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January 2006

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Short communication

## General and smoking cessation related weight concerns in veterans

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### Abstract

This study sought to assess general and cessation related weight concerns in Veterans presenting for QuitSmart™, a tobacco cessation program used extensively in the Veteran Affairs system. Assessed were prevalence rates of cessation related weight concerns, the weight at which concerned Veterans would relapse to smoking, characteristics of weight concerned Veterans, and the impact of weight concerns on cessation at the program's end and at the 1-month follow-up. Sixty-seven Veterans participated. Of those, 63 were eligible for cessation analyses. Results suggested that 26.9% were concerned about post-cessation weight gain, the mean and median weights tolerated before relapse were in the 10–12 lb range, and weight concerned Veterans were more likely younger with more general weight concerns. At both time points, Veterans with general weight concerns were much more likely to quit smoking than those without such concerns. At neither time point, were post-cessation weight concerns significantly associated with quit status, though specific concerns remained in predictive models and trends suggested those with cessation related weight concerns were less likely to quit smoking than those without such concerns. Results suggest a significant prevalence rate of general and cessation related weight concerns in Veterans attempting to quit smoking, greater success in doing so if weight concerns are general in nature, and the need to continue to assess these relationships and develop effective cessation treatments for this population.

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*Keywords:* Tobacco use; Body weight; Smoking cessation

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## 1. Introduction

Many cross sectional studies have reported that specific weight concerns about smoking cessation deter cessation (Klesges et al., 1988; Ogden & Fox, 1994; Weekley, Klesges, & Relyea, 1992), and one recent study suggests that motivation to quit smoking was significantly lower in those with post-cessation weight concerns (Clark et al., 2004). Additionally, some prospective studies have found that cessation related weight concerns are associated with reduced cessation success (Meyers et al., 1997). Others have reported that cessation related weight concerns are not associated with cessation (French, Jeffery, Klesges, & Forster, 1995; French, Jeffery, Pirie & McBride, 1992; Jeffery, Boles, Strycker & Glasgow, 1997). Studies have also found that weight concerns *not* specific to smoking cessation predict higher cessation rates (French et al., 1992, 1995). Given these inconsistencies and the lack of information about smoking cessation related weight concerns in the Veteran population, a high smoking prevalence, largely male group, this study sought to explore cessation related and general weight concerns in Veterans presenting for smoking cessation.

## 2. Method

### 2.1. Participants

Participants were 67 Veterans presenting for the Quitsmart™ smoking cessation orientation. Ninety-five percent were male; 86% were Caucasian; 54% acknowledged general weight concerns; the average age was 52.6 years (SD=11.3); the average baseline weight was 187.4 (SD=36.4); the average number of cigarettes smoked was 25 (SD=12.7); and the average number of past quit attempts was 3.6 (SD=3.3).

### 2.2. Measures

#### 2.2.1. Smoking status

Self-report of smoking was verified by carbon monoxide level (CO) at orientation and post-program. Smoking status was self-reported at the 1-month follow-up. In addition, participants self-reported demographics, number of cigarettes smoked daily, and number of past quit attempts.

#### 2.2.2. Weight and weight concerns

Participants' weights were taken in clothing, but without shoes or heavy garments, at orientation. Weight was recorded as absolute weight in pounds with a Detecto Electronics Scale accurate to  $\pm 2$  oz. Participants were asked a series of 10 questions concerning the weight gain they would tolerate before relapse to smoking, from 0–2 lb to 20 or more pounds in 2 lb increments. Veterans who responded “yes” to intending to relapse at any weight were considered post-cessation weight concerned. Participants were considered to have general weight concerns if they self-reported them on the questionnaire.

### 2.3. Procedure

During the Quitsmart™ orientation session, those who agreed to participate signed a consent form, completed the survey, and were weighed. Some participants ( $n=43$ ) then completed the smoking

cessation program. Those participants who did not participate in the program and those who were missing quit status data at either time point were considered smokers in this study, indicating intention to treat analyses. Non-completers and completers did not differ significantly on any variable collected in this study except gender. Females were more likely than males to not join the program or be lost to follow-up ( $\chi^2(1)=6.88, p<.05$ ).

### 3. Results

Of the 67 participants, 27% indicated post-cessation weight concerns. Both the mean and median ranges of weight at which Veterans indicated relapse to smoking would occur were 10–12 lb. Findings suggest that those with cessation related weight concerns were younger ( $p<.05$ ) and more likely to report general weight concerns ( $p<.001$ ).

At post-program and the 1-month follow-up, the best fitting logistic regression models included both general and cessation related weight concerns; however, only general weight concerns were significantly predictive of quit status. At post-program, veterans with general weight concerns were 5.4 times more likely to quit smoking than those without such concerns ( $p=.011$ ), and at the 1-month follow-up, such veterans were 4.3 times more likely to quit smoking ( $p=.027$ ). Cessation related weight concern findings were not significant, but trends suggested cessation related weight concerns indicated a reduced likelihood to quit smoking (post-program  $p=.076$ ; 1-month follow-up  $p=.143$ ).

### 4. Discussion

These results suggest a higher prevalence of smoking cessation related weight concerns in Veterans than in males in previous studies; however, this finding is consistent with a recent study of male smokers' post-cessation weight concerns (Clark et al., 2004). The mean and median weights of 10–12 lb to intend to relapse to smoking is consistent with results from studies of actual post-cessation weight gain (e.g., Nides et al., 1994; Klesges et al., 1997).

The finding that those Veterans with general weight concerns are much more likely to quit smoking than those who do not have such concerns is consistent with other studies (French et al., 1992, 1995). This study did not assess constructs such as dieting and body image, thus further study of this finding and the motivation underlying it are needed to clarify the relationship.

Veterans with cessation related weight concerns were not significantly less likely to quit smoking than those who did not have such concerns, though the trend was in that direction. Three considerations are noteworthy: 1) the current sample was small and power was limited; 2) studies that have confirmed the negative relationship between cessation related concerns and smoking cessation have typically done so with predominantly female samples of weight concerned participants (Meyers et al., 1997); and 3) it may be the relationship between cessation specific weight concerns and cessation is a weak one.

Though this study has many strengths, some limitations are noteworthy: 1) the sample included here was small, predominantly Caucasian, and predominantly male; 2) though Veterans were followed up after 1 month, a longer follow-up period with verification of follow-up quit status would strengthen future studies; and 3) participants' weights were not measured after baseline.

These findings taken together suggest that future more appropriately powered studies be performed in the veteran population assessing both cessation related and general weight concerns, and interventions designed to reduce actual post-cessation weight gain in this population should recognize the 10–12 lb threshold in setting goals for weight suppression.

## Acknowledgments

The authors would like to thank the staff of the Veterans Affairs Western New York Healthcare System for their assistance in the completion of this study, with special acknowledgements of Timothy Parish for his assistance.

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