Published in final edited form as:

Subst Abus. 2009 ; 30(1): 14–25. doi:10.1080/08897070802606345.

Psychometric Properties of a Brief Smoking Consequences Questionnaire for Adults (SCQ-A) among African American Light Smokers

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Abstract

Despite a decline in cigarette smoking over the past few decades, rates remain unacceptably high for certain segments of the population such as urban African Americans (AAs). AA smokers, on average, smoke fewer cigarettes per day than European American samples; however, are less likely to achieve abstinence during a quit attempt. Outcome expectancies have previously been associated with cessation outcomes, but prior research has not examined expectancies among treatment-seeking AA light smokers. The 33-item Smoking Consequences Questionnaire–Adult (SCQ-A) was evaluated among 751 AA light-smokers (i.e., ≤ 10 cigarettes per day) enrolled in a cessation trial. Exploratory factor analyses replicated the original 10-factor solution. Factors were significantly correlated ($r = -.06$ – $.51$, $p < .001$) and associated with expected demographic, psychosocial and tobacco-related variables. Results provide initial validation of the SCQ-A among AA light-smokers seeking cessation treatment and highlight the association of smoking expectancies with other tobacco-related and psychosocial factors in this sample.

Keywords

African American; smoking consequences; light smoker; psychometric; SCQ

Introduction

Despite considerable prevention and intervention efforts, approximately 50 million U.S. adults smoke cigarettes [1,2] including 5.2 million African Americans (AA) [3,4]. Groups with the highest prevalence of smoking include both men and women with lower levels of socio-economic status and AA men [2,5–9]. Compared to whites, AAs report smoking fewer cigarettes per day (i.e., an average of 19 cigarettes per day (CPD) as compared to 13 CPD

[10]. Estimates of the prevalence of light smoking (defined here as ≤ 10 CPD and are daily smokers [25 of the last 30 days]) [11] in the general population range from 5% to 20% [12]. In contrast, the proportion of AA light smokers is much higher; 53% of male and 62% of female AA smokers report smoking < 10 CPD [13]. After adjusting for employment status, blue collar status, education and income [8], AA smokers are three times more likely than whites to be light vs. heavy smokers [14].

Despite smoking fewer cigarettes per day than white smokers, AAs bear a disproportionate share of tobacco-related disease [3,15]. Compared to whites, AAs are at higher risk for cerebrovascular [16] and heart disease [17,18]; have twice the rates of premature death attributable to cardiovascular disease [5,19]; have the highest incidence rates for all cancers combined; and have the highest overall cancer mortality rates compared to other racial/ethnic groups [3,15]. Although there is a prevailing perception among smokers that light smoking presents a reduced or minimal health risk, studies have shown that light smokers are at increased risk for chronic obstructive pulmonary disease [20] and have a relative risk of developing lung cancer 5.5 times that of nonsmokers [21,22]. Further, risk for coronary heart disease among light smokers is similar to that of heavier smokers [23].

Disparities in smoking cessation outcome rates may account for some of the elevations in tobacco-related morbidity and mortality among AA smokers. Although AA smokers are more likely to attempt to stop smoking within a given year, these quit attempts result in 34% reduced abstinence success [24,25]. The documented higher number of quit attempts among AA smokers suggests both an interest in stopping smoking and a gap in access to or effectiveness of cessation resources [7,26]. AAs are less likely to receive smoking cessation intervention or advice to stop smoking [4] and are less likely to seek treatment for smoking cessation [27]. Facilitating cessation among AAs, particularly those with fewer socioeconomic resources, is a national health imperative. Because the protocols of most smoking cessation trials exclude light smokers, there is little published data on factors associated with cessation among this subset of smokers [28]. Results from our recently completed clinical trial in which 755 African American light smokers were enrolled in a 2x2 randomized trial comparing nicotine gum vs. placebo and motivational interviewing counseling vs. health education [28,29] indicated that predictors of cessation at 26-weeks post enrollment included randomization to HE (OR= 2.26%, 95% CI, 1.36 to 3.74), older age (OR = 1.03%, 95% CI, 1.01 to 1.06), and higher body mass index (OR = 1.04%, 95% CI= 1.01 to 1.07). Further, female gender (OR= 0.46%, 95% CI, 0.28 to 0.76), lower monthly income (i.e., $< \$1,800$ /month), (OR=0.60%, 95% CI, 0.37 to 0.97), higher baseline cotinine levels (OR = 0.948%, 95% CI 0.946 to 0.950), and not completing all counseling sessions (OR = 0.48%, 95% CI = 0.27 to 0.84) reduced the odds of quitting.

To improve smoking cessation programs, researchers have increasingly focused on the underlying cognitive mechanisms that influence addictive behaviors. Cognitive expectancies of the anticipated outcomes of use of a given drug is one area that has been examined among both adults [30,31], young adults and college students [32–34] and adolescents [35,36]. Adolescents' expectancies predict level of intention to smoke [37] and among young adults, appear to predict future cessation efforts and success [38]. Among adults, there is clear evidence that heavier, more dependent smokers tend to hold both more positive and more specific expectancies about the consequences of smoking than do less dependent smokers or non-smokers [30]. Although African American dependent smokers may experience similar smoking expectancies as their white counterparts (e.g., smoking to relieve stress, improve mood, and reduce boredom [39–41]), little is known about expectancies among treatment seeking African American light smokers and whether smoking-related expectancies are associated with cessation outcome. However, we can hypothesize that AA light smokers may have different smoking expectancies given prior research indicating that samples of

predominantly White light smokers are more likely to smoke for positive than negative reinforcement [42,43], are less likely to smoke to relieve withdrawal symptoms [42] and are less likely than heavier smokers to perceive increased personal risk of negative health effects [44].

To examine smoking-related expectancies, much of the literature to date has used the Smoking Consequences Questionnaire [32]. The SCQ contains statements of both positive and negative and immediate and delayed consequences of smoking. Validated among college-aged occasional smokers and nonsmokers, the original factor structure resulted in a four-factor model: Negative Consequences, Negative Reinforcement, Positive Reinforcement and Appetite/Weight Control. Copeland and colleagues (1995) revised the original SCQ to assess smoking expectancies among two samples of heavily nicotine dependent adult smokers, those enrolled in treatment and those recruited from a community sample [30]. As compared to the original 4-factor solution, they identified a 10-factor solution supporting the hypothesis that as substance users become more experienced, they develop more specific and refined outcome expectancies [45]

Subsequent studies have examined the validity of the SCQ-A among predominantly Caucasian samples of adolescents [46], psychiatric patients [47] and adult daily smokers enrolled in cessation trials [31]. Jeffries and colleagues [39] examined the psychometric properties of a brief 30-item version of the SCQ-A in a sample of non-treatment seeking, low-income African American (AA) smokers. Results of this study confirmed both the reliability and validity of a 30-item version of the SCQ among African American smokers; however, only nine of the original ten subscales of the brief SCQ-A were examined (i.e., authors excluded the craving/addiction subscale) and this sample was predominantly composed of heavy smokers, not interested in quitting.

Given the marked morbidity and mortality associated with smoking among African American light smokers and disparities in successful cessation attempts, studies examining factors associated with cessation among this high-risk group are warranted. Thus, the current study examined the psychometric properties of a 33-item version of the SCQ-A in a sample of treatment seeking, African American light smokers (<10 CPD for ≥ 25 days per month). To increase our understanding of expectancies in this sample, the association of baseline demographic, psychosocial and tobacco-related variables with smoking expectancies was also examined. Finally, we examined the predictive utility of smoking expectancies on week 26 outcome following a 6-week pharmacotherapy and behavioral cessation intervention.

Methods

Design

The present analyses are based on data collected in a 2×2 , randomized clinical trial, Kick It at Swope-II (KIS-II), designed to examine the efficacy of nicotine replacement (NRT gum vs. placebo) and counseling (motivational interviewing vs. health education) on quitting among 755 African American light smokers (i.e., those smoking ≤ 10 cigarettes per day, ≥ 25 days per month). Recruitment methods, study methodology and outcomes of the trial are briefly reviewed below and are detailed elsewhere [28,29,48]. The trial procedures were approved and monitored by the University of Kansas Medical Center's Human Subjects Committee.

Participants

In brief, 1,931 smokers in a Midwestern city who self-identified as either "African American or Black" were screened. Of those screened, 1012 were eligible for the study and were invited to participate. Enrollment continued until 755 participants were randomized. Study staff and

participants were blinded to whether participants received active gum or placebo; however, assignment to motivational counseling or health education was not blinded. Participants were required to be African American, 18 years or older, smoke ≤ 10 cigarettes per day for ≥ 6 months, smoke cigarettes on ≥ 25 of the last 30 days, interested in quitting within 14 days from screening and have a home address and functioning telephone number. Participants were ineligible if they had used pharmacotherapy for smoking cessation in the past 30 days, used other forms of tobacco in the past 30 days or met standard exclusionary criteria for NRT (e.g., cardiac disease, pregnancy).

Intervention

The 755 enrolled participants received an 8-week supply of either 2-mg nicotine or placebo gum at the randomization visit. Instructions given for gum use depended on the number of cigarettes smoked at baseline following expert consensus and manufacturer's recommendations. Over the course of the study, four health education (HE) or motivational interviewing (MI) sessions were delivered in person (i.e., at randomization visit and at weeks 1, 8, and 16) and two were delivered by telephone (i.e., at weeks 3 and 6). Participants in all four arms were followed for six months.

Measures

Smoking Expectancies

Smoking Consequences Questionnaire for Adults (SCQ-A): In the current study, a 33-item version of the original 55-item SCQ-A [30] was used to assess smoking expectancies at baseline and at week 26. To abbreviate the original measure, items with the highest factor loadings from the original Copeland analysis were selected from each subscale. As in the original scale, a Likert response format was used to measure the perceived likelihood of each of the positive and negative outcome expectancies ranging from 0 (Not at all likely) to 10 (Extremely likely). Following factor analyses, summary scores for each factor (subscale) were calculated by averaging the score for all items in the factor, with higher scores indicating stronger smoking expectancies.

Baseline Demographic, Psychosocial or Tobacco Related Correlates—The instruments analyzed in the present study were selected from a larger battery of baseline measures administered in the parent study. Demographic and Tobacco-Related Variables. The baseline assessment battery included a measure of demographic information (i.e., age, gender, marital status, income, education) and tobacco related variables (e.g., CPD). Depressive Symptoms. The 10-item Center for Epidemiological Studies Depression Scale [49] is a shortened version of the original 20-item measure [50]. Scores of 4 or higher on the 10-item version indicate possible clinical levels of depression. Perceived Stress. The Perceived Stress Scale-10 [51] was used to measure the degree to which perceived stressful life situations were encountered during the past month. Motivation and Confidence to Quit. Motivation and confidence to quit smoking were assessed using a single item, 10-point continuum with higher scores indicating higher motivation/confidence to quit [52,53]. Self-Efficacy to Quit Smoking. The Smoking Self-Efficacy Questionnaire (SEQ-12) [54] is a 12-item, 2-dimensional scale (i.e., internal and external) that measures confidence to refrain from smoking in certain situations. Nicotine Dependence. Nicotine dependence was evaluated using the 6-item Fagerstrom Test for Nicotine Dependence [55] scale. Withdrawal Symptoms. The Minnesota Withdrawal Scale [56,57] consists of an 8-item scale that measures withdrawal symptoms.

Outcome Measure—The primary outcome variable for the study was 7-day point prevalence smoking cessation at week 26, defined as having smoked no cigarettes- not even a puff- for the previous days. Self-reported abstinence was confirmed with expired carbon

monoxide assessment (< 10 ppm) and discrepancies were resolved by obtaining saliva for cotinine analysis (< 20 ng/mL).

Data Analysis

Surveys were double-data entered in Access and exported into SAS v9.1 [SAS Institute Inc., 1999] for analysis. Categorical variables were summarized by frequencies and percentages and continuous variables were summarized by means and standard deviations.

Internal Validity—In order to assess the internal validity of the abbreviated SCQ-A, we conducted an exploratory factor analysis specifying 10 factors. Cronbach's alpha was calculated for each subscale. Pearson correlations were calculated between each of the subscales.

Concurrent Validity—The association of each factor with identified baseline demographic, tobacco-related and psychosocial characteristics was examined to establish concurrent validity (i.e., to determine if associations were in the expected direction.) We compared demographics and other baseline measures for each of the subscales using the two-sample t-test and Pearson correlations.

Predictive Validity—The predictive validity of the SCQ-A was evaluated by examining the association of each factor with cotinine-verified abstinence at week 26. Outcome analyses were performed on an intent-to-treat basis and those lost to follow-up (n = 118) were imputed as smokers for cessation outcome analyses.

SCQ-A Change Score—In order to evaluate the possible impact of the interventions on smoking expectancies, the change in SCQ-A subscale scores from baseline to week 26 were evaluated.

Results

Participant Characteristics

Of the 755 enrolled in the study, 751 completed the brief 33-item version of the SCQ-A. Table 1 presents baseline demographic characteristics of the study participants. The majority of study participants were middle-aged women (M = 46.1) who were single, separated or divorced (62%) and had at least a high school education (83%). Participants smoked approximately eight cigarettes per day, smoked at this rate for the past 12.4 years (SD±11.84), scored an average of 2.9 on the FTND (i.e., indicating a low level of nicotine dependence) and averaged 3.2 quit attempts in the past year. Forty-six percent of the sample reported elevated levels of depression (CES-D score ≥ 4).

Internal Validity

Exploratory factor analysis specifying ten factors resulted in moderate to high factor loadings (.398 – .861) and there were no significant cross loading between items. The ten factors included Negative Affect Reduction (NAR), Stimulation/State Enhancement (SSE), Health Risk (HR), Taste/Sensorimotor Manipulation (TSM), Social Facilitation (SF), Weight Control (WC), Craving/Addiction (CA), Negative Physical Feeling (NPF), Boredom Reduction (BR), and Negative Social Impression (NSI). Eigenvalues for each factor ranged from 1.78 [Negative Health Risks] to 25.77 [Negative Affect Reduction]. Cronbach's alpha ranged from .67 to .90 and were comparable to those reported by Brandon and Baker [32] and Jeffries et al. [39] (i.e., .70 to .90). Overall, the factors explained 63% of the variance in responses.

Factor loadings were similar to those found by Copeland and colleagues [30] and Jeffries and colleagues [39]. Further, all but 4 of the 10 factors were significantly correlated ($r = -.065$ –.

509, $p < .001$). Nonsignificant correlations included the Health Risk factor and the following: Negative Physical Feeling (.06); Boredom Reduction (.01); Social Facilitation (.03) and Taste/Sensorimotor Manipulation (.04).

Concurrent Validity

To explore the concurrent validity of the SCQ-A subscales with possible demographic, psychosocial and tobacco-related variables, t-tests and correlations were used. Results indicated that males endorsed lower smoking-related expectancies regarding Negative Affect Reduction (-4.06 , $p < 0.001$), Weight Control (-5.41 , $p < 0.001$), and Negative Social Impression (-2.41 , $p = 0.02$); those who were single, divorced or widowed endorsed lower expectancies regarding Health Risks (-2.21 , $p = 0.03$); and those with lower income endorsed higher expectancies regarding Negative Affect Reduction (2.38 , $p = 0.02$), Taste/Sensorimotor Manipulation (2.20 , $p = 0.03$), and Negative Physical Feeling (2.15 , $p = 0.03$) and lower expectancies regarding Negative Social Impression (2.33 , $p = 0.02$). Finally, those with less than a high school education endorsed higher expectancies regarding Taste/Sensorimotor Manipulation (2.59 , $p = 0.01$) and Craving/Addiction (2.78 , $p = 0.01$) and lower expectancies regarding Negative Social Impression (2.00 , $p = 0.05$). Results of correlational analyses found multiple significant demographic, tobacco-related and psychosocial variables to be associated with the 10 subscales of the SCQ-A. However, the small correlation coefficients (i.e., $-.43$ to $.30$) did not warrant further analyses.

Predictive Validity

As detailed in Ahluwalia et al. (2006), 7-day point prevalence cessation rates at week 26 were no better for active gum than for placebo (14.2% versus 11.1%, $p = 0.232$). However, a counseling effect emerged, with health education counseling performing significantly better than motivational interviewing (16.7% versus 8.5%, $p < 0.001$). Results of logistic regression analyses conducted to examine whether the SCQ-A was associated with week-26 abstinence failed to find a significant association for any of the 10 factors ($p > .05$).

SCQ-A Change Score

No significant difference was noted between the 10 SCQ-A subscales from baseline to week 26 ($p > .05$).

Discussion

The primary purpose of this study was to examine the psychometric properties of an abbreviated version of the SCQ-A among African American regular light smokers and to explore associations between smoking expectancies, baseline demographic, tobacco-related and psychosocial characteristics, and cessation outcome.

Internal Validity

Results indicate that the modified, 33-item SCQ-A appears to be a valid measurement of smoking expectancies in this population. Factor analyses replicated the factor structure identified by both Copeland [30] and Jeffries [39], which suggests that expectancies regarding the positive and negative effect of smoking are similar for African American treatment seeking light smokers as with both Caucasian and African American heavily dependent smokers who are not necessarily interested in quitting.

The general pattern of findings supports Copeland's [30] contention that refinement of smoking expectancies occurs as smokers continue to smoke over time. Brandon and Baker [32] found a 4-factor solution to fit the expectancies of daily smokers selected from a college student

sample who smoked an average 11.2 CPD for 2.7 years. Copeland and colleagues [30] found a 10 factor-solution when the SCQ-A was examined among heavier smokers (i.e., 24.7–26.6 CPD) who smoked an average of 19–27 years. Our results suggest that our adult African American light smokers (7.6 CPD) who smoked on average 12.4 years have similarly refined smoking expectancies as compared to heavily dependent adult smokers.

Concurrent Validity

Consistent with Copeland et al. [30] and Wetter et al. [31] who found a positive relationship between negative affect and smoking expectancies, we found depression to be positively correlated with several expectancy scales, most notably Negative Affect Reduction, Stimulation/State Enhancement, Social Facilitation and Boredom Reduction. Each of these expectancy scales relates to improvement in mood states (e.g. feeling good, energized, less bored, more calm, or more at ease with others). Further, the strength of associations was similar to those reported by Copeland, suggesting that smoking expectancies related to mood are similar across racial/ethnic groups and light to heavy smokers.

Individuals who reported that smoking reduced feelings of boredom were also more likely to smoke at higher levels and to be more nicotine dependent. Consistent with previous literature pertaining to smoking expectancies, increased cigarette consumption and nicotine dependence were associated with smoking to reduce boredom [30,58,59]. Reasons for this association are unclear; however, Zuckerman and colleagues [60,61] suggest sensation-seeking individuals demonstrate a greater tendency to smoke and find smoking reduces feelings of boredom in situations where the environment lacks excitement or entertaining stimuli. Further, Carton and colleagues found a positive association between boredom susceptibility and sensation-seeking in a French smoking population when compared to non-smoking peers [62].

Participants who endorsed the belief that smoking increased Social Facilitation also reported greater levels of cigarette consumption, nicotine dependence, and perceived stress. These findings support prior studies indicating that smokers believe that smoking enhances socialization, reduces feelings of anxiousness and promotes greater social competence [30, 59,63]. Similarly, smokers who perceived negative social repercussions relating to their smoking also reported smoking less. These results indicate that among AA light smokers, the perception of social disapproval may be associated with smoking behavior change.

Consistent with previous literature, individuals reporting greater negative smoking expectancies endorsed more motivation and confidence to quit [61,64]; [65]. It is interesting to note that our light smokers reported higher health risk mean scores than those reported by both Jeffries [39] and Copeland [30], who describe samples of heavier smokers. Thus, despite smoking fewer cigarettes per day, these findings indicate that our AA smokers are aware of the negative health impact of smoking. This is also consistent with finding from a previous study that showed that compared to heavier smokers, light smokers intentionally limit their smoking using a variety of strategies [66,67].

Predictive Validity

Although our analyses found no association with SCQ-A subscale scores and abstinence outcomes at 6 months, positive smoking related expectancies have been associated with decreased cessation success and negative expectancies have been associated with improved cessation in prior studies (e.g., [68,69]. Further, Copeland and colleagues [64] found certain SCQ-A subscales (i.e., Negative Affect Reduction, Taste/Sensory Motor Manipulation, and Boredom Reduction) to be predictive of smoking cessation at 1, 2, 4, 12 and 24 weeks. Similarly, Wetter et al. [31] found that participants who reported greater negative reinforcement expectancies were more likely to be quit at weeks 6 and 8. Reasons why the SCQ-A did not

predict quit status at week 24 or to change from baseline to week 24 after receiving a 6 week course of treatment in our sample of light smoking African Americans are unclear. Although both current study and that of Jefferies et al were among African Americans, the current study consisted of a sample that was seeking smoking cessation treatment in a clinical trial; unlike the sample in Jefferies et al that was a cross-section study. Treatment seeking samples are usually more highly motivated to quit smoking compared to the general population because motivation to quit is a requirement for enrollment in most clinical trials [28]. Light smokers may therefore differ in their smoking expectancies compared to non-treatment seeking sample. Given that half of the sample was assigned to a health education intervention which focused on the known impact of smoking on health and wellness, it was expected that expectancy scores would have changed during the intervention phase of the study. Our failure to assess expectancies throughout the course of study prevents us from examining this hypothesis. Assessment of participant expectancies throughout the course of smoking cessation treatment should be explored in future studies.

Limitations

Limitations of this study include our inclusion of Midwestern, African American treatment seeking enrolled in a smoking cessation trial, therefore, these findings may not generalize to African American light smokers at lower levels of readiness to quit or from other regions of the country. Future analyses are recommended to examine the validity of the SCQ-A in other samples of AA light smokers before these results can be generalized to other national samples of African American smokers. Future studies should also examine the smoking-related expectancies of other ethnic groups using the 33-item SCQ-A to determine if these universal constructs are similar among other population groups.

Despite these limitations, our results provide preliminary evidence of the validity of a brief SCQ-A in African American light smokers. Findings suggest that expectancies are meaningfully related to smoking behavior in this population and indicate that despite previously identified smoking differences between African American smokers and White smokers, as well as between light smokers and heavier smokers [14], underlying smoking expectancies may operate similarly. In addition, these findings support the use of a shorter version of this instrument, which may reduce the duration of testing and participant burden.

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Table 1
Participant (n=751) Demographic, Psychosocial and Tobacco-Related Characteristics.

Demographics	
Age, mean $\pm$ SD yr	45.06 $\pm$ 10.67
Women, n (%)	502 (67%)
Married or living with partner, n (%)	284 (38%)
Monthly family income $\leq$ \$1800, n (%)	433 (59%)
Education $\geq$ High school, n (%)	626 (83%)
Employment	361 (48%)
BMI	30.63 $\pm$ 8.11
Self-perception as overweight	478 (64%)
Trying to lose weight	402 (54%)
Psychosocial Variables	
Self efficacy to refrain from smoking	
Internal Cues	15.30 $\pm$ 5.44
External Cues	13.84 $\pm$ 6.17
PSS-4-item (perceived stress)	8.69 $\pm$ 2.07
CES-D-10-item (depression)	3.46 $\pm$ 2.57
Tobacco Related	
Cigarettes per day, mean $\pm$ SD	7.56 $\pm$ 3.21
Number of years smoking at current rate	12.4 $\pm$ 11.84
Number of 24 hour quit attempts in the last year, mean $\pm$ SD	3.26 $\pm$ 6.63
Motivation to quit, mean $\pm$ SD	9.05 $\pm$ 1.66
Confidence in quitting, mean $\pm$ SD	7.14 $\pm$ 2.57

Table 2
Smoking Consequences Questionnaire-Adult: Scales, Items, and Factor Loadings (N = 751)

Item	Scale (coefficient alpha reliability)	NAR	TSM	CA	SF	WC	NPF	HR	SSE	BR	NSI
Negative Affect Reduction (NAR)											
2	When I am angry, a cigarette can calm me down	.780	.081	.095	.106	.054	.095	.023	.072	.077	.044
5	Smoking calms me down when I feel nervous	.728	.154	.165	.133	.112	.081	.035	.160	.167	.016
17	If I'm feeling irritable, a smoke will help me relax	.709	.107	.254	.157	.059	.055	.005	.159	.244	.064
20	When I'm upset with someone, a cigarette helps me cope	.752	.117	.172	.139	.131	.008	.049	.118	.205	.057
Stimulation/State Enhancement (SSE)											
4	Smoking a cigarette energizes me	.219	.151	.068	.189	.085	.077	.041	.660	.150	.040
8	Cigarettes can really make me feel good	.307	.243	.215	.293	.115	.019	.036	.401	.177	-.031
7	A cigarette can give me energy when I'm bored and tired	.159	.069	.065	.170	.103	.079	.021	.893	.157	.072
Health Risk (HR)											
14	By smoking, I risk heart disease and lung cancer	.027	-.014	.087	-.016	-.014	-.019	.582	-.002	.019	.020
21	The more I smoke, the more I risk my health	.036	.039	.046	-.032	.033	.001	.724	.006	-.032	.026
28	Smoking is hazardous to my health	.009	.061	-.035	-.050	.045	.071	.808	.022	-.028	-.053
32	Smoking is taking years off my life	.006	.007	.074	.031	.040	.049	.455	.029	-.011	.213
Taste/Sensorimotor Manipulation (TSM)											
9	I enjoy the flavor of a cigarette	.142	.777	.135	.069	.059	-.014	.017	.100	.141	-.052
24	I enjoy the taste sensations while smoking	.150	.851	.195	.168	.055	-.035	.064	.071	.083	-.067
29	When I smoke the taste is pleasant	.100	.819	.128	.197	.035	-.047	.024	.089	.071	-.052
Social Facilitation (SF)											
12	I feel like part of the group when I am around other smokers	.098	.101	.128	.515	.028	.075	-.002	.057	.199	.164

Item	Scale (coefficient alpha reliability)	NAR	TSM	CA	SF	WC	NPF	HR	SSE	BR	NSI
15	Smoking helps me enjoy people more	.092	.037	.011	.588	.211	.137	-.059	.213	.094	.045
25	Conversations seem more special if we are all smoking	.060	.166	.093	.683	.130	.079	-.036	.080	.120	.122
30	I feel more at ease with other people if I have a cigarette	.262	.146	.079	.648	.110	.062	-.003	.101	.097	.060
	Weight Control (WC)										
19	Smoking helps me control my weight	.103	.043	.047	.074	.763	.096	.018	.103	.099	.077
22	Cigarettes keep me from eating more than I should	.115	.066	.046	.178	.684	.122	.049	.006	.029	.050
27	Smoking keeps my weight down	.055	.030	.100	.130	.861	.002	.074	.088	.008	.092
	Craving/Addiction (CA)										
11	Nicotine "fits" can be controlled by smoking	.251	.167	.587	.106	.056	.077	.078	.039	.156	.072
23	Smoking will satisfy my nicotine cravings	.302	.229	.673	.044	.098	.043	.149	.040	.083	.050
33	Smoking temporarily reduces those repeated urges for cigarettes	.150	.160	.489	.209	.092	.053	.080	.113	.167	.051
	Negative Physical Feeling (NPF)										
1	My throat burns after smoking	.052	-.041	.023	.069	-.004	.753	.005	.002	.073	.048
6	Cigarettes make my lungs hurt	.058	.003	.015	.076	.121	.599	.052	.085	.012	.100
18	Smoking irritates my mouth and throat	.058	-.032	.088	.104	.082	.788	.034	.037	.004	.115
	Boredom Reduction (BR)										
3	When I am alone, a cigarette can help me pass the time	.264	.098	.092	.135	.066	.079	-.024	.099	.677	.069
10	If I have nothing else to do, a smoke can help kill time, or help pass the time	.208	.155	.137	.164	.041	.023	-.031	.130	.825	.005
31	Cigarettes are good for dealing with boredom	.192	.084	.079	.326	.068	.016	-.024	.101	.600	.060
	Negative Social Impression (NSI)										
13	Smoking makes me seem less attractive	.053	-.044	.065	.042	.115	.012	.091	.026	.028	.715

Item	Scale (coefficient alpha reliability)	NAR	TSM	CA	SF	WC	NPF	HR	SSE	BR	NSI
16	People think less of me if they see me smoking	.060	-.007	-.005	.149	.003	.080	.016	.069	.042	.536
26	I look ridiculous while smoking	-.008	-.074	.045	.051	.066	.146	.064	-.030	-.028	.632
	Cronbach Alpha	.889	.902	.734	.771	.832	.769	.731	.797	.837	.671
	Eigenvalue	25.77	8.68	1.78	6.32	5.78	3.22	3.72	2.29	4.43	1.39
	% Variance Explained	9.04	10.14	3.66	5.09	6.78	4.22	4.10	10.72	6.90	2.72