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Improving Understanding of the Quitting Process: Psychological Predictors of Quit Attempts versus Smoking Cessation Maintenance among College Students

Hyoung S. Lee¹, Delwyn Catley², and Kari Jo Harris³

¹University of Washington Tacoma

²University of Missouri – Kansas City

³The University of Montana

Abstract

This study examined motivation, positive and negative outcome expectations of quitting, and self-efficacy as predictors of quit attempts and cessation maintenance in a smoking cessation intervention for college students ($N = 303$). Psychological measures assessed at baseline were used to predict smoking behavior outcomes. Analysis of Variance (ANOVA) and logistic regression analysis revealed that motivation and self-efficacy were strong, differential predictors of quit attempts and cessation maintenance, respectively. This study extends the previous findings regarding psychological predictors of quitting processes to college students, and suggests the need for interventions tailored according to phases of quitting processes.

Keywords

Quit attempt; cessation maintenance; motivation; outcome expectation; self-efficacy

Introduction

Assisting smokers to quit smoking is an important public health goal (Sherman, Yano, Lanto, Simon, & Rubenstein, 2005). Providing effective assistance requires a thorough understanding of the factors that affect quitting. Recently there has been a call to distinguish between the different phases of the quitting process when conducting research to develop and test treatments (Baker et al., 2011). For example, factors that predict a quit attempt may differ from factors that predict ultimate cessation maintenance (Borland et al., 2010; Vangeli, Stapleton, Smit, Borland, & West, 2011). It is important for developing effective interventions that assist smokers to quit to understand which factors influence which phases of quitting.

Address correspondence to Dr. Hyoung S. Lee, Interdisciplinary Arts and Sciences, University of Washington Tacoma, 1900 Commerce Street Box 358436, Tacoma, WA 98402, USA; lee@uw.edu.

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

Consistent with this framework, prior research indicates that important psychological factors such as motivation or desire to quit relate differently to quit attempts versus cessation maintenance. Many studies have found that motivation, while strongly related to quit attempts, was not independently related to cessation maintenance (Amodei & Lamb, 2005; Borland et al., 2010; Etter, 2004; Hyland et al., 2006; West, McEwen, Bolling, & Owen, 2001; Zhou et al., 2009). However, other studies have found that motivation was associated with cessation maintenance (Boardman, Catley, Mayo, & Ahluwalia, 2005; Williams, Gagné, Ryan, & Deci, 2002). One explanation for these mixed findings is that while motivation to quit is a necessary precursor to ultimately quitting, motivation is likely to be more strongly and consistently related to the decision to initiate a quit attempt than ultimate cessation maintenance because cessation maintenance is affected not only by the decision to quit but also the many factors that influence maintenance and relapse (e.g., exposure to smoking cues, stressful events, withdrawal symptoms).

In addition to motivation conceptualized as strength of desire, motivation has also been conceptualized in terms of anticipated outcomes of making the behavior change (Bandura, 1986; Vroom, 1964). Several studies have investigated the effect of outcome expectations on quit attempts and cessation maintenance. Some have found that positive outcome expectations or pros of quitting (also sometimes framed as negative outcome expectations for *continued smoking*) predicted quit attempts (Dijkstra & Buunk, 2008; Sutton, Marsh, & Matheson, 1987; West, McEwen, Bolling, & Owen, 2001) but not cessation maintenance (West, McEwen, Bolling, & Owen, 2001). In other studies in which the quitting process was further divided based on the stages of change (Prochaska, DiClemente, & Norcross, 1992), positive outcome expectations of quitting were related to the progression through the early stages of the quitting process (i.e., precontemplation to contemplation stage) but not progression to the action (i.e., a quit attempt) or maintenance stages (Dijkstra, Conijn, & de Vries, 2006; Dijkstra, de Vries, & Bakker, 1996; Dijkstra, Tromp, & Conijn, 2003). These results indicate that positive outcome expectations are more likely to be related to earlier phases of the quitting process, promoting motivation to quit and perhaps indirectly quit attempts (Sutton, Marsh, & Matheson, 1987) rather than cessation maintenance.

Negative outcome expectations or cons of quitting have received less attention in prior research, but one study found that having greater negative outcome expectations was related to a reduced likelihood of cessation maintenance (Dijkstra, de Vries, & Bakker, 1996). In this study negative outcome expectations were not related to quit attempts suggesting that negative outcome expectations may not play the same role as positive outcome expectations and are less likely to affect the initial decision to quit.

Another important psychological variable that has been found to be central to behavior change is self-efficacy, which refers to one's judgment that one can perform a particular behavior (Bandura, 1986). Self-efficacy has been predictive of cessation maintenance in numerous studies (Amodei & Lamb, 2005; Boardman, Catley, Mayo, & Ahluwalia, 2005; Etter, Bergman, Humair, & Perneger, 2000; Schnoll et al., 2011) but has been less predictive of attempting to quit (Borland & Balmford, 2005; De Vries & Mudde, 1998; Dijkstra, de Vries, & Bakker, 1996; Dijkstra, Tromp, & Conijn, 2003; Stuart, Borland, & McMurray, 1994). However, there have also been some exceptions to these results with a few longitudinal

cohort studies of smokers finding that self-efficacy was either not related to cessation maintenance (Borland, Owen, Hill, & Schofield, 1991; Hyland et al., 2006) or even negatively related to cessation maintenance (Staring & Breteler, 2004). The discrepancy between the results of these cohort studies and most other studies may be due to the presence in cohort study samples of smokers who were confident that they could quit, but did not quit because they did not have sufficient motivation to make an attempt. This would most likely diminish the strength of association between self-efficacy and cessation maintenance. However, in intervention studies participants are generally more likely to be motivated to try to quit and cessation maintenance may therefore be more strongly influenced by differences between participants in self-efficacy to overcome the challenges of quitting. Taken together these findings suggests that self-efficacy is important for successful maintenance of cessation among those who are trying to quit, but may not be important if smokers lack sufficient motivation to make a quit attempt.

In summary, research indicates that psychological variables relate differently to quit attempts than cessation even though studies diverge on the specifics. However, methodological differences and a preponderance of cross-sectional studies (Zhou et al., 2009) hamper a full understanding of quit attempts and cessation maintenance as inter-related processes. In a prospective study there are 3 potential inter-related outcomes: no quit attempt is made, a quit attempt is made but there is no maintenance of cessation, and a quit attempt is made with maintenance of cessation. A full understanding of the quitting process requires an understanding of how psychological variables such as motivation and self-efficacy relate to these possible outcomes.

Another limitation of the literature in this area is that it has thus far focused only on adult smokers. In the present study we focus on college student smokers who tend to be occasional smokers with lower nicotine dependence, which is related to lower motivation to quit and higher self-efficacy (Moran, Wechsler, & Rigotti, 2004; Pinsker et al., 2013; Waters, Harris, Hall, Nazir, & Waigandt, 2006). Among these smokers it is possible that motivation plays a greater role for both quit attempts and cessation maintenance because once motivated to make a quit attempt their lack of nicotine dependence may reduce the difficulty they have in achieving cessation maintenance, diminishing the importance of self-efficacy.

The aim of this study was to examine motivation, outcome expectations, and self-efficacy as predictors of quit attempts and cessation maintenance among college students. Students were enrolled in a smoking cessation intervention study; however, in these analyses we focused on the effects of baseline psychological variables on smoking behavior outcomes independent of treatment effects. Based on the previous studies, we hypothesized that motivation and positive outcome expectations would predict quit attempts, while self-efficacy and negative outcome expectations would predict cessation maintenance. However, we also recognized that the predominance of low motivation and low nicotine dependence might also lead to motivation being more strongly related to both quit attempts and cessation maintenance in this population.

Methods

Participants

Data for this study was drawn from a cluster randomized trial comparing Motivational Interviewing for smoking cessation to Motivational Interviewing for increasing fruit and vegetable intake (Harris et al., 2010). Participants were college students in 30 Greek chapters (13 sororities and 17 fraternities) at one large Midwestern university. Eligibility criteria included smoking cigarettes one or more days during the past 30 days, not using medications to help quit smoking during the past 30 days, being at least 18 years old, expecting to be enrolled in college for the entire academic year, and being interested in participating in a health study.

Of the participants enrolled ($N = 452$), participants who met the eligibility criteria at screening, but smoked no cigarettes during the 30 days prior to the baseline survey ($n = 5$) were excluded from the present study. Participants who were not followed up at 3 months or 6 months ($n = 144$) were also excluded resulting in a sample of 303 participants. The mean age of participants was 19.47 ($SD = 1.06$), 173 (57.1%) were males, 288 (95.0%) were whites, and participants were recruited among all school years (Freshmen: $N = 65$, 21.5%; Sophomores: $N = 111$, 36.6%; Juniors: $N = 80$, 26.4%; Seniors: $N = 44$, 14.5%; and others: $N = 3$, 0.7%). On average they smoked 62.9 ($SD = 109.06$) cigarettes during 11.7 ($SD = 10.34$) days of the past 30 days. Participants who were included in data analysis were not significantly different from those who were not included in terms of demographics, smoking level, and psychological variables.

Measures

Demographics that were assessed included each participant's gender, age, ethnicity, and school year (freshman, sophomore, etc.).

Motivation at baseline was assessed using a single-item Motivation to Quit Smoking scale (Boardman, Catley, Mayo, & Ahluwalia, 2005). Participants were asked to answer the question (i.e., "How motivated are you to quit smoking?") on 11-point Likert-type scale ranging from 0 (not at all motivated to quit) to 10 (very motivated to quit). Research has found that a single item has validity equivalent to a series of questions in assessing motivation to quit (Sciamanna, Hoch, Duke, Fogle, & Ford, 2000).

Outcome expectations at baseline were assessed using a 29-item Outcome Expectations scale (Dijkstra, de Vries, & Bakker, 1996). Participants were asked to respond to the outcome descriptions (e.g., "If I quit smoking, my health will improve") on 4-point Likert-type scale ranging from 1 (yes, my health will improve a lot) to 4 (no, my health will not improve). The Outcome Expectations scale consists of two subscales: Pros of Quitting (19 items) and Cons of Quitting (10 items). Scores for the two subscales were obtained by summing the 19 items for Pros of Quitting and the 10 items for Cons of Quitting. Higher scores therefore correspond to higher positive and negative outcome expectations of quitting. In the present study the alpha coefficient was .90 for Pros of Quitting and .76 for Cons of Quitting.

Self-efficacy at baseline was assessed using the 9-item short form of Situational Temptation Inventory (Velicer, DiClemente, Rossi, & Prochaska, 1990). Participants were asked to indicate their degree of temptation (e.g., “How tempted you may be to smoke tobacco when you first get up in the morning?”) on 5-point Likert-type scale ranging from 1 (not at all tempted) to 5 (extremely tempted). A total score was obtained with higher scores indicating higher self-efficacy. The alpha coefficient in this study was .87 for the total score.

Quit attempts were assessed at each counseling sessions as well as at follow-up using a single-item (Ahluwalia, Harris, Catley, Okuyemi, & Mayo, 2002; Centers for Disease Control and Prevention [CDC], 2007; Richter, Gibson, Ahluwalia, & Schmelzle, 2001). Participants responded to the question (i.e., “Since last visit, how many times have you seriously tried to quit smoking for at least 24 hours?”).

Smoking was assessed at baseline, each counseling session, and follow-up using a single-item (i.e., “Since the last visit, have you smoked any cigarettes at all?”). Answers to these questions were used to determine for each participant whether or not they had smoked between the last counseling session and the follow-up. The number of cigarettes and days smoked for the past 30 days were also assessed over past 30 days at the follow-up using the Timeline Follow-Back Method (Harris et al., 2009; Sobell & Sobell, 1992). In addition, at follow-up a “bogus pipeline” approach was used through the collection of saliva samples from all participants to reduce inaccurate reporting (Murray & Perry, 1987). At follow-up self-reported smoking status for one participant in the smoking condition was re-coded from being abstinent to continuing to smoke because cotinine values were higher than the 15 ng/ml expected for nonsmokers and there was no report of other tobacco use.

Smoking behavior assessments were used to classify the participants into three groups at the 6-month follow-up. Participants who did not report any quit attempt at the time of the counseling sessions were placed in the “no quit attempt (NA, $N = 179$)” group, participants who reported at least one quit attempt at the time of the counseling sessions but who reported smoking more than one cigarette for the last three months at the 6-month follow-up were placed in the “quit attempt but no maintenance (ANM, $N = 109$)” group, while those who reported making a quit attempt at the time of the counseling sessions and also reported not smoking in the last 3 months at the 6 month follow-up were placed in the “quit attempt with maintenance (AM, $N = 15$)” group.

Procedures

Recruitment and retention procedures are described in detail elsewhere (Davidson et al., 2010; Varvel, Cronk, Harris, & Scott, 2008). In brief, screening for eligibility was conducted at sororities and fraternity chapter meetings. Participation of sororities and fraternities was incentivized with transportation vouchers or charitable contributions. Eligible students were invited to baseline assessment where they completed a computerized baseline survey that included demographic, psychological factors, and smoking behavior measures. Participants were then randomly assigned to 4 sessions of MI focused either on quitting smoking or focused on increasing consumption of fruits and vegetables. At the end of each intervention session and at a 6-month follow-up session, participants were asked to complete another computerized survey that included smoking behavior measures.

Data Analysis

Because participants were clustered within Greek chapters we calculated Intraclass Correlation Coefficients (ICC's) for outcome groups to determine whether multi-level modeling was necessary. For descriptive purposes and to verify independence of the measures, means and intercorrelations of the psychological predictor variables and level of smoking were determined prior to the main analysis. Because the focus of this study was on the relationships between baseline psychological variable and smoking outcomes independent of treatment, we also used chi-square tests to examine associations between treatment group and outcome group (NA, ANM, and AM) to determine whether treatment group should be included as a covariate in the main analyses.

To examine the associations between the psychological predictor variables and quit attempts and cessation maintenance we first examined whether there were differences in baseline levels of the psychological predictors among the three outcome groups using one-way Analysis of Variance (ANOVA). Significant differences among groups were followed up using the Scheffé test. To determine which predictor variables most strongly differentiated between the three possible smoking outcomes we conducted 3 separate logistic regression models in which the psychological variables assessed at baseline were used to differentiate the 3 outcome groups. Treatment group was used as a covariate in the ANOVA and regression analyses to control for treatment group effects. Because of the potential influence of degree of nicotine dependence on the findings we also repeated analyses controlling for level of smoking (a proxy for nicotine dependence).

Results

Preliminary Analyses

ICC's for outcome groups were close to zero, .03 for NA vs. ANM, .00 for NA vs. AM, and .05 for ANM vs. AM. Since the nesting effects of chapters on outcome groups were very low, multi-level modeling was not employed in the subsequent analysis.

Means and intercorrelations of the baseline psychological variables are presented in Table 1. Motivation was positively correlated with positive outcome expectations ($r = .39, p < .001$), while self-efficacy was negatively associated with negative outcome expectations ($r = -.58, p < .001$). Other intercorrelations among psychological factors were not significant. Level of smoking was significantly correlated with negative outcome expectations and self-efficacy ($r = .38$ and $-.58, ps < .001$, respectively).

Relationship between Psychological Variables and Quit Attempts and Cessation Maintenance

Outcome group differences in psychological predictors were examined after controlling for treatment groups, and the results are presented in Table 2. The NA group showed significantly lower levels of motivation than the other two groups ($F(2, 299) = 13.608, p < .001$). The AM and NA group showed significantly higher levels of self-efficacy than the ANM group ($F(2, 299) = 12.492, p < .001$), while the NA group showed significantly lower levels of negative outcome expectations than the ANM group ($F(2, 299) = 3.910, p < .05$).

Inclusion of the level of smoking as a covariate did not have an impact on the significance of the group differences in motivation and self-efficacy ($F(2, 298) = 13.960$ and 8.439 , $ps < .001$, respectively), but the difference in negative outcome expectations was eliminated ($F(2, 298) = 2.025$, $p = .13$).

The results of the logistic regression analyses to determine which predictor variables most strongly differentiated the three possible smoking outcomes are displayed in Table 3. After controlling for treatment effects, motivation significantly differentiated the NA group from the ANM group ($OR = 1.27$, $p < .001$), while self-efficacy significantly differentiated the AM and NA groups from the ANM group ($OR = 1.20$ and 0.94 , $ps < .01$, respectively). The significance of these results was not changed after controlling for the level of smoking.

Discussion

In this study, motivation, self-efficacy and positive and negative outcome expectancies were compared in their prediction of attempting to quit versus maintaining cessation among college student smokers. Our primary analyses confirmed our hypothesis that these psychological factors would have a differential impact on the different steps in the quitting process. As predicted, motivation was more strongly related to quit attempts than cessation maintenance. Specifically, motivation was higher in students who made at least one attempt to quit smoking than in those who did not make any attempts, regardless of the ultimate success or failure of the quit attempt. This is consistent with studies that have reported that motivation was related to quit attempts, but not cessation maintenance (Amodei & Lamb, 2005; Borland et al., 2010; Etter, 2004; Hyland et al., 2006; West, McEwen, Bolling, & Owen, 2001; Zhou et al., 2009).

In contrast to motivation and consistent with our hypothesis, self-efficacy was higher in students who attempted to quit and maintained abstinence than in those who attempted to quit but failed to maintain abstinence even after controlling for level of smoking. Furthermore, self-efficacy was the only predictor that differentiated students who maintained abstinence from those who made quit attempts but failed to maintain abstinence. This is consistent with prior studies that have reported that self-efficacy was related to cessation maintenance, but not quit attempts (Borland & Balmford, 2005; De Vries & Mudde, 1998; Dijkstra, de Vries, & Bakker, 1996; Dijkstra, Tromp, & Conijn, 2003; Stuart, Borland, & McMurray, 1994).

Interestingly, self-efficacy was also higher in students who did not make any attempts than in those who attempted to quit but did not maintain the cessation. Considering that the latter group was more motivated to quit smoking than the former group, this finding supports our supposition that some of the inconsistent findings from prior studies investigating the relationships between self-efficacy and quitting may be due to the inclusion in some studies of smokers with little or no motivation to quit smoking. There may be no significant or consistent relationship between self-efficacy and cessation maintenance because those with high self-efficacy may not have been motivated enough to attempt to quit (Borland, Owen, Hill, & Schofield, 1991). This outcome may be especially likely in predominantly non-daily smoking college students who tend to be low in motivation to quit yet confident they can

succeed should they decide to quit (Moran, Wechsler, & Rigotti, 2004; Waters, Harris, Hall, Nazir, & Waigandt, 2006).

The results for outcome expectations were not consistent with hypotheses. Although prior studies have found evidence that positive outcome expectations relate most strongly to increasing readiness to quit and quit attempts (Dijkstra & Buunk, 2008; Sutton, Marsh, & Matheson, 1987; West, McEwen, Bolling, & Owen, 2001) positive outcome expectations were not significantly different and did not discriminate between outcome groups. Negative outcome expectations for quitting were lower in students who did not make attempts than those who made at least one attempt to quit but failed to maintain abstinence, although this result should be interpreted with caution because the significant association was eliminated after controlling for level of smoking. Although we anticipated negative outcome expectations would, as in prior research (Dijkstra, de Vries, & Bakker, 1996), be related to cessation maintenance, the result is inconsistent with the finding that self-efficacy was higher in those who did not attempt to quit. Low motivated college smokers with high self-efficacy appear also to have lower negative outcome expectations.

Although not predicted, this finding indicates negative outcome expectancies did operate in part, similarly to self-efficacy. Our hypothesis was that positive outcome expectations would operate similarly to motivation and negative outcome expectations would operate similarly to self-efficacy. Consistent with this, intercorrelations between the predictor variables revealed that positive outcome expectations were most highly correlated with motivation and negative outcome expectations were most highly correlated with self-efficacy. One interpretation of our results is that, rather than contradicting our hypothesis, the findings suggest that outcome expectations are relatively weaker discriminators of smoking outcomes.

Taken together the overall findings suggest that motivation is likely necessary but not sufficient for ultimate cessation. Making a quit attempt is easier to accomplish and can be driven more by motivation, whereas cessation maintenance is more difficult and requires not only sufficient motivation to make a quit attempt, but also sufficient self-efficacy to succeed in the face of the ongoing challenges. Study results also extend the prior literature to college students and suggest that despite their lower average smoking levels and motivation to quit, the predictor variables appear to operate similarly to the way they operate among other smokers. Our sample did not include a sufficient number of daily and higher motivated smokers to allow a direct comparison across different types of smokers. However, if our understanding of the quitting process is correct, for the typical non-daily, high self-efficacy college students, motivation should be the most important determinant of both quit attempts and cessation maintenance (which should be highly correlated). Comparisons across particular sub-groups of smokers (such as daily versus non-daily) should be the focus of future research.

Another limitation of our study is that we examined only two phases of the quitting process (i.e., quit attempts and longer term cessation maintenance). For example, cessation maintenance in the first several days after quitting is experienced differently from cessation maintenance at three or six months after quitting in terms of withdrawal symptoms,

temptations to smoke, and cessation fatigue (Borland & Balmford, 2005; Piasecki, Fiore, McCarthy, & Baker, 2002). There is evidence that self-efficacy is related to cessation maintenance only at the early stage of the quitting process, and loses its influence over time, suggesting that the relationship between self-efficacy and cessation maintenance may not be linear (Stuart, Borland, & McMurray, 1994; Weinstein, Rothman, & Sutton, 1998). More research is needed to identify the critical phases of the quitting process and how psychological variables relate to them.

A final limitation of our study concerns the sample we had available. The sample we used had relatively few participants in the AM group ($N = 15$), which may not be adequately representative of college smokers, and there was a significant level of attrition in our sample. Although the attrition analysis showed no significant differences in baseline characteristics between the participants who attended all follow-ups and those who missed one or more follow-ups, it is unclear how the results might have differed had those participants who dropped out been included.

Although the general insights regarding the role of motivation and self-efficacy are not necessarily novel, this study provides important empirical validation of the way these variables operate across two important phases of quitting. It also helps to clarify discrepant findings in the extant literature and highlights some unique features of college student smoking behaviors.

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Table 1
Means and Intercorrelations of Psychological Factors and Smoking at Baseline (*N* = 303)

Variables	<i>M</i> (<i>SD</i>)	Positive OE	Negative OE	Self-efficacy	No. Cigarettes
Motivation	5.56 (2.91)	0.39***	-0.05	-0.01	-0.02
Positive OE	55.54 (11.47)		0.08	0.00	0.03
Negative OE	13.01 (3.48)			-0.58***	0.38***
Self-efficacy	32.08 (7.86)				-0.52***
No. Cigarettes	3.31 (3.78)				

Note. Positive OE = Positive outcome expectations; Negative OE = Negative outcome expectations; No. Cigarettes = Number of cigarettes smoked for the last 30 days at baseline.

* *p* < .05,
** *p* < .01,
*** *p* < .001

Table 2

Group Differences in Psychological Predictors after Controlling for Treatment

Variables	Group								F(2,299)	Post Hoc		
	NA (N = 179)				ANM (N = 109)						AM (N = 15)	
	M (SD)	Adj. M (SE)	M (SD)	Adj. M (SE)	M (SD)	Adj. M (SE)	M (SD)	Adj. M (SE)				
Motivation	4.87 (3.12)	4.86 (0.21)	6.53 (2.21)	6.55 (0.27)	6.73 (2.52)	6.75 (0.72)			13.608***	NA < ANM, AM		
Positive OE	54.31 (12.27)	54.31 (0.86)	57.28 (10.01)	54.28 (1.10)	57.67 (10.12)	57.67 (2.95)			2.529			
Negative OE	12.61 (3.53)	12.58 (0.26)	13.71 (3.43)	13.75 (0.33)	12.67 (2.50)	12.70 (0.89)			3.910*	NA < ANM		
Self-efficacy	33.35 (7.78)	33.43 (0.57)	29.40 (7.44)	29.29 (0.73)	36.40 (6.23)	36.32 (1.95)			12.492***	ANM < NA, AM		

Note. NA = No Attempt group; ANM = Attempt but No Maintenance group; AM = Attempt and Maintenance group; Positive OE = Positive outcome expectations; Negative OE = Negative outcome expectations.

* $p < .05$,

** $p < .01$,

*** $p < .001$

Table 3

Odds Ratios (95% Confidence Intervals) for Psychological Predictors after Controlling for Treatment

Variables	Models		
	ANM vs. NA	AM vs. NA	AM vs. ANM
Motivation	1.27 (1.14 – 1.42) ***	1.21 (0.99 – 1.49)	0.97 (0.74 – 1.27)
Positive OE	1.00 (0.98 – 1.03)	1.00 (0.95 – 1.05)	1.02 (0.95 – 1.10)
Negative OE	1.03 (0.94 – 1.13)	1.09 (0.92 – 1.29)	1.04 (0.83 – 1.29)
Self-efficacy	0.94 (0.90 – 0.98) **	1.07 (0.98 – 1.16)	1.20 (1.07 – 1.34) **

Note. NA = No Attempt group; ANM = Attempt but No Maintenance group; AM = Attempt and Maintenance group; Positive OE = Positive outcome expectations; Negative OE = Negative outcome expectations.

*
 $p < .05$,

**
 $p < .01$,

 $p < .001$