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Reasons for Quitting Smoking Prior to a Self-Quit Attempt among Smokers with and without Posttraumatic Stress Disorder or Other Anxiety/Mood Psychopathology

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Abstract

The present investigation examined intrinsic and extrinsic reasons for quitting among daily cigarette smokers with posttraumatic stress disorder (PTSD) as compared to clinical daily smokers with other anxiety and mood disorders (AM) and daily smokers with no current axis I psychopathology (C) prior to a self-guided quit attempt. It was hypothesized that (1) the PTSD group would report greater intrinsic (i.e., self-control and health concerns) reasons for quitting smoking, and (2) among those with PTSD, anxiety sensitivity (fear of anxiety; AS) would predict greater intrinsic reasons for quitting smoking. Participants were 143 (58.7% female; M_{age} = 29.66 years, *SD* = 11.88) daily cigarette smokers. Partially consistent with prediction, the PTSD group reported significantly greater self-control intrinsic reasons for quitting, but not health concern intrinsic reasons, than the C group (p <.01). The PTSD group also reported greater immediate reinforcement extrinsic reasons for quitting than the C group (p <.05). The PTSD and AM groups did not significantly differ on any reasons for quitting. Also partially consistent with hypotheses, higher levels of anxiety sensitivity in daily smokers with axis I psychopathology (both PTSD and AM groups) significantly predicted greater self-control intrinsic reasons for quitting. AS did not significantly predict immediate reinforcement extrinsic reasons for quitting. The current findings suggest that individuals with PTSD and other psychopathology may have unique motivations for quitting smoking that could be usefully explored within smoking cessation treatment programs.

Keywords

PTSD; Smoking; Reasons for Quitting; Anxiety Sensitivity

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There are several lines of empirical work that suggest clinically significant linkages between smoking and PTSD. First, both lifetime and current smoking rates are significantly higher among persons with PTSD compared to persons without this disorder (1,2,3,4,5). In addition, smokers with PTSD, compared to those without the disorder, smoke more cigarettes per day and are more dependent on nicotine (6,7,8,9,10,11). Persons who develop PTSD after exposure to a traumatic event also report increased smoking rate as compared to trauma-exposed individuals who do not develop PTSD (12,13,14). Indeed, smokers with PTSD, compared to those without the disorder, are more likely to report smoking for tension reduction, addictive, and negative affect reduction purposes (2,7,15) and to endorse greater affective dysregulation and increased smoking behavior following exposure to traumatic event stimuli (16,17,18). Finally, current and lifetime quit rates have been found to be significantly lower among individuals with PTSD compared with no psychopathology (4,5,15,19).

One notable area of neglect in PTSD and smoking research to date pertains to reasons for quitting among those with the disorder. Broadly, research on reasons why people quit smoking indicates that there are both intrinsic (internal factors) and extrinsic (external factors) dimensions of motivation for such behavior change (20,21). Intrinsic motivations include factors such as the desire to increase one's self control over their behaviors, as well as the drive to change one's habits due to health-related concerns (20,21). Extrinsic motivations include factors such as the desire to respond to social pressures to quit smoking, and the desire to quit smoking for immediate short-term gains, such as saving money previously spent on cigarettes. Past work on motivations to quit smoking suggests that intrinsic motivation is predictive of more successful quit attempts (20,21). Exploring possible linkages between a PTSD diagnosis and reasons for quitting smoking has the potential to inform smoking cessation treatment efforts for individuals with PTSD (4,5,15,19) via empirically-supported integration of cognitive-behavioral strategies designed to target cessation-relevant motivations for change (22).

Given that individuals with PTSD, as compared to nonclinical controls, often report a greater motivation to smoke for affect reduction and addictive motivational reasons (15), such individuals may tend to regard continued smoking as a failure of their ability to internally self-regulate negative affective and addictive states. These individuals may therefore be particularly apt to desire to quit smoking in order to gain more self-control over their affect regulatory processes and addictive behavior (intrinsic motivational factors). In addition, given that individuals with PTSD report expecting more severe negative health-related consequences as a function of their smoking (15), it may be the case that such individuals also desire to quit smoking for health-related reasons (intrinsic motivation) compared to other segments of the smoking population. Both of these predictions are informed by the theoretical and empirical recognition that persons with PTSD often fear aversive internal states (anxiety sensitivity [AS]) and utilize substance use as a means to regulate their cognitive-affective experiences (23). However, given that there have also been established associations between other anxiety and mood disorders and smoking-related outcomes (e.g., 5,24), it is important to investigate relations between PTSD and reasons for quitting smoking within the context of other types of psychopathology. In other words, it is important to investigate whether PTSD, or anxiety and mood psychopathology more generally, is related to specific motivations to quit.

The aim of the current study was to examine reasons for quitting smoking among individuals with PTSD, as compared to clinical (i.e., non-PTSD anxiety and mood disorders) and nonclinical (i.e., no current axis I psychopathology) daily smokers prior to a self-guided quit attempt. It was hypothesized that individuals with PTSD would report higher motivation to quit smoking for intrinsic (i.e., self-control, health concerns)--but not extrinsic (i.e., immediate reinforcement, social pressure)--reasons, as compared to the clinical and nonclinical daily smoking comparison groups. A secondary aim was to examine, among individuals with PTSD,

if anxiety sensitivity (AS; fear of anxiety and related sensations; 23), in the context of other theoretically-relevant variables (i.e., concurrent substance use, negative affectivity, and discomfort intolerance) is related to self-control reasons for quitting. The second hypothesis was restricted to the PTSD group to identify what factors within such high-risk individuals are related to motivations to quit. It was expected that AS would be a significant and unique predictor of self-control reasons for quitting. This hypothesis is based in research suggesting that individuals who fear their internal states (higher levels of AS) often are motivated to smoke to regulate internal states, such as negative mood and health-related fears (25,26). The data for the current study were collected as part of a larger investigation, but have not been examined previously.

Method

Participants

Participants were recruited from the greater Burlington, Vermont community, for participation in a 'self-quit' smoking cessation study (i.e., no formal treatment for smoking cessation of any type was offered). For inclusion in the study, participants were required to: (1) meet current primary diagnostic criteria for PTSD, a non-PTSD anxiety/mood disorder, or no current (past 6 months) axis I psychopathology; (2) be between 18 and 65 years of age; (3) have been a regular daily smoker for at least one year; (4) be currently smoking an average of at least 10 cigarettes per day; (5) report motivation to quit of at least 5 on a 10-point Likert-style scale (0 = *no motivation to quit*; 10 = *extreme motivation to quit*); (6) express interest in making a serious self-quit attempt in the next month; and (7) not have decreased the number of cigarettes smoked by more than half in the past six months. Exclusionary criteria for the investigation included: (1) limited mental competency or the inability to provide informed, written consent; (2) current suicidal or homicidal ideation; (3) current or past history of psychotic-spectrum symptoms or disorders; (4) current major medical problems (e.g., heart disease, cancer); (5) current use of nicotine replacement therapy; (6) current use of tobacco products other than cigarettes (e.g., cigars, chewing tobacco); (7) current substance dependence (other than nicotine); and (8) pregnancy (women only).

Measures

Anxiety Disorders Interview Schedule for DSM-IV: Client Interview Schedule (ADIS-IV; 27)—The ADIS-IV is a semi-structured diagnostic tool used to assess DSM-IV Axis I psychiatric disorders. Reliability of this measure has shown good to excellent inter-rater agreement for the majority of anxiety and mood disorders, including PTSD, among participants who were given two independent administrations of the ADIS-IV (28). Blanchard, Gerardi, Kolb, and Barlow (29), for example, found excellent sensitivity (1.0) and specificity (.91) for this instrument in regard to PTSD. The presence of current (i.e., past month) axis I psychopathology was assessed by a trained interviewer using the ADIS-IV in the present study. Reliability ratings by an independent rater (MJZ) were completed on a random selection of 20% of the protocols, with no cases of disagreement being noted.

Reasons for Quitting Scale (RFQ; 30)—The RFQ is composed of 20 self-report items and measures intrinsic and extrinsic motivation for quitting smoking. The RFQ consists of 2 intrinsic motivation subscales, self-control (e.g., "To show myself I can quit if I really want to") and health concerns (e.g., "Because I'm concerned that smoking will shorten my life"), and 2 extrinsic motivation subscales, immediate reinforcement (e.g., "To save money that I spend on cigarettes") and social pressure (e.g., "Because someone has given me an ultimatum to quit"). The RFQ has demonstrated good psychometric properties (31).

Smoking History Questionnaire (SHQ; 32)—The SHQ is a self-report questionnaire used to assess smoking history and pattern. The SHQ includes items pertaining to smoking rate, age of onset of smoking initiation, and years of being a daily smoker.

Fagerström Test for Nicotine Dependence (FTND; 33)—The FTND is a 6-item scale designed to assess gradations in tobacco dependence (33). The FTND has shown good psychometric properties (33,34,35).

Alcohol Use Disorders Identification Test (AUDIT; 36)—The AUDIT is a 10-item self-report screening measure developed by the World Health Organization that indexes quantity/frequency of alcohol use and alcohol problems (36). There is a large body of literature attesting to the validity of the AUDIT (37). The current study utilized an alcohol consumption index (i.e., quantity by frequency).

Anxiety Sensitivity Index (ASI; 38)—The ASI is a 16-item measure on which respondents indicate, on a 5-point Likert-type scale (0 = *"very little"* to 4 = *"very much"*), the degree to which they are concerned about possible negative consequences of anxiety symptoms (e.g. *"It scares me when I feel shaky"*).

Discomfort Intolerance Scale (DIS; 39)—The DIS is a 5-item self-report measure on which individuals rate the degree to which they can tolerate uncomfortable physical sensations on a scale from 0 (*not at all*) to 6 (*extremely*). The DIS evidences good convergent and discriminant validity (39).

Positive Affect Negative Affect Scale (PANAS; 40)—The PANAS is a 20-item measure on which respondents indicate, on a 5-point Likert-type scale (1 = *very slightly or not at all* to 5 = *extremely*), the extent to which they generally feel different feelings and emotions (e.g., "*Hostile*"). Only the negative affectivity subscale (PANAS-NA) was utilized in the current study.

Procedure

Participants were recruited from the greater Burlington, VT community to participate in a paid research study wherein they would make a self-quit attempt. Participants were recruited on the basis of meeting criteria for PTSD, AM, or no psychopathology (C). PTSD was specifically over-sampled. Data for the current investigation were gathered at the baseline appointment, before the smoking cessation portion of the study in which participants made a self-guided quit attempt. During the baseline appointment, participants (1) first provided verbal and written informed consent, (2) completed a medical screen, (3) underwent a diagnostic evaluation (ADIS-IV) by a trained interviewer in order to determine inclusionary status and Axis I diagnoses, and (4) completed an initial battery of self-report assessments, including those used in the present investigation. All participants received $25 for completion of the baseline assessment session.

Data Analytic Plan

One-way analyses of variance (ANOVAs) were conducted to test for group differences in participant characteristics. One-way ANOVAs were then conducted to test the hypothesis that the PTSD group would report greater intrinsic reasons for quitting smoking (RFQ) compared to the AM and C groups. The criterion variables were the RFQ subscales of health concerns, self-control, immediate reinforcement, and social pressure. Partial eta squared estimates were obtained as indices of effect size for significant group differences. *Post hoc* Tukey HSD comparison tests were conducted to assess differences among each of the four diagnostic categories.

Hierarchical multiple regression analyses were subsequently conducted for RFQ subscales within the PTSD group. Specifically, the theoretically relevant covariates of alcohol consumption and smoking rate were entered at level one of the model, and the emotion vulnerability variables of discomfort intolerance (DIS total), negative affectivity (PANAS-NA), and anxiety sensitivity (ASI total) were entered at level two. The criterion variables were the RFQ subscales of interest.

Results

Participant Characteristics

Participants were 143 regular (daily) smokers (58.7% female; M_{age} = 29.66, *SD* = 11.88). The racial distribution of the sample generally reflected that of the state of Vermont (41), with 92.3% of participants identifying as white/Caucasian. Participants were daily smokers who reported smoking a mean of 16.70 cigarettes per day (*SD* = 8.66) and having smoked regularly for approximately 12.18 years (*SD* = 10.30). Participants reported having made an average of 2.85 lifetime serious quit attempts (*SD* = 2.43). Participants scored a mean of 3.16 (*SD*=1.83) on the Fagerström Test for Nicotine Dependence (FTND; 33), indicating low levels of nicotine dependence. Participants scored a mean of 8.69 (*SD* = 7.82) on the Alcohol Use Disorders Identification Test (AUDIT; 36), indicating moderate alcohol problems.

Of the 143 participants, approximately 35.7% (*n* = 51) had a current primary axis I diagnosis of PTSD, 22.4% (*n* = 32) had a current primary diagnosis of an anxiety or mood disorder other than PTSD (AM), and 42.0% (*n* = 60) did not meet criteria for any current axis I psychopathology (C). Participants in the PTSD and AM groups met criteria for a mean of 2.42 (*SD* = 1.03) axis I disorders. The PTSD and AM groups differed on mean number of diagnoses ($p < .001$), such that the PTSD group met criteria for.65 more diagnoses, on average. The diagnostic groups did not differ on smoking rate, nicotine dependence, or alcohol problems (*p*'s >.05). The PTSD group differed significantly from the C group on gender and age (*p*'s <.05). Specifically, the PTSD group had a greater percentage of women than the C group (76.5% and 46.7% women, respectively), and were older than the C group (M_{age} = 32.6 and 27.3, respectively). (Note: Gender and age were not significantly related to the outcome variables of interest (*p*'s >.05); therefore, they were not included as covariates in the analyses.) See Table 1 for a summary of group differences.

Primary Data Analyses

The primary hypothesis was that individuals with PTSD would evidence greater intrinsic (i.e., self-control and health concern) reasons for quitting than the AM or C groups. Please see Table 1 for a summary of group differences. A one-way analysis of variance (ANOVA) revealed significant group differences for self-control (intrinsic) reasons for quitting ($F = 4.76$, $p = .01$, $h^2 = .06$) and immediate reinforcement (extrinsic) reasons for quitting ($F = 3.50$, $p < .05$, $h^2 = .05$)[1]. No other significant effects were evident. Post-hoc tests revealed that the PTSD group reported significantly greater self-control reasons for quitting than the C group ($p < .01$). The PTSD group also reported significantly greater immediate reinforcement reasons for quitting than the C group ($p < .05$). The PTSD and AM groups did not significantly differ on any reasons for quitting.

Two linear multiple regressions were then conducted to test the hypothesis that ASI scores, evaluated concurrently in the context of DIS and NA, and above and beyond the variance

[1]A one-way analysis of variance (ANOVA) was also conducted combining the PTSD and AM groups. In other words, a comparison was made between clinical and nonclinical participants. The clinical group evidenced greater self-control reasons for quitting; however, the effect size was smaller when the groups were combined ($h^2 = .04$). No other significant differences were detected. Please contact Dr. Michael Zvolensky for complete output from this analysis.

explained by smoking rate and alcohol consumption, would predict self-control and immediate reinforcement reasons for quitting smoking among individuals with psychopathology (i.e., the only reasons for quitting smoking subscale wherein significant effects were evident). Given that the PTSD and AM groups did not differ from one another, they were combined in order to increase the sample size. In both models, smoking rate (average number of cigarettes smoked per day) and alcohol consumption (quantity by frequency) were entered in level one; and ASI, DIS, and NA were entered simultaneously in level two of the regression analyses. Please see Table 2 for regression output.

The proposed model significantly predicted 27.5% of variance in self-control reasons for quitting ($F(5, 71) = 5.01$, $p < .001$). Level one of the model predicted a significant 11.8% of variance, with smoking rate being the only significant predictor at that level ($t = 2.61$, $\beta = .30$, $p < .05$). Level two predicted an additional 15.7% of variance, with AS being the only significant predictor at that level ($t = 2.88$, $\beta = .38$, $p < .01$).

The model significantly predicted 15.6% of variance in immediate reinforcement reasons for quitting ($F(5, 71) = 2.45$, $p < .05$). Level one predicted a significant 9.8% of variance, with smoking rate being the only significant predictor at that level ($t = 2.30$, $\beta = .27$, $p < .05$). Level two of the model did not account for significant variance ($p > .05$).

Discussion

The primary aim of the present investigation focused on evaluating differences in self-reported motivations for smoking cessation among individuals with PTSD, individuals with other anxiety and mood disorders (AM), and individuals without current axis I psychopathology (C). Partially consistent with hypotheses, the PTSD group reported greater self-control reasons for smoking cessation than the C group; but no differences between the PTSD and AM groups were noted. These findings are consistent with past work documenting higher rates of smoking and greater problems quitting among clinical samples, generally, and PTSD samples, specifically, as compared to nonclinical populations (e.g., 4,5,15,19). This work contributes to a body of theory and research indicating that individuals suffering from psychopathology generally might be more inclined to smoke for affect regulatory purposes, and therefore, be motivated to quit smoking in order to gain more self-control over their emotion regulatory processes (15,22). This type of finding highlights the importance of psychopathology, broadly conceived, in regard to reasons for quitting and smoking-based self regulation.

Inconsistent with hypotheses, no significant group differences were found in terms of health concerns reasons for quitting. All participants in the current study were medically screened to exclude those with current major medical ailments. This sampling strategy might have attenuated potential effects for health concerns reasons for quitting. Future work utilizing more inclusive recruitment methodologies is necessary to replicate and extend the current findings before any definitive conclusions can be made. Furthermore, the PTSD group reported greater immediate reinforcement reasons for quitting than the C group, but no differences between the PTSD and AM groups were noted. Further efforts to replicate and extend this finding would be helpful in elucidating this unexpected result.

It also is noteworthy that AS incrementally predicted greater self-control reasons for quitting smoking among individuals with psychopathology (i.e., both the PTSD and AM groups). This finding is consistent with past work suggesting that individuals who fear their internal states are more likely to smoke as a form of affect management (25,26). It is possible that such individuals are similarly motivated to quit smoking as a means of attempting to gain self-efficacy in managing their affective states. Future work investigating cognitive-affective variables in relation to smoking processes among individuals with psychopathology might

benefit from examining similarities and differences between diagnostic groups. For example, individuals with PTSD and other types of psychopathology, such as panic disorder, may exhibit similar levels of AS, which may partially explain a lack of differences between these groups on certain smoking variables (e.g., reasons for quitting smoking).

Several methodological limitations are worthy of note in interpreting the results. First, participants were relatively homogeneous in terms of race/ethnicity, and future studies might benefit by sampling from more diverse populations so as to increase the generalizability of the findings. Second, the study methodology relied heavily on self-report indices of all variables of interest, contributing to method variance. It might be important for future work to replicate and extend these findings by utilizing ecological momentary assessments, for example, to prospectively index smoking behavior and motivations for cessation. Third, although this study provided an examination of reasons for quitting among individuals with PTSD, future work might extend this line of inquiry by more specifically examining how symptoms of posttraumatic stress might affect smoking maintenance and cessation processes. Similarly, it may be important to consider the role of other cognitive and emotion vulnerability variables in relation to self-control reasons for quitting. Fourth, participants in the PTSD group met criteria for comorbid anxiety and mood disorders. While such comorbidity is representative of the majority of individuals with a PTSD diagnosis (42), future work might benefit from a relatively more “pure” test of differences in reasons for quitting by investigating a PTSD group without comorbid anxiety and mood disorders. Fifth, we employed an empirically-derived measure of motivations for quitting smoking. We did not, however, examine the possibility that specific groups (e.g., those with and without certain anxiety disorders) vary in the type of reasons for quitting per se due to limited numbers of persons across distinct anxiety disorders. This type of question may be fruitful to examine in future research. Finally, the current sample reported relatively low levels of nicotine dependence; replication in more dependent samples might be useful.

In sum, the present investigation provides unique empirical data aimed at further understanding intrinsic and extrinsic smoking cessation motivational factors among daily smokers with PTSD and other co-morbid psychopathology. Findings suggest that self-control and immediate reinforcement motives for quitting may be more relevant for smokers with axis I psychopathology versus those without any axis I psychopathology and that AS may be one key factor in such relations.

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Table 1

Group Differences on Descriptives and Reasons for Quitting Smoking

Variable	*F* value	Effect Size (h^2)	Mean (*SD*) or %	Observed Range	Significant Group Differences
Gender (% women)	5.63*	.07	58.7%		PTSD > C*
C			46.7%		
AM			53.1%		
PTSD			76.5%		
Age	2.89	.04	29.66 (11.88)	18 – 65	PTSD > C†
C			27.27 (10.87)	18 – 65	
AM			29.42 (11.97)	18 – 59	
PTSD			32.63 (12.51)	18 – 61	
# Psychiatric Diagnoses[a]	6.84†	.08	2.42 (1.03)	1 – 5	PTSD > AM†
AM			2.00 (.85)	1 – 3	
PTSD			2.65 (1.07)	1 – 5	
Cigarettes per Day	1.98	.03	16.70 (8.66)	4 – 70	
C			15.02 (6.54)	4 – 40	
AM			17.97 (12.01)	7 – 70	
PTSD			17.84 (8.03)	8 – 50	
FTND Total	2.06	.03	3.16 (1.83)	0 – 8	
C			2.83 (1.50)	0 – 5	
AM			3.19 (1.97)	0 – 8	
PTSD			3.53 (1.99)	0 – 7	
Years as a Regular Smoker	1.93	.03	12.18 (10.30)	1 – 45	
C			10.53 (9.08)	2 – 36	
AM			12.27 (11.63)	1 – 40	
PTSD			14.41 (10.88)	1 – 45	
# Serious Quit Attempts	3.27†	.05	2.85 (2.43)	0 – 10	PTSD > C†
C			2.32 (2.24)	0 – 10	
AM			2.81 (2.09)	0 – 9	
PTSD			3.49 (2.72)	0 – 9	
AUDIT Total	1.56	.02	8.69 (7.82)	0 – 30	
C			7.33 (5.70)	0 – 24	
AM			9.91 (8.06)	0 – 30	

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Variable	*F* value	Effect Size (h^2)	Mean (*SD*) or %	Observed Range	Significant Group Differences
PTSD			9.39 (9.50)	0 – 29	
RFQ – Health Concerns[b]	2.71	.04	2.95 (.78)	1.0 – 4.0	
C			2.80 (.74)	1.0 – 4.0	
AM			2.91 (.81)	1.0 – 4.0	
PTSD			3.14 (.77)	1.0 – 4.0	
RFQ – Self-Control	4.76*	.06	2.98 (.79)	1.0 – 4.0	PTSD > C*
C			2.79 (.76)	1.4 – 4.0	
AM			2.92 (.88)	1.0 – 4.0	
PTSD			3.24 (.70)	1.0 – 4.0	
RFQ – Immediate Reinforcement	3.50†	.05	2.73 (.74)	1.0 – 4.0	PTSD > C†
C			2.61 (.73)	1.0 – 4.0	
AM			2.63 (.78)	1.4 – 4.0	
PTSD			2.95 (.69)	1.2 – 4.0	
RFQ – Social Influence	.34	.01	1.70 (.67)	1.0 – 4.0	
C			1.67 (.69)	1.0 – 3.6	
AM			1.78 (.72)	1.0 – 4.0	
PTSD			1.67 (.62)	1.0 – 3.4	

Note:

† $p < .05$;

* $p < .01$;

** $p < .001$;

[a] Psychiatric groups only; FTND: Fagerström Test for Nicotine Dependence (33); AUDIT: Alcohol Use Disorders Identification Test (36); RFQ: Reasons for Quitting Smoking (30);

[b] RFQ subscales consist of a mean score of five items each, rated from 1 (not at all true) to 4 (extremely true).

Table 2

Hierarchical Regression Analyses: Self-Control Reasons for Quitting[a]

	F	ΔR^2	t	β	sr^2	p
Self-Control Reasons for Quitting	5.01					<.01
Level 1		.12				<.05
Cigs/Day			2.61	.30	.09	<.05
Alcohol			−.97	−.11	.01	ns
Level 2		.16				<.01
ASI			2.88	.38	.09	<.01
DIS			.56	.07	.00	ns
NA			−.39	−.05	.00	ns
Immediate Reinforcement	2.45					<.05
Reasons for Quitting						
Level 1		.10				<.05
Cigs/Day			2.30	.27	.07	<.05
Alcohol			−.97	−.11	.01	ns
Level 2		.06				ns
ASI			1.35	.19	.02	ns
DIS			.86	.11	.00	ns
NA			−.67	−.09	.00	ns

Note:

[a]These analyses were conducted among the PTSD and AM groups. $F(5, 71) = 5.01$ (p <.01). *Cigs/Day* = Average number of cigarettes smoked per day; *Alcohol* = Quantity by frequency of alcohol use; *ASI* = Anxiety Sensitivity Index total (38); *DIS* = Discomfort Intolerance Scale total (39); *NA* = Positive Affect Negative Affect Scale Negative Affectivity subscale (40)