Short Communication

Task and barrier self-efficacy among treatment-seeking smokers with current, past or no psychiatric diagnosis

M. Clyde [a,b], H. Tulloch [a,b,c,*], R. Reid [a], C. Els [d], A. Pipe [a,c]

[a] University of Ottawa Heart Institute, Canada
[b] University of Ottawa, Department of Psychology, Canada
[c] University of Ottawa, Faculty of Medicine, Canada
[d] University of Alberta, Department of Psychiatry Medicine, Canada

HIGHLIGHTS

- We concurrently assess and compare both task and barrier self-efficacy.
- Self-efficacy compared for those with no, past or current psychiatric diagnoses.
- Those with a currentdiagnosis had significantly lower barrier self-efficacy.
- Those with a lifetime diagnosis gage task and barrier self-efficacy differently.

ARTICLE INFO

ABSTRACT

Objective: Individuals with a lifetime diagnosis of mental illness smoke at rates greater than the general population, and have more difficultly quitting. Cessation self-efficacy has been linked with positive cessation outcomes and can be assessed as either task (confidence to quit) or barrier self-efficacy (confidence to quit in the face of obstacles). We investigated differences in self-efficacy among smokers with a current, past or no lifetime diagnosis of psychiatric illness.

Methods: 737 treatment-seeking smokers provided demographic info and smoking history, and were assessed for nicotine dependence, motivation to quit, and task and barrier self-efficacy (Smoking Self-Efficacy Questionnaire; SEQ-12) for smoking cessation. Current and past psychiatric diagnoses were assessed with the Mini International Psychiatric Interview (M.I.N.I. 6.0). ANOVA, chi-square and correlations were calculated for the smoking-related variables across the psychiatric categories.

Results: Those with a current diagnosis smoked more cigarettes and were highly nicotine dependent. These individuals had lower barrier self-efficacy compared to those with past or no diagnosis; no differences between groups were observed on task self-efficacy. Motivation to quit was significantly correlated with task self-efficacy in all 3 groups, but with barrier-self efficacy only among those with no lifetime diagnosis of psychiatric illness.

Conclusion: Our results highlight the differences in task and barrier cessation self-efficacy in treatment-seeking smokers. Those with a current psychiatric diagnosis have less confidence in their ability to quit when confronting barriers, especially those reflecting internal states. These results highlight the need for targeted interventions to improve cessation self-efficacy, an important determinant of health behavior change.

1. Introduction

Despite an overall decline in smoking in many communities, smoking remains particularly high among individuals with mental illness;

prevalence rates are 2–3 times higher than those in the general population (Lawrence, Mitrou, & Zubrick, 2009; Leonard et al., 2001). Nearly 50% of all cigarettes purchased each year are consumed by this population (Lasser et al., 2000); this suggests that current interventions are not as effective within this at-risk population (Cook et al., 2014), and a better understanding of modifiable factors related to smoking cessation is needed.

One factor strongly associated with smoking cessation outcomes is self-efficacy (DiClemente, Prochaska, & Gibertini, 1985; DiClemente, Fairhurst, & Piotrowski, 1995; Elfeddali et al., 2012), the belief in one's

* Corresponding author at: University of Ottawa Heart Institute, Prevention and Rehabilitation Centre, 40 Ruskin Street, Ottawa, Ontario K1Y 4W7, Canada. Tel.: +1 613 798 5555x19705.
E-mail address: hetulloch@ottawaheart.ca (H. Tulloch).

ability to complete a task at hand and to reach one's goals (i.e. task self-efficacy). An expansion of this definition, sometimes referred to as barrier self-efficacy (Bandura, 1990), posits not only the individual's confidence in their ability to achieve their goal but also in their confidence to overcome the barriers that can hinder goal achievement.

Task self-efficacy is commonly assessed by a single item, whereas barrier self-efficacy measures tend to be multi-item scales (Gwaltney et al., 2009) that assess self-efficacy across challenging circumstances (e.g. with friends who smoke and when feeling depressed). Although correlated, these two assessment methods might be measuring slightly different aspects of self-efficacy. In a recent review of the smoking cessation self-efficacy literature, a small (but insignificant) trend emerged in which single-item (task) questions better predicted future abstinence when directly compared with multi-item measures (Gwaltney et al., 2009). More information is needed to elucidate if these two measures differ in order to better understand cessation self-efficacy. Independent of how cessation self-efficacy is assessed, it has been shown to be a robust predictor of future quit attempts, reduced relapse and abstinence outcome (Baer, Holt, & Lichtenstein, 1986; Cupertino et al., 2012; DiClemente et al., 1985, 1995; Elfeddali et al., 2012).

One major gap within smoking cessation self-efficacy research is how this measure performs in individuals who have a mental illness. The few studies that have explicitly investigated self-efficacy in this population have found scores to be attenuated, for example in depressed smokers (Haukkala et al., 2000) and among inpatients with schizophrenia (Mann-Wrobel et al., 2011). The relationship between mental illness and cessation self-efficacy remains complex and poorly characterized.

The present study investigated task and barrier cessation self-efficacy in treatment-seeking smokers with current, past or no lifetime diagnosis of mental illness. We also examined the relationship between task and barrier self-efficacy and smoking-related variables by psychiatric diagnosis. Determining if there are differences across mental health status on task and barrier self-efficacy will help clarify the role that self-efficacy may play in smoking cessation interventions.

2. Methods

This manuscript is based on data from smokers participating in the "*Flexible and extended dosing of nicotine replacement therapy (NRT) and varenicline in comparison to fixed-dose NRT for smoking cessation: The FLEX trial*," an RCT examining the effectiveness of varenicline, long-term combined NRT or NRT patch alone. A more detailed account of the trial's rationale and methods can be found elsewhere (Tulloch et al., 2014).

2.1. Study participants and recruitment

Participants were recruited via media announcements, the Quit Smoking Program at the University of Ottawa Heart Institute (UOHI), word of mouth and referrals from primary care physicians. Participants needed to be aged 18, smoking ≥10 cigarettes per day over the past 6 months, willing to make a quit attempt within 2–4 weeks following screening and provide informed consent. Exclusion criteria included current or past month (>72 consecutive hours) use/contraindication to the study medications, being pregnant, current or previous (past 3 month) substance abuse, and inability to read/write in English or French. This study received approval from the Ottawa Health Sciences Network Research Ethics Board.

2.2. Measures

2.2.1. Demographic information

Individuals completed questionnaires assessing demographic information including age, gender, education, marital and employment status.

2.2.2. Psychiatric diagnoses

Participants were assessed for current or lifetime psychiatric history using the Mini International Psychiatric Interview (M.I.N.I. 6.0.0; Sheehan et al., 1998), a structured interview to assess the presence of DSM-IV and ICD-10 psychiatric disorders. The M.I.N.I. has been shown to have high reliability and validity when compared to other structured clinical interviews for DSM-IV diagnoses (Sheehan et al., 2009). Participants who did not meet any psychiatric diagnostic criteria in their lifetime were classified as 'none', while individuals who met criteria were classified as either 'past' or 'current' psychiatric diagnosis.

2.2.3. Smoking variables

Participants reported the number of *cigarettes smoked per day*, number of *years smoking* and number of previous *quit attempts* in the past 12 months. *Nicotine dependence* was assessed via the 6-item Fagerstrom Test for Nicotine Dependence (FTND; Fagerstrom & Schneider, 1989). The FTND has been shown to have good reliability and validity compared to other measures of nicotine dependence (Pomerleau et al., 1994). *Motivation* to quit was assessed via the question "On a scale of 1 to 10, how motivated are you to quit smoking at the present time?" where 1 indicated being 'not motivated at all' and 10 indicating being 'completely' motivated. *Task self-efficacy* was assessed using the question "On a scale of 1 to 10, how confident are you that you could quit smoking completely if you wanted to?" with a score of 1 indicating 'not at all confident' and 10 indicating 'completely confident'. *Barrier self-efficacy* was assessed using the Smoking Cessation Self-Efficacy Questionnaire, a 12-item questionnaire with established reliability and validity (SEQ-12; Etter et al., 2000). Participants state how sure they are that they could refrain from smoking across different situations. The SEQ-12 is comprised of two factors (6-items each): internal stimuli (e.g. 'when I'm stressed') and external stimuli (e.g. 'when with other smokers'). The SEQ-12 has a total score of 60, with higher scores indicating higher barrier self-efficacy. The total score and sub-scale scores were used in the statistical analyses.

2.3. Statistical analyses

To account for the missing data (6% or less for all individual items), all analyses were carried out using the SPSS multiple imputation procedure (N = 5 imputed sets). Chi-square, ANOVA, and correlations were calculated for the smoking-related variables across the psychiatric categories.

3. Results

A total of 737 participants met the inclusion criteria and completed the study measures. Table 1 displays the demographic and smoking characteristics of our sample. Many of our participants (59%) were identified as having either a current (24.3%, N = 179) or past (34.7%, N = 256) psychiatric disorder. Those with a current psychiatric diagnosis were more likely to be female, single, have fewer years of formal education, and receiving disability benefits (all ps < 0.001). Those with a current diagnosis consumed more cigarettes per day and had higher dependence and lower barrier self-efficacy (overall and internal scale) than the other 2 groups. No other group differences were found.

Table 2 displays the Pearson correlations between the smoking-related variables across the three psychiatric diagnostic categories. As expected, there were significant (modest) correlations between task self-efficacy and barrier self-efficacy in all groups. Motivation was significantly positively correlated with task self-efficacy across all three groups; however, motivation was only significantly correlated with barrier self-efficacy among individuals with no lifetime diagnosis. Those meeting criteria for a current diagnosis had a significant negative correlation between barrier self-efficacy and both cigarettes smoked per