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Smoking-related self-efficacy, beliefs, and intention: assessing factorial validity and structural relationships in 9th–12th grade current smokers in Texas

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Abstract

Smoking-related self-efficacy and beliefs about the benefits of smoking are consistently related to intention to continue smoking, a common proximal outcome in youth smoking cessation studies. Some measures of these constructs are used frequently in national and state youth tobacco surveys, despite little evidence of validity for high school smokers. Further, the association of the constructs with intention has not been demonstrated in this group. The factorial validity of the measures and the cross-sectional correlations among self-efficacy, beliefs, and intention were examined among 9th–12th grade current smokers (N=2767, 13.8% reporting smoking ≥ 1 cigarette in the previous 30 days; mean age 16.2; 61.2% white, 6.2% Black, 17.8% Hispanic, 5.0% Asian, 3.5% other; response rate 70%) from a convenience sample of 22 Texas schools. Confirmatory factor analyses supported evidence of factorial validity for the scales in this sample. Structural equation modeling analyses suggested youth smokers have low confidence in their ability to avoid smoking, believe smoking offers emotional or social benefits, and intend to continue smoking. The scales assess smoking-related self-efficacy, beliefs, and intention in this sample. Prospective studies are needed before intervention development implications are suggested.

Keywords

smoking-related beliefs; self-efficacy to avoid smoking; intention to continue smoking; adolescents; confirmatory factor analysis; structural equation modeling

Introduction

Smoking-related self-efficacy and beliefs, as measured by scales from youth tobacco use surveys, such as the Teenage Attitudes and Practices (TAPS) and the California Tobacco

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Survey (CTS), are consistently related to smoking intention, a proximal indicator of youth smoking (Choi, Gilpin, Farkas, and Pierce, 2001; Ellickson, McGuigan, and Klein, 2001; Tucker, Ellickson, and Klein, 2002). Accordingly, these constructs are often the targets of school-based youth smoking cessation programs and evaluations (Sussman, 2002; McDonald, Colwell, Backinger, Huste, and Maule, 2003). **Despite their pervasive use, there is little evidence to suggest these youth tobacco use survey measures are psychometrically sound for high school smokers.**

First, the psychometric properties of these scales have not been examined thoroughly for high school current smokers (those who smoked at least one cigarette in the past 30 days). Evidence of factorial validity for youth tobacco survey items that measure self-efficacy, intention, and beliefs was found almost exclusively with non-smoking, middle school youth. Lawrence and Robinson (1986) found that survey items measuring self-efficacy to avoid smoking had evidence of factorial validity for 7th and 8th grade non-smokers. Pierce, Choi, Gilpin, Farkas, and Merritt (1996) found TAPS items measuring smoking susceptibility had evidence of predictive validity for smoking uptake among non-smoking middle school students. MacPherson and Myers (2004) validated CTS items measuring smoking-related beliefs among high school students; the sample consisted of both smokers and nonsmokers, however. Upon our review, these scales had not been found to have evidence of factorial validity for a sample consisting of only high school current smokers.

Secondly, scale items that operationalize smoking-related self-efficacy, beliefs, and intention in tobacco *prevention* studies for middle school students are being used laterally in tobacco *cessation* studies for high school smokers. Huver, Engles, and deVries (2005) used the self-efficacy items validated by Lawrence, L., & Robinson among high school smokers. Smoking susceptibility items (“Do you think you will try a cigarette soon?” and “Do you think you will be smoking one year from now”) were also used to capture “intention” (Choi et al., 2001; Tucker et al., 2002) and “intent to quit smoking in the future” (Sargent et al., 1998) among high school smokers. These scale items may operate differently between middle and high school students due to differences in the groups’ smoking behavior; high school smokers generally are more regular smokers than middle school students (CDC, 2000). Additionally, some of the scale items lack face validity for high school smokers. For instance, using the item “Do you think you will try a cigarette soon” to capture intention in high school current smokers is difficult to conceptualize.

Finally, the mechanism by which self-efficacy and beliefs influence intention to continue smoking for high school smokers is unknown. Though self-efficacy and beliefs are identified predictors of adolescent smoking intention (Solomon, Bunn, Pirie, Worden, and Flynn, 2005; Ary and Biglan, 1988 and Tucker et al., 2002), few have demonstrated the magnitude and direction through which these constructs influence intention to continue smoking in high school smokers. A theoretical relationship among the constructs has been postulated, but it has only been partially tested in 12–14 year olds (O’Callaghan, Callan, and Baglioni, 1999). We were unable to find studies that had examined the theoretical relationship among smoking-related self-efficacy, beliefs, and intention in high school smokers. Testing this relationship in high school smokers may provide insight into the cognitive-behavioral aspect of the youth smoking cessation process.

1.2 Conceptual model

A conceptual model depicting the theoretical relationship among smoking-related self-efficacy, beliefs, and intention is presented in Figure. 1. The model was derived from youth tobacco cessation empirical findings and from Fishbein’s Integrative Model (Fishbein, 2000). The Integrative Model is a combination of constructs from behavioral change theories, including its predecessors the Theory of Planned Behavior and the Theory of Reasoned Action

(Ajzen and Fishbein, 1980, Ajzen, 1991) and Social Cognitive Theory (Bandura, 1986). The model states that behavior is likely to occur if one has the necessary skills to perform the behavior, no environmental constraints against performing the behavior and strong intention. Intention is influenced by attitudes toward the behavior, perceived norms about the behavior, and self-efficacy with respect to the behavior (Fishbein, 2000).

Our conceptual model consisted of intention to continue smoking, smoking-related beliefs, and self-efficacy to avoid smoking constructs. The model hypothesizes that smoking-related self-efficacy and beliefs have direct effects on intention to continue smoking. **Other Integrative model constructs, such as skills and environmental constraints, were not included in the conceptual model because they were not measured in our survey.** Similarly, a measure of smoking cessation was not available in our survey. Intention to continue smoking was chosen as the proxy for smoking cessation in this study, as supported by the literature (Ary and Biglan, 1988 and Tyc, Hadley, Allen, et al., 2004). This choice was based upon the assumption that those who reported not intending to continue smoking were planning to quit, given the students were current smokers.

1.3 Study goals

Testing the conceptual model was a two-step process (Anderson and Gerbing, 1988). First a measurement model including items consistent with the conceptual definitions of smoking-related beliefs, self-efficacy, and intention was tested. Secondly, a structural model that delineated the hypothesized conceptual links among the constructs was tested. The specific aims of this study were first to establish evidence of factorial validity of youth tobacco use scales thought to measure smoking-related self-efficacy, beliefs, and intention in a sample of multiethnic 9th–12th grade current cigarette smokers in Texas. Secondly, we examined the cross-sectional correlations of constructs included in the model and evaluated the strength of those correlates in the sample.

2. Method

This study was a secondary analysis of data collected from high school students participating in the Texas Tobacco Prevention Initiative (TTPI), a Master-Settlement funded, multi-component tobacco prevention and control pilot program (Meshack, Hu, Pallonen, McAlister, et al, 2004).

2.1 Participants

Data were collected from selected high schools in East Texas and Houston, TTPI's designated study area (Meshack et al., 2004). Of twenty-four high schools chosen for the study; of those, 19 (school response rate 72%) agreed to participate. All students at the 19 schools were to be surveyed. The Texas state average daily attendance rate for the 1999–2000 school term was 95.6%, yielding a total of 29 722 eligible students. Of that number, 20 490 (student response rate 70%) completed the survey. The most common reasons for student nonparticipation were 1) classroom teachers did not administer the survey; 2) students absenteeism the day of the survey; 3) parental refusal; and 4) students did not give assent.

Of the 20 490 total respondents, 199 had completed less than 80% of the total survey items and 325 provided inconsistent responses to survey items (e.g. reported no lifetime smoking but said that they had smoked 15 cigarettes during the past 30 days). These were not included in further analyses. No significant demographic differences were found among students who were eligible to be included in the final analyses (N=19 966) and those who were not eligible. Data for youth who self-identified as current smokers (N=2767, 13.8% of eligible respondents) were included in the final analysis. A sensitivity analysis was also conducted for students who

self-identified as daily smokers (N=2096, 9.5% of eligible respondents, defined as smoked at least 1 cigarette every day in the past 30 days).

2.2 Procedures

The survey was administered from March to May 2000. Study coordinators and teachers from each participating school were trained to administer the survey. Students received passive parental consent forms that were returned only if parents did *not* want their student to participate in the survey. Classroom teachers administered the survey, available in English and Spanish, to students who were present and gave this assent. Both the TTPI pilot study and the current study were approved by the Committee for the Protection of Human Subjects at the University of Texas Health Science Center at Houston.

2.3 Measures

2.3.1 Texas Youth Tobacco Survey—Measures for this study were included the Texas Youth Tobacco Survey, an 87-item anonymous self-administered, paper-and-pencil questionnaire. Back translation procedures were undertaken for the Spanish language surveys (Meshack et al., 2004). The Texas Youth Tobacco Survey was an extension of the Youth Tobacco Survey (YTS) created by the Centers for Disease Control's (CDC) Office of Smoking and Health. Existing youth tobacco survey modules from the Youth Risk Behavior Survey (YRBS), the 1996 Study of Smoking and Tobacco Use Among Youth and Young Adults, the CTS, the TAPS, and the former National Household Survey on Drug Abuse (NHSDA) were used to create the YTS. No single theoretical framework guided the development of the YTS instrument because measures were drawn from various sources. Other than the cognitive interviews that were conducted on the core YTS items by the CDC, no further psychometric analyses have been performed on the Texas Youth Tobacco Survey (personal communication with Richard Kropp, Texas Department of State Health Services Texas Department of Health, 2004).

2.3.2 Constructs measured in this study

2.3.2.a Beliefs Items measuring smoking-related beliefs in youth tobacco surveys appear to be derived from national surveys such as the TAPS Waves I and II and the CTS. These items have been labeled outcome expectancies (Myers, McCarthy, MacPherson, and Brown, 2003) and smoking-related cognition (MacPherson and Myers, 2004). The constructs have been operationalized as unidimensional (MacPherson and Myers, 2004) and multidimensional (Myers et al., 2003). Regardless of labeling, item rating and scoring, each construct essentially describes the outcomes a youth expects to receive from smoking. In the current study, we refer to these consequences as smoking-related beliefs. The construct was operationalized as unidimensional and reflects social and emotional expectations of smoking. Seven items from our survey measured the construct, including “Do you think smoking cigarettes makes young people look cool or fit in?” (social beliefs) and “Do you believe cigarette smoking helps people relax?” (emotional beliefs). Responses ranged from 1 (definitely yes) to 4 (definitely no).

2.3.2.b Intention to continue smoking Items measuring intention also have origins in TAPS I & II and CTS. These items were used to measure intention to continue smoking in this study. The construct was labeled intention to continue smoking because the items would represent the likelihood of continued smoking in the context of a current smoker. The intention to *continue* smoking label was chosen because the wording of the items appears to assess a youth current smoker's likelihood of continuing smoking. This construct was measured by three items from our survey, including “Do you think you will be smoking cigarettes one year from now”. Responses ranged from 1 (definitely yes) to 4 (definitely no).

2.3.2.c Self-efficacy to avoid smoking Items measuring this construct come from self-efficacy measures addressing difficulty avoiding smoking in negative affective or in social situations in the adult relapse prevention literature (Condiotte and Lichtenstein, 1981). In youth literature this construct has been operationalized as unidimensional (Fagan, Eisenberg, Frazier, Stoddard, et al., 2003) and multidimensional, with separate social and negative affect domains (Solomon et al., 2005). In the current study, self-efficacy to avoid smoking (also referred to as smoking-related self-efficacy) was operationalized as a unidimensional construct, including items addressing the ability to avoid smoking in social and emotional situations. The construct was measured by four items from our survey, including “If you are with friends who smoke, are you able not to smoke” (social) and “If you feel nervous, are you able not to smoke” (emotional). Responses ranged from 1 (definitely yes) to 4 (definitely no). Compared to other items used in our study, the self-efficacy items were negatively valenced and were subsequently reverse coded before creating a composite score. After reverse coding, a score of 4 indicated the ability to avoid smoking and a score of 1 indicated no ability to avoid smoking.

2.4 Statistical analysis

Confirmatory factor analysis (CFA) was conducted to establish factorial validity of the three-factor latent measurement model. CFA was appropriate for this study given a theoretical model was imposed and tested on the data (Bryant and Yarnold, 1994, Hoyle and Smith, 1994). Next, structural equation modeling (SEM) was conducted to test the structural relationship among smoking-related self-efficacy, beliefs, and intention. SEM is appropriate as it allows for multiple measures as indicators of latent constructs and estimates the interrelationships among the latent constructs while controlling for unreliability by removing measurement error (Bryant, 2000). All analyses were conducted in PRELIS and LISREL software packages (Joreskog and Sorbom, 1996). Due to the ordinal nature of the data, polychoric correlation matrices were selected and analyzed using weighted least squares (WLS) estimation (Joreskog and Sorbom, 1996). A covariance moment matrix of the sample data was analyzed in this study. (The moment matrix is available upon request from the first author).

2.4.1 Measurement model—The measurement model for the CFA is presented in Figure. 2. We hypothesized, a priori, that: a) the items captured their respective constructs, b) the three constructs were correlated as supported by literature and theory, c) the 14 items have a nonzero loading on one factor and a zero loading on all the other factors (e.g., the “Smoke next year” item has a nonzero loading on the intention construct and a zero loading on self-efficacy and beliefs constructs), and d) the error terms associated with each item were uncorrelated. The variance for the three latent constructs was set to 1 for model identification purposes.

Review of parameter estimates and goodness of fit indices guided assessment of the measurement and structural models. A t-value was calculated for each model parameter. Paths with t-values greater than ± 1.96 were statistically significant. A range of fit statistics including the chi square test of model fit (non-significant values indicative of model fit); Non-Normed Fit Index (NNFI) and Comparative Fit Index (CFI; for both indices, $\geq .90$ is acceptable fit, $\geq .95$ is excellent fit, Hu and Bentler, 1999); and Root Mean Square Error of Approximation (RMSEA, $\leq .08$ is acceptable fit, $\leq .05$ is excellent fit, Browne and Cudeck, 1993) were used to assess model fit, as there is no single agreed-upon standard for assessing model fit (Byrne, 1998; Hu and Bentler, 1999). A review of standardized residuals (>2.58 indicative of possible misfit, Byrne, 1998), squared multiple correlations (the proportion of variance explained by the predictors of the variable), modification indices, and prior empirical evidence also guided the review of the models.

We used multi-group analysis to cross-validate the three-factor latent structure. Cross-validation, or testing the hypothesized model on independent samples drawn from the same

population, minimizes the possibility of a data-specific model (Hoyle and Panter, 1995). The full sample of current smokers (N=2767) was randomly divided into two samples. The first sample (validation sample, N=1383) was used to test the a priori hypothesized model and to refine the model using post hoc analyses. The second sample (calibration sample, N=1384) was used to confirm the final best-fitting measurement model. Finally, we conducted a post hoc CFA sensitivity analysis on the best fitting measurement model among daily smokers to determine if the model was valid for other smoking subgroups.

2.4.2 Scale construction—Smoking-related self-efficacy, beliefs, and intention to continue smoking scales were constructed based on CFA results. The scales were calculated by averaging the item scores. Lower scale scores indicated a lack of ability to avoid smoking, beliefs that smoking offers social or emotional benefits, and the intent to continue smoking; higher scale scores reflected the opposite scenario.

2.4.3 Structural model—The model for this study is presented in Figure. 1. This model was tested on the full sample of current smokers (N=2767). We hypothesized, a priori, that: a) smoking-related self-efficacy and beliefs both had direct paths to intention to continue smoking, b) self-efficacy and beliefs were correlated, and c) errors of the latent constructs and of the observed measured variables for each construct were uncorrelated. Criteria used to assess parameter estimates and model fit in the measurement model were also used in the structural model.

3. Results

3.1 Sample description

Current smokers were 51% male, with a mean age of 16.2 years (SD= 1.2; range 14–18 years). Regarding ethnicity, 61.2% were White, 6.2% Black/non-Hispanic, 17.8% Hispanic, 5.0% Asian, and 3.5% other.

3.2 Descriptive statistics

The data were skewed and kurtotic. Square root, logarithmic, and inverse transformations were performed, but the data continued to violate normality assumptions. Asymptotic covariance matrices and polychoric correlations, in addition to WLS, were used to address the violation of normality.

3.3 Evaluation of the measurement model

The a priori hypothesized three-factor model had poor fit to the data (model fit: $\chi^2=1181.94$, $df=74$ RMSEA=0.10, CFI=0.89, and NNFI=0.87). Two items (“weight control” and “feel depressed”) were removed because the residual matrix and modification indices indicated the items were inconsistent with the postulated model. Two other items (“bored” and “being older”) were removed because of cross loadings. After modifications, the final model had excellent fit to the data ($\chi^2=160.20$, $df=32$ RMSEA=0.05, CFI=0.98, and NNFI=0.97).

Factor loadings, variances, and covariances for the final model were cross-validated with the calibration sample. The factor structure is thought to be equivalent across independent samples when there is a non-significant change in chi-square and parameter estimates are constrained to equality across groups (Hoyle and Panter, 1995). The final model validated well in the second independent sample (Table. 1). The stability of the model was further supported when the inclusion of cross-group constraints did not degrade the model fit.

Parameter estimates for the final model are presented in Table. 2; the final model is illustrated in Figure 3. The constructs were significantly correlated to one another in both samples

(validation sample: $\Phi_{\text{intention, self-efficacy}} = 0.51$; $\Phi_{\text{intention, beliefs}} = 0.20$; $\Phi_{\text{self-efficacy, beliefs}} = 0.31$; calibration sample: $\Phi_{\text{intention, self-efficacy}} = 0.51$; $\Phi_{\text{intention, beliefs}} = 0.13$; $\Phi_{\text{self-efficacy, beliefs}} = 0.32$); the values were not so high to suggest that each construct item was measuring the same construct, however. Squared multiple correlations (R^2) for the variables suggest that the observed measures were appropriate indicators for their respective constructs (Table. 2).

The CFA sensitivity analysis conducted among daily smokers indicated that the final model fit the data equally well, providing further support for factorial validity ($\chi^2=257.77$, $df=32$ RMSEA=0.05, CFI=0.98, and NNFI=0.97).

3.4 Evaluation of structural models and strength of correlates

The a priori model (Figure. 4a) was structurally consistent with data from the full sample of current smokers. As hypothesized, smoking-related self-efficacy and beliefs constructs were correlated ($r=0.40$). The model suggested that smoking-related beliefs had a significant, direct path to intention to smoke. Self-efficacy to avoid smoking had a small, non-significant direct path to intention. The model suggested that smoking-related self-efficacy had an indirect effect on intention through smoking-related beliefs, however. Figure. 4a displays the standardized coefficients and t-values for paths in the a priori model.

3.5 Post hoc model modifications

Self-efficacy's indirect effect on intention through smoking-related beliefs was tested in a separate post-hoc model and is presented in Figure. 4b. In this model, the direct path from smoking-related self-efficacy to intention was eliminated; self-efficacy was allowed to influence intention through smoking-related beliefs. The post hoc model also was structurally consistent with the sample data. **Chi square comparisons of the a priori and post hoc models suggest the models were equivalent. Thus, both models are equally feasible for this sample.**

Discussion

Our findings provide evidence of factorial validity for smoking-related self-efficacy, beliefs, and intention to continue smoking scales among high school current smokers. A sensitivity analysis of the constructs among daily smokers provided additional evidence of factorial validity. Cross sectional correlations among the constructs revealed smoking-related beliefs had a direct effect on intention. The path between smoking-related self efficacy and intention was not significant, however. Instead self-efficacy influenced intentions through beliefs. A post-hoc non sequitur analysis confirmed this.

To our knowledge, this is the first study to examine the factorial validity of youth tobacco use survey measures of smoking-related self-efficacy, beliefs, and intention among a sample of only high school smokers. Evidence of validity for smoking-related self-efficacy and intention measures was found for nonsmoking middle school students previously. Measures similar to our smoking-related beliefs scale have been validated for high school samples of smokers (e.g., Smoking Consequences Questionnaire, Myers et al., 2003) and mixed smokers (smoking-related cognitions, MacPherson and Myers, 2004). Our findings extend the literature by suggesting that well-known youth tobacco survey measures of self-efficacy, beliefs, and intention are consistent with the conceptual definitions of these theoretical constructs for high school current and daily smokers.

This is also the first study to examine the structural interrelationship among the constructs in high school current smokers. Our findings suggest that beliefs about the social or emotional

benefits of smoking directly influence intention to continue smoking. This is supported theoretically and empirically. Smoking-related beliefs have been associated with intention to smoke in studies of youth who had just begun to smoke (O'Callaghan et al., 1999) and a mixed sample of youth smokers and nonsmokers (beliefs labeled as 'instrumental value of smoking', Tyc et al., 2004). Only one other study has demonstrated this relationship among a sample of high school smokers (Hanson, 2005).

Smoking-related self-efficacy did not have a significant, direct path to intention as was hypothesized. Rather, it had a modest, indirect effect on intention to smoke through smoking-related beliefs. This finding suggests that youth smokers who do not possess the self-efficacy to avoid smoking believe smoking offers emotional or social benefits; in turn these smokers intend to continue smoking. Lack of a direct effect of smoking-related self-efficacy on intention is supported in the literature. O'Callaghan et al. (1999) found that self-efficacy (labeled perceived behavioral control) did not significantly predict intention to smoke. Fagan et al. (2003) found that self-efficacy to avoid smoking was also associated with intention to quit smoking in a bivariate analysis, but the association did not hold in multivariate models. Further prospective studies are needed to determine if this finding occurs in other youth smoking samples.

The study has several limitations. The self-efficacy and beliefs scales in this study only captured the emotional and social aspects of smoking. The self-efficacy measure does not capture many of the challenging situations often found in other smoking-related self-efficacy measures (e.g., craving). Similarly, the beliefs measure did not represent some of the content measured in the widely accepted Smoking Consequences Scale (Myers et al., 2003) or the adult smoking decisional balance scale (Velicer, DiClemente, Prochaska, and Brandenburg, 1985). Additionally, the data were cross-sectional and did not allow for the interpretation of prediction, but for a reliable association (Hoyle and Panter, 1995). Our sample is one of convenience and the student participation rate for the parent study was 70%, lower than other similar school-based survey response rates (e.g., 87.6%, Eaton, Lowry, Brener, Grunbaum, and Kann, 2004). Given these limitations, caution should be taken when generalizing the findings to other adolescent smoking samples.

In conclusion, the smoking-related self-efficacy, beliefs, and intention to continue smoking scales validated in this study may be useful to assess a high school smoker's ability to avoid or refrain from smoking in emotional or social situations; to assess their associated beliefs toward smoking; and to assess their intention to continue smoking. Finally, smoking-related beliefs and self-efficacy may be important constructs to influence intention to continue smoking, a proxy for youth smoking cessation. Additional prospective studies are needed before implications for youth smoking cessation intervention can be suggested.

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Figure 1.
Integrative Conceptual Model

Figure 2.
A priori Measurement Model

Figure 3.
Diagram of final CFA measurement model for high school current smokers

($\chi^2=418.57$; $df=32$; RMSEA=0.06; CFI=0.97; and NNFI=0.96)

Figure 4a: A priori model

($\chi^2=418.57$; $df=32$ RMSEA=0.06, CFI=0.97, and NNFI=0.96)

Figure 4b: Post hoc model

Figure 4.
A priori and post hoc models among current smokers

Cross-validation of independent samples of high school adolescent smokers from the Texas Youth Tobacco Survey

Table 1

Model	Description	χ^2/df	$\Delta^2/\Delta df$	p	CFI	NNFI	RMSEA
1	Baseline model	310.38/64		--	.97	.97	.05
2	Factor loadings constrained	325.16/74	14.78/10	.14	.97	.97	.05
3	Factor variance, covariance constrained	327.56/77	2.40/3	.19	.97	.97	.05

Note. CFI = Comparative Fit Index; NNFI = Bentler and Bonett's Non-normed Fit Index; RMSEA = Root Mean Squared Error of Approximation.

Table 2
Factor loadings, means, and standard deviations for the final measurement model

Construct	Items	Item labels	Validation sample (N=1383)				Calibration sample (N=1384)			
			Loadings	X	SD	R ²	Loadings	x	SD	R ²
Self-efficacy to avoid smoking	If your friends offer you a cigarette, are you able not to smoke?	Resist if friend offers	0.78	2.0	1.1	0.61	0.78	2.0	1.2	0.60
	If you are with friends who smoke, are you able not to smoke?	Resist if friend smokes	0.70	2.1	1.2	0.49	0.71	2.1	1.2	0.50
Smoking-related beliefs	If you feel nervous, are you able not to smoke?	Resist if nervous	0.85	2.3	1.2	0.73	0.86	2.3	1.2	0.74
	Do you believe cigarette smoking helps people relax?	Helps to relax	0.59	2.6	1.1	0.35	0.55	2.6	1.1	0.30
	Do you think smoking cigarettes helps people feel more comfortable at parties and in other social situations?	Feel comfortable	0.80	2.2	1.0	0.64	0.74	2.1	0.9	0.55
	Do you think young people who smoke cigarettes have more friends?	More friends	0.87	2.9	0.9	0.76	0.93	2.9	0.8	0.86
Intention to continue smoking	Do you think smoking cigarettes makes young people look cool or fit in?	Look cool, fit in	0.82	3.0	0.9	0.67	0.75	3.1	0.9	0.57
	Do you think you will smoke a cigarette at any time during the next year?	Smoke next year	0.80	1.4	0.6	0.64	0.78	1.4	0.6	0.61
	Do you think you will be smoking cigarettes 5 years from now?	Smoke next 5 years	0.93	2.4	0.8	0.87	0.94	2.3	0.8	0.89
	If one of your best friends offered you a cigarette, would you smoke it?	Best friend offers	0.91	1.5	0.7	0.84	0.91	1.5	0.7	0.83

Note: x = mean, SD= standard deviation R² = squared multiple correlation