness due to smoking (Questions 1 and 2). This dimension was assessed by asking the patient: how susceptible he is to future illness if (1) he *continues* to smoke; (2) he *quits* smoking. The difference between these two scores represents susceptibility to future illness as a result of smoking.

Efficacy expectations related to smoking (Questions 3–12). This measure assesses perceived ability to refrain from smoking in ten different situations (e.g. when impatient, when drinking coffee, etc.). The specific situations were taken from a much larger group developed by Best and Hakstain [14]. These items were subjected to a multidimensional scaling procedure by Conditte and Lichtenstein [9], which produced independent factors. Ten items with high loadings representing the factors were in the present study. These factors were then combined to form an index of efficacy expectations under specific situations. An inter-item reliability score (alpha) of 0.80 was obtained for this index.

Anxiety (Questions 13–14). Two items concerning general anxiety were used: one question assessed the amount of tension experienced during the previous 4 weeks, and the other measured the amount of nervousness experienced during the previous 4 weeks. These items were combined to form an index of general stress or anxiety recently experienced. An inter-item reliability score of 0.83 was found for this index.

Social support (Question 15). Each patient was asked how much encouragement from other household members he would expect if he were to attempt to quit smoking. The concept of encouragement traverses key elements of social support (outlined by Kahn and Antonucci [15]), including affective, affirmational, and aid components. Expectations of encouragement from others reflects the quality (as opposed to the quantity) of social support in the smoker's environment.

Desire to quit smoking. Each subject was asked whether, within the calendar year, the subject wanted to quit smoking, did not want to quit, or did not know if he wanted to quit.

Smoking status. Number of cigarettes smoked per day was initially obtained by questionnaire response. Smoking status after 3 months was obtained using a variation of the 'Bogus Pipeline' method [16]. Subjects were first asked when their next VAMC appointment was scheduled. The interviewer then stated that a simple chemical test might be administered during the subject's next visit (future follow-ups using chemical assessment of smoking status are planned for this group of patients). Following this statement, subjects were asked how many cigarettes, on average, they smoked per day. The 3-month follow-up smoking measure was then divided by the initial questionnaire smoking measure to determine percent change in the number of cigarettes smoked. Throughout these assessments, all interviewers had the strong impression that the subjects were nearly always being honest about their cigarette consumption. An effort was made to avoid projecting preferences for any particular answer; subjects were not asked whether they had cut back or quit smoking — only for the number of cigarettes per day that they smoked. It was also felt that: (1) the validity of self-reported smoking behavior would be greater if the subject was asked only about present behavior as opposed to a change in behavior over time; and (2) since patients received only a minimal-contact intervention by a health practitioner, they would feel very little pressure to misrepresent their smoking status.

Analytic approach

The data were analyzed using statistics which made nominal-scaling assumptions on the questionnaire measures. Since many of the relationships discovered required multivariate analysis procedures, the data were first grouped into larger categories and analyzed in contingency-table formats. Bivariate tables were examined using the chi-square statistics; for multivariate tables, the Mantel-Haenszel statistic was employed (the latter procedure addresses the average partial association across subgrouped tables, and was used to confirm interactive relationships and to check for spurious relationships between questionnaire measures). Multivariate analyses on changes in number of cigarettes smoked employed analysis of covariance (ANCOVA).

Several categorizations were constructed for the analyses. 'Perceived susceptibility' was dichotomized, contrasting those perceiving any susceptibility to illness due to smoking with those who did not (49% vs. 51%, respectively). 'Self-efficacy' was dichotomized, contrasting those reporting (on average) a great deal or some difficulty in refraining from smoking in ten different situations versus no difficulty (47% vs. 53%, respectively). 'Anxiety' was dichotomized, contrasting those who, on a 7-point scale (where '1' was low anxiety and '7' was high anxiety), reported 1-4 vs. 5-7 (46% vs. 54%, respectively). 'Social support' was

dichotomized, contrasting those who, on a 7-point scale (where '1' was a low level of encouragement and '7' was a high level of encouragement), reported 1-4 vs. 5-7 (38% vs. 62%, respectively).

RESULTS

Perceived susceptibility and self-efficacy

In examining the effects of perceived susceptibility and self-efficacy as they relate to changes in cigarette consumption, analysis of covariance (ANCOVA) was used with number of cigarettes smoked per day after 3 months as the dependent variable and number of cigarettes initially smoked per day as the covariable. Three independent variables — perceived susceptibility, self-efficacy, and whether or not the subject received the intervention — were tested for their bivariate and interactive effects on changes in number of cigarettes smoked. Results of this analysis are presented in Table I.

The findings indicate a lack of direct influence by either perceived susceptibility or self-efficacy on changes in amount smoked, but the effect of the smoking intervention was highly significant ($P < 0.01$). Among the interactions tested, only the susceptibility-efficacy interaction is significantly ($P < 0.03$) related to changes in amount smoked. This interaction is further explored in Table II, which shows average percent of smoking reduction for high and low levels of self-efficacy by high and low levels of perceived susceptibility. The group exhibiting the highest average smoking reduction is the high susceptibility-high efficacy group. Lowest reduction levels were found in the high susceptibility-low efficacy group. These two groups were markedly different from the two low-susceptibility groups.

To determine how the intervention affected the four interaction groups, the average reduction rates for each cell were stratified by experimental

TABLE I

ANALYSIS OF COVARIANCE TEST FOR EFFECTS OF PERCEIVED SUSCEPTIBILITY, PERCEIVED EFFICACY, AND THE SMOKING CESSATION INTERVENTION ON RATE OF SMOKING AT THREE MONTHS, CONTROLLING FOR INITIAL RATE OF SMOKING

Factors	F	Probability
Perceived susceptibility	0.042	0.832
Perceived efficacy	2.035	0.153
Intervention	11.070	0.002
Susceptibility × efficacy	4.833	0.028
Susceptibility × intervention	1.448	0.230
Efficacy × intervention	0.744	0.395
Susceptibility × efficacy × intervention	0.230	0.638

TABLE II

PERCENT REDUCTION IN SMOKING CONSUMPTION (CONTROL AND INTERVENTION GROUPS COMBINED) BY PERCEIVED EFFICACY AND PERCEIVED SUSCEPTIBILITY

Perceived efficacy	
Low	High
<i>Perceived susceptibility : low</i>	
17.2% (n = 16)	9.4% (n = 31)
<i>Perceived susceptibility : high</i>	
3.0% (n = 32)	28.6% (n = 27)

group, and the results are depicted in Fig. 1. An average increase in smoking consumption is observed for three of the four control groups (probably due to a reduction in smoking while in the hospital when the initial smoking assessment was made and a reversion to normal smoking levels following hospital discharge). For these three interaction categories, the intervention

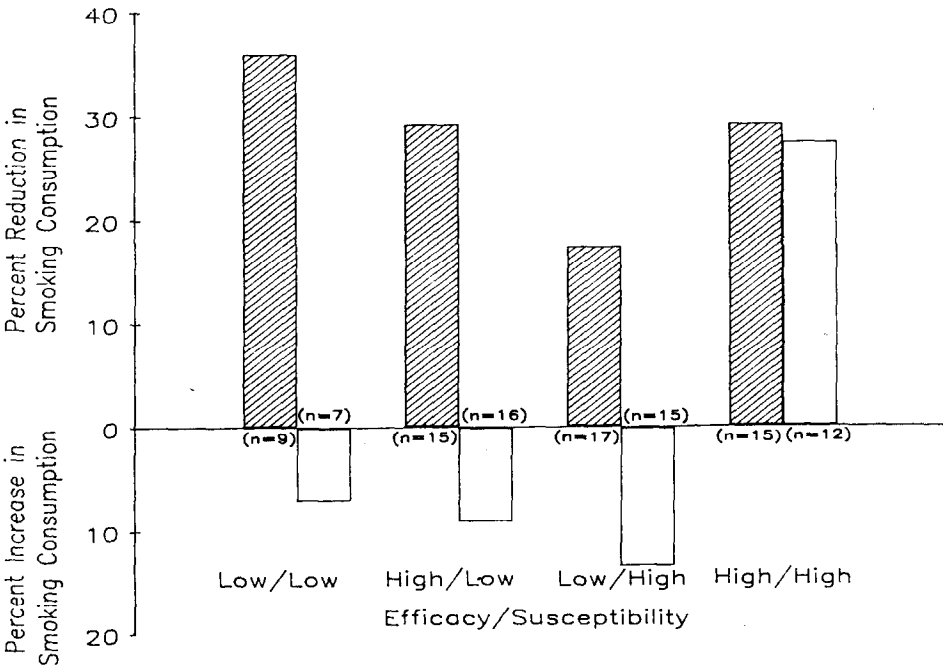


Fig. 1. Percent reduction or increase in smoking consumption for control and intervention groups, by perceived efficacy and perceived susceptibility. ■, intervention group; □, control group.

TABLE III

DESIRE TO QUIT SMOKING BY PERCEIVED ILLNESS DUE TO SMOKING (ROW PERCENTAGES IN PARENTHESES)

Chi-square = 18.84, $P < 0.01$.

Perceived susceptibility	Desire to quit smoking		
	No	Don't know	Yes
Low	33 (33%)	18 (18%)	50 (50%)
High	8 (8%)	18 (19%)	71 (73%)

appears to have an influence on reduction of smoking which was inversely proportional to the rates of increase in smoking consumption found in the control groups. The lowest rate of average smoking reduction in an intervention group was among the high susceptibility-low efficacy group, whose control group exhibited the highest average increase in smoking consumption. Perhaps the most interesting finding occurs in the high susceptibility-high efficacy group, where both the intervention and the control group exhibited a relatively high reduction in smoking consumption. It would seem that this combination of high susceptibility and high efficacy was sufficiently powerful to make the intervention essentially irrelevant.

While perceived susceptibility itself was not related to changes in smoking consumption, it was significantly associated with the desire to quit smoking. Table III presents the distribution of desire to quit by perceived susceptibility. Only 8% of subjects reporting a high perception of susceptibility to illness due to smoking had no desire to quit smoking (vs. 33% for those reporting low susceptibility). Self-efficacy was not associated with desire to quit smoking, nor were self-efficacy and perceived susceptibility directly associated with each other.

TABLE IV

EFFICACY EXPECTATIONS BY ANXIETY, STRATIFIED BY AMOUNT OF ENCOURAGEMENT FROM OTHERS IN HOUSEHOLD

Chi-square = 7.19, $P < 0.01$; Chi-square = 0.17, not significant.

Encouragement	Anxiety	Specific efficacy expectations		
		Low	High	Chi-square
Low	Low	12 (35%)	22 (65%)	7.19
	High	14 (74%)	5 (26%)	
High	Low	24 (51%)	23 (49%)	0.17
	High	22 (47%)	25 (53%)	

TABLE V

DESIRE TO QUIT SMOKING BY PERCEIVED LEVEL OF ENCOURAGEMENT FROM OTHERS (ROW PERCENTAGES IN PARENTHESES)

Chi-square = 13.22, $P < 0.01$.

Perceived level of encouragement	Desire to quit smoking		
	No	Don't know	Yes
Low	21 (33%)	14 (22%)	29 (45%)
High	12 (11%)	23 (21%)	73 (68%)

Anxiety and social support

Neither reported level of anxiety nor social support was directly related to changes in smoking consumption. Anxiety, however, was associated with self-efficacy. Subjects reporting high levels of anxiety had, on average, lower expectations of efficacy in quitting smoking. This anxiety-efficacy relationship was strongly buffered by the level of encouragement in quitting smoking that the subject expected from other household members. Table IV presents self-efficacy by anxiety for low and high levels of encouragement. For low levels of encouragement, a highly-significant association exists — those reporting high anxiety had low expectations of efficacy in quitting smoking. However, for high levels of encouragement, the anxiety-efficacy association virtually disappears. Encouragement alone was not significantly associated with efficacy expectations or with perceived susceptibility, it appears to act solely as a buffer in the anxiety-efficacy association.

Data on the relationship between anticipated encouragement and desire to quit smoking are displayed in Table V. Encouragement was directly and significantly associated with desire to quit. Over three times as many subjects reporting a low expectation of encouragement did not wish to quit smoking as those reporting a high expectation of encouragement.

DISCUSSION

Pechacek and Danaher [5] have proposed a theoretical model stressing the relationship between efficacy expectations and outcome expectations in achieving smoking cessation. Findings from the present study provide support for the roles of both factors in predicting changes in smoking behavior. The interaction between efficacy expectations in quitting smoking and perceived susceptibility to illness due to smoking (an outcome expectation) was significantly predictive of changes in number of cigarettes smoked 3 months following discharge from the hospital where a smoking cessation intervention was received. Subjects reporting both high perceived susceptibility and high expectations of efficacy were far more likely to have reduced

their rate of smoking after 3 months than were the subjects in any of the other susceptibility-efficacy interaction groups. Subjects reporting high perceived susceptibility but low efficacy expectations were least likely to have reduced their smoking. Neither efficacy nor susceptibility were individually related to changes in the number of cigarettes smoked.

In light of these results, the emphasis by many health practitioners on exclusive use of fear-arousing messages to frighten their patients into quitting smoking may be more harmful than effective. If, through fear arousal, the patient's perceived susceptibility to the harmful effects of smoking is heightened — but he does not feel effective in being able to quit — he will likely be moved into what was found to be the least effective response pattern: the condition termed 'learned helplessness'. Indeed, it was into this category that the largest number of our study patients fell. 'Learned helplessness' behavior was readily detectable through informal interviews at the VAMC. One patient, recovering from his second bypass operation (and still smoking two packs of cigarettes per day), said, 'Sure, I'd like to quit. My doctor tells me I'll die if I don't quit — but he doesn't tell me *how* to quit!' This pattern of behavior was widely observed throughout the course of the investigation. In this study, perceived susceptibility to illness due to smoking was highly correlated with desire to quit. This initial motivation can likely be aroused by fear messages; in fact, it is probably the feedback perceived and remembered best by those practitioners who use fear messages. Our results suggest, however, that following a message to increase susceptibility (e.g. a fear-arousing message), a critical period occurs in which now-motivated smokers must be made to feel likely to be able to quit, and be given what he or she considers to be an effective means (e.g. specific advice, set of skills) for quitting.

It is evident that the experimental intervention had an effect on all belief interaction categories except the high susceptibility-high efficacy category. This group demonstrated the highest average percentage of smoking reduction across both experimental and control groups. Apparently, because this 'high-high' group was already motivated to change smoking behavior, and felt likely to be effective in doing so, the intervention could not supply them with anything more than they already possessed.

Analyses were performed to assess the effects of anxiety and social support on smoking outcomes and on perceived susceptibility and self-efficacy. No direct relationships were found between anxiety or social support and changes in the amount smoked. Anxiety, however, was associated with self-efficacy; those with high levels of reported anxiety had, on average, lower levels of self-efficacy. Since these data are cross-sectional, no causal assertions may be made, and there seem to be plausible explanations for either causal direction. Informal interviews with patients, however, lent support to the hypothesis that high anxiety may act to reduce efficacy expectations. Many of the subjects who experienced difficulty in changing their smoking behavior reported a chronic, underlying level of stress or anxiety (often caused by health problems) and manifested in worry, boredom or pain, which generated feelings of helplessness with regard to being

able to alter their smoking behavior. Others reported sudden stressful life events (e.g. death of a loved one, a child running away from home, onset of a health problem) in response to which they felt powerless at that time to change their behavior.

Further analyses revealed that 'social support' exerted a buffering effect on the anxiety-efficacy association (the investigators felt that 'perception of the amount of anticipated encouragement received from others during the attempt to quit smoking' would roughly traverse many of the key elements of social support discussed in theory [15]). For those reporting a low level of expected encouragement, the anxiety-efficacy association was very strong; among those reporting a high level of encouragement from others the relationship was virtually non-existent. In addition, encouragement from others was associated with desire to quit smoking; those reporting a high level of encouragement also reported a stronger desire to quit.

The practitioner may therefore be able to effectively involve supportive friends or relatives in the cessation counseling process, since positive encouragement from family and friends to quit smoking may enhance the patient's motivation to quit. Support from others may also buffer the effects of stressful life events or situations which can destroy the patient's confidence in his or her ability to quit.

In summary, the practitioner (who is in a position to influence a great number of patients who smoke) may be able to adopt optimal consultation styles based upon the particular psychological state of the patient. A few questions probing the patient's perceptions of susceptibility, self-efficacy, anxiety and anticipated social support should provide useful information in developing a tailored intervention strategy. For example, patients who do not feel personally susceptible to the harmful consequences of smoking, or who do not understand the benefits of quitting, may become motivated to attempt to stop smoking through simple, brief, informative counseling by the practitioner. Those who feel susceptible but not effective in quitting may benefit from verbal reinforcement from the practitioner as well as from being given a simple means to quit (such as a self-help program, or referral to a smoking-cessation program). Enlisting socially-supportive friends or relatives in encouraging the patient to quit and in assisting the patient through the difficult periods of smoking cessation should also produce positive outcomes.

Our findings are based on a population characterized by somewhat lower levels of education and income and higher levels of illness and psychosocial stress than observed in the general population. Extrapolations to the population must, therefore, be made cautiously. However, the constructs being measured are general psychological attributes of most people — not unique attributes of the VAMC population. This study is currently being replicated with different populations, using more expansive psychosocial measures gathered at multiple points in time, and with longer-term follow-ups of smoking status; hopefully this continuing research will add to our ability to construct effective counseling strategies.

APPENDIX I: SELECTED QUESTIONNAIRE ITEMS

	Range	Mean	S.D.
1. Now, I would like to know how likely you think it would be that you would have severe health problems within the next 5 years if you <i>continue</i> to smoke cigarettes. On a scale of 1–7, where 1 is not likely at all and 7 is very likely, if you continue to smoke cigarettes, how likely do you think it is that you will have severe health problems within the next 5 years?	1–7	4.5	2.1
2. Now, I would like to know how likely you think it would be that you would have severe health problems within the next 5 years if you were to <i>quit</i> smoking cigarettes. On a scale of 1–7, where 1 is not likely at all and 7 is very likely, if you were to quit smoking cigarettes, how likely do you think it is that you will have severe health problems within the next 5 years? Each smoker has particular times or situations where the craving to light up a cigarette is stronger than during other situations. Please tell me whether you would have, in each situation, no difficulty resisting the urge to smoke (1), some difficulty resisting the urge to smoke (2), or a great deal of difficulty resisting the urge to smoke (3). How about when you —	1–7	3.4	1.9
3. are feeling impatient?	1–3	2.3	0.8
4. are feeling frustrated?	1–3	2.3	0.8
5. are worried?	1–3	2.4	0.8
6. want to cheer up?	1–3	1.4	0.7
7. need more energy?	1–3	1.3	0.6
8. are bored?	1–3	2.4	0.8
9. are offered a cigarette?	1–3	1.7	0.8
10. are drinking coffee?	1–3	2.5	0.8
11. are drinking alcohol?	1–3	2.5	0.8
12. are feeling uncomfortable?	1–3	2.0	0.9
13. Now, I would like to know how much of the time, during the past 4 weeks, have you felt tense or 'high strung'. Of 1–7, where 7 is all of the time and 1 is none of the time, how much of the time, during the last 4 weeks, have you felt tense or 'high strung?'	1–7	4.4	1.9
14. Now, I would like to know how much of the time, during the past 4 weeks, have you been a very nervous person. On a scale of 1–7, where 7 is all of the time and 1 is none of the time, during the last 4 weeks, have you been a very nervous person?	1–7	4.2	2.1
15. Now, I would like you to think about how much encouragement in quitting smoking you			

would get from the other members of your household. On a scale of 1-7, where 7 is a lot of encouragement and 1 is no encouragement at all, how much encouragement in quitting smoking to you think you would get from other members of your household?

1-7 4.9 2.4

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