A Comparison of Addiction and Efficacy Oriented Messages for Smoking Cessation

by

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Abstract

Background: Tobacco use remains a major public health issue. Population-level efforts to curb tobacco use include media to promote smoking cessation. However, these campaigns (including tobacco package warning labels) commonly emphasize the addictiveness of nicotine and the difficulty of quitting with statements like "nicotine is as addictive as heroin and cocaine". Addiction oriented messages may have an iatrogenic effect on cessation by undermining behavioural precursors such as self-efficacy, cessation outcome expectations, behavioural control, and quit-aid efficacy.

Objectives: First, to determine the effects of addiction focused messages in comparison to efficacy enhanced messages and control messages on smokers' self-efficacy, cessation outcome expectations, behavioural control, and quit-aid efficacy. Second, to determine if the impact of addiction focused messages differ according to participant nicotine dependency level.

Methods: A sample of adult smokers (n>101) from Kitchener/Waterloo and Owen Sound were randomly assigned into one of three intervention conditions: addiction focused (M1), efficacy enhanced (M2), and control (M3). Outcome measures were collected at baseline, post intervention and 30-day follow-up and included: self-efficacy, outcome expectations, behavioural control, quit-aid efficacy, and outcome expectancies. The 30-day follow-up also included measures of smoking consumption, quit attempts and use of a quit-aid.

Results: Majority of the participants were males and between 18-25 years of age. Mean number of cigarettes smoked ranged from 12 to 15 across groups whereas the mean number of years smoked ranged from 12 to 17. General linear analyses revealed no significant effect of message type or nicotine dependence (as measured by the Fagerstrome Test for Nicotine Dependence) on the outcome variables of interest. However, when perceived addiction was substituted as the measure of nicotine dependence, the analysis revealed a main effect for nicotine dependence on self-efficacy post intervention and on cessation outcome expectations at follow-up. An interaction effect was found for outcome expectancy at post intervention.

Conclusion: The results of this study suggest that acute addiction oriented messages may not negatively impact smokers' self-efficacy, outcomes expectations, behavioural control, quit-aid efficacy, and outcome expectancies. However, this does mean that message orientation should be ignored when constructing smoking cessation messages. In fact, program designers are encouraged to employ messages that limit the use of addiction oriented statements such as "nicotine is as addictive as heroin and cocaine". Further research is required to examine the potential cumulative impact of addiction oriented messages on quitting behaviour and its precursors.

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Dedication

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Chapter 1

Introduction & Overview

1.1 Smoking as a Public Health Issue

Tobacco use is the largest preventable cause of premature death and morbidity in Canada (Health Canada, 2003). An estimated one out of every five Canadian deaths is related to smoking (Health Canada, 2003). Approximately half of all persistent smokers die as a result of their smoking and one quarter of these deaths will occur before the age of 60 (Doll, Peto, Boreham & Sutherland, 2004).

Smoking cessation results in immediate benefits as well as long-term gains. Smokers who quit reduce their risk of developing coronary heart disease, cancer, and other diseases within a few years of quitting (Health Canada, 2003). In addition to physical health gains, quitters experience an increase in psychological well being (Stewart, King, Killen & Ritter, 1995). Those who quit smoking experience better cognitive functioning, energy, sleep, self-esteem, and mental health as early as six months after quitting compared to those who continue to smoke (Stewart et al., 1995). Therefore, targeting interventions to help current smokers quit will result in more health gains and lives saved in the near future than interventions aimed at preventing the onset of smoking (Genugten et al., 2003).

Although the prevalence of smoking has significantly decreased over the past few decades, approximately 5.4 million Canadians currently smoke (Health Canada, 2003). About half of ever smokers surveyed by the Canadian Tobacco Use Monitoring survey reported that they had quit smoking however, a sizeable proportion of smokers reported never trying to quit (CTUMS, 2003).

1.2 Factors Related to Behaviour Change

There are differing hypothesis as to why smokers vary in their quit trajectories. Theories such as Social Cognitive Theory (SCT) and Theory of Planned Behaviour provide insight into the necessary prerequisites for successful behaviour change (i.e. smoking cessation)

1.2.1 Self-Efficacy

Self-efficacy, according to Bandura (1977, 1986), is the confidence in one's ability to perform a task or overcome barriers to performing a task. Self-efficacy determines how much effort is exerted in a task and thus influences what level of performance is attained. There is substantial evidence suggesting that self-efficacy is a major basis for behaviour change; in fact, self-efficacy is one of the best predictors for smoking cessation (Shiffman, Balabanis, Paty, & Engberg, 2000; Amodel & Lamb, 2005). Many investigators have studied the relationship between self-efficacy and smoking cessation and found that a high level of self-efficacy for quitting was predictive of quitting and abstinence. For example Condiotte and Lichtenstein (1981) found participants' perceived self-efficacy for smoking cessation at the end of a treatment program was associated with smoking status at 3 month follow-up. The higher the level of perceived self-efficacy at the completion of treatment, the greater the probability that participants would remain abstinent at follow-up. Mothersill, McDowell, and Rosser (1988) demonstrated that post treatment self-efficacy predicted smoking abstinence at 1 year follow up

A longitudinal study of self-quitters demonstrated that self-efficacy can distinguish between smokers and former smokers (with smokers having lower self-efficacy) and short-term abstainers from long-term abstainers (with short-term abstainers having lower self-

efficacy) (Shiffman et al, 2000; Lichtenstien & Cohen, 1990). This finding was further supported by a study conducted by Hill and colleagues (1994) which found that smokers with a higher level of self-efficacy for becoming a non-smoker were twice as likely to abstain compared to smokers with a lower level of self-efficacy for quitting.

Self-efficacy has also been shown to be related to smoking lapse and relapse (Coelho, 1984; Shiffman et al., 2000). Shiffman and colleagues (2000) studied the dynamic effects of self-efficacy on smoking lapse and relapse and found that participants with lower baseline self-efficacy were more likely to lapse (Shiffman et al., 2000). On average, participants who never lapsed during the 4-week study period had higher daily self-efficacy scores than did lapsers on days when both groups were abstinent (Shiffman et al., 2000). Furthermore, participant progression from a lapse to a relapse was associated with a lower average self-efficacy score (Shiffman et al., 2000). Guilliver et al (1995) examined the relationship between psychosocial variables and relapse between 0-2 days, 3-7 days, 8-14 days, 15-30 days, 31-90 days, and 91-180 days in self quitters. Lower proximal self-efficacy scores consistently predicted relapse behaviour of participants even after controlling for baseline self-efficacy at all follow-up intervals.

A review by Stretcher, Devillis, Becker and Rosentock (1986) on self-efficacy and smoking cessation found that self-efficacy can be experimentally enhanced and that such manipulations increased favourable outcomes in smoking cessation. For example, Blittner and collegues (1978) successfully manipulated participants' self-efficacy for quitting. The researchers falsely told half their participants they were selected based on an assessment of their likelihood of quitting (efficacy enhancement) while the other half of the participants were told that they were selected for the study at random (in Stretcher et al., 1986). Both groups then

received a smoking cessation program. At post test (14 months) average smoking frequency was reduced by 67% for the efficacy enhanced group compared to 35% for the comparison group.

Self-efficacy for smoking cessation has also been manipulated by administering a placebo pill to an entire sample of participants (Chambliss & Murray, 1979 in Strecher et al., 1986). Later, half the participants were told that the cessation drug was a placebo and that their success was due to their own efforts and capabilities. This form of efficacy enhancement significantly reduced cigarette consumption.

A study by Dijkstra and Wolde (2005) examined the importance of self-efficacy interpretations on smoking cessation. Positive self-efficacy interpretations (PSEint) was measured by the frequencies of thoughts such as " I think my attempt to quit will be successful" while negative self-efficacy interpretations (NSEint) was measured by thoughts such as "I notice that I am not so sure anymore that I can quit". The researchers found that PSEint predicted quitting in smokers while NSEint predicted relapses in ex-smokers (Dijkstra and Wolde, 2005).

Maddux and Rogers (1983) manipulated participant self-efficacy via "educational essays" on cigarette smoking. The essays contained citations of surveys and research studies (factual and fabricated) that supported the conclusion that the reader would have relatively little difficulty or relatively great difficulty reducing or eliminating cigarettes smoking (high self-efficacy expectancy vs. low self-efficacy expectancy). The researchers found a significant main effect of self-efficacy expectancy on intentions to reduce or eliminate cigarette smoking. Participants in the high self-efficacy expectancy group had a significantly higher mean response on intentions compared to those in the low expectancy group (Maddux & Rogers

1983). Most recently, Amodel and Lamb (2005) conducted a study to predict initial abstinence (the number of study baseline days that breath CO < 4ppm) in smokers enrolled in a smoking cessation program. The researchers found that initial abstinence was predicted by self-efficacy even when other confounding variables were entered into the model.

1.2.2 Outcome Expectations

Outcome expectations are also important for behaviour change (Bandura, 1986). Outcome expectations are a person's expectations about the outcomes of a situation, action, or behaviour and are considered important motivators for behaviour (Glanz, Rimer & Lewis, 2002). Outcome expectancy on the other hand, is a related concept found in SCT, but refers to the value one places on a given outcome (Glanz, Rimer, & Lewis, 2002). In other words, outcome expectancy refers to how important an outcome is for a given individual or the relative value of a given outcome for an individual. For example stress reduction may be an outcome expectation a smoker may have for smoking (a belief that smoking will result in a particular benefit i.e. stress reduction). However, believing that a particular outcome will occur doesn't necessary result in a person valuing that outcome too. Although outcome expectations and expectancies are two different constructs of SCT, within the literature the terms have often been used interchangeably.

Most of the research on drug outcome expectations has been limited to alcohol use. Social cognitive factors in alcoholism have been explored by measuring the relationship between alcohol outcome expectancies (AOE) and initiation, maintenance, and cessation of alcohol use. Correlational and longitudinal evidence over the past two decades has supported the hypothesis that AOE are related to alcohol use (Kuther & Timoshin, 2003; Brown, 1993; Drakes & Goldman, 1993). Kuther and Timoshin (2003) found that most of the variance in

self-reported drinking by college students was explained by social cognitive factors (alcohol-related outcome expectancies, alcohol-related self-efficacy, and norms). Alcohol related outcome expectancies have also been shown to predict alcohol use in both adults and adolescents (Brown, 1985; Brown, Christiansen, & Goldman, 1987). A study of college students showed that drinking was positively associated with positive outcome expectancies of sexual enhancement, social assertiveness, physical or social pleasure, and tension reduction (Fromme et al., 1993).

Recent evidence from experimental studies that manipulated AOE and either measured self-reported alcohol consumption [Drakes & Goldmand, 1993; Massey & Goldman (1998) in Goldman, Christiansen, Brown, & Smith, (1991)] or observed alcohol consumption (Roehrich & Goldman, 1995) have further established the relationship between AOE and alcohol consumption. Drakes and Goldman (1993) used an expectancy challenge to modify AOE of male college students. Participants received three sessions of expectancy challenge. Participants actively engaged in social content in session one and content related to sex in session two. During these two sessions participants were asked to consume either an alcoholic or a placebo-alcoholic beverage. Participants were then asked to identify the substance consumed by everyone (including their own drink) by observing how people behaved afterwards. The final session was used to elaborate on the demonstration that behavioural effects of alcohol may be due to expectations as much as (or more than) pharmacology. This study, and those similar to it, not only showed that AOE can be manipulated but that drinking behaviour can be subsequently increased (Roehrich & Goldman, 1995) or decreased (Drakes & Goldmand, 1993; Massey & Goldman,1998 in Goldman, Christiansen, Brown, & Smith, 1991) as a result of the manipulation.

Research in the area of outcome expectations and smoking behaviour is limited. However, the few studies available suggest that the same relationship exists between smoking expectations and cigarette consumption as with AOE and alcohol consumption (Brandon, Wetten, & Barker, 1996; Copeland, Brandon, & Quinn, 1995; Palifai, 2002). Researchers have successfully predicted smoking behaviour in youth and older nicotine dependent smokers via self-reported outcome expectations (Brandon & Barker, 1991; Copeland, Brandon, & Quinn, 1995). Brandon et al (1996) found that after a 24-hour nicotine abstinence, students with stronger outcome expectations (sensory satisfaction and negative affect reduction) for smoking exhibited more smoking intensity. Copeland et al. (1995) found that positive outcome expectations for smoking (craving reduction, negative affect reduction, and sensory enhancement) were positively correlated with nicotine dependence in a sample of older experienced smokers. Wetter et al. (1994) found that negative outcome expectancies of smoking (negative consequences) were better predictors of smoking cessation during the first week after quitting while positive outcome expectancies of smoking became better predictors as the length of abstinence increased.

Smoking outcome expectancies related to health risks has been linked to smoking cessation intentions and actual quit attempts (Copeland, Brandon, & Quinn, 1995; Rose, Chassin, Presson & Sherman, 1995). Copeland and Bandon (2000) experimentally modified smoking expectancies to produce related changes in motivation to quit. The authors targeted health risk expectancies and negative affect reduction/mood management (Copeland & Brandon, 2000). Similar to Drakes and Goldman's (1993) approach to modify AOE, Cooper and Brandon (2000) also used an expectancy challenge. The researchers used (1) mood management (MM) to modify mood management expectancies and (2) a health consequences

expectancy manipulation (HC) to increase health consequence expectancies of smoking (Cooper & Brandon, 2000). The expectancy challenge information was presented via videos in each condition; the HC video contained interviews with ex-smokers who had experienced smoking-related illness and the MM video contained the same individuals stating that smoking was merely a short-term solution to dealing with negative mood. The researchers found that expectancies could be modified and these modifications produced changes in self-reported motivation and smoking behaviour (Copeland & Brandon, 2000).

1.2.3 Behavioural Control

Theories such as Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) suggest alternate determinants of behaviour change such as behavioural control. According to TPB, behavioural control is defined as a person's perceived control over a particular behaviour (Glanz, Rimer, & Lewis, 2002). The TPB and TRA have been applied to many health behaviours such as exercise behaviour, smoking, drug use, HIV/STD prevention behaviours, and mammography use (Glanz et al., 2003). Despite the successful application of this theory to the aforementioned health behaviours, this theory has not been widely applied to smoking cessation (Glanz et al., 2003). Godin, Valois, Lepage and Desharnais (1992), found that behavioural intention was related to smoking behaviour; however, this association disappeared when behavioural control was added to the model. Norman, Conner, and Bell (1999) studied a group of smokers attending a health promotion clinic. The researchers found that behavioural intention, subjective norms, perceived behavioural control, and perceived susceptibility were related to quit attempts. Behavioural control was also found to be correlated with the length of abstinence among those who attempted to quit (Norman et al., 1999). A recent study by Johnston and colleagues (2004) looked at behavioural intention and perceived

behavioural control as predictors of cardiovascular risk behaviours one year after diagnosis of coronary heart disease. The risk behaviours included exercise (self-reported plus an objective measure of fitness) and smoking cessation (cotinine confirmed). The study found that perceived behavioural control predicted exercise and smoking cessation but that behavioural intention was not a reliable independent predictor of the risk behaviours (Johnston & colleagues 2004).

1.2.4 Quit-Aid Efficacy

The use of a quit aid has consistently been shown to improve the outcomes of smoking cessation. According to *Treating Tobacco Use and Dependence: A Clinical Practice Guidelines* (USDHHS, 2000) only seven per cent of smokers who quit on their own achieve long term success. Success rates can be increased to 10% to 30% by using proven effective treatments for tobacco dependence listed in the report (USDHHS, 2000). As such, the guidelines recommend that all tobacco users should be offered a treatment. Intensive counselling and pharmacotherapies were found to be the most effective.

Smokers who use a quit aid have consistently been more likely to quit smoking compared to those who did not (Solberg, Boyle, Davidson, Magnan, Carlson & Alesci 2001; Ockene et al., 2000; Zhu, Melcer, Sun, Rosbrook & Pierce, 2000; Davidson, Epstein, Burt, Schaefer, Whitworth & McDonald, 1998). A greater proportion of smokers who sought assistance had quit (26.7%) compared to those who did not (16.3%) (Zhu et al., 2000). This same study found that the use of smoking cessation aids was also related to relapse; smokers who had used a cessation aid to help them quit experienced fewer relapses at 12 months compared to smokers who did not (Zhu et al., 2000).

Although evidence supports the use of cessation aids for improving cessation success, many smokers do not use one. In fact, 20 per cent of Canadian smokers who have tried to quit never used a cessation aid (CTUMS, 2003). Therefore it is important to understand why smokers choose not to use a quit aid. One reason could be that smokers do not believe that quit aids generally work or that quit aids would work specifically for them. This belief in the effectiveness of a quit-aid will be referred to as Quit-Aid Efficacy (QAE) for the remainder of this paper. Increasing smokers QAE may be useful in improving the likelihood that a smoker may use a quit aid therefore improving the likelihood of successful quitting.

In summary, interventions that enhance self-efficacy, outcome expectations, behavioural control, and quit aid efficacy are likely to increase successful smoking cessation while those that do not may reduce the likelihood of cessation success.

1.3 Mass Media Campaigns and Smoking Cessation

Mass media campaigns are commonly used to facilitate behaviour change, such as smoking cessation, on a population level (Wong & McMurray, 2002; Glanz, Rimer & Lewis, 2002; Witte & Allan, 2000). In this manner, media campaigns become a source of information for their specified target population. For example, smokers exposed to cessation campaigns are typically provided with facts on tobacco use and tips on quitting. Recent examples of such interventions include Health Canada's "*Bob on TV*" and graphic cigarette package warning labels. Past research suggests that the type of message framing used in media campaigns can impact the variables important to behaviour change (self-efficacy, outcomes expectations, and behavioural intentions) as well as the behaviour itself (Wong & McMurray, 2002; Maheseswaran and Meyers-Levy, 1990; Meyerowitz & Chaiken, 1987; Smith & Petty, 1996). A study conducted by Wong and McMurray (2002) examined the effects of message framing

(positive and negative) on variables related to smoking cessation such as self-efficacy and intentions to quit smoking. Current smokers (with and without the intention to quit smoking) were asked to respond to a quit smoking message that was either positively framed (benefits of quitting) or negatively framed (costs of not quitting). Participants' self-efficacy and intentions to quit were assessed at pre-test, post-test and at a 3 month follow-up. Results showed that message framing had a significant effect on participants' self-efficacy to quit smoking. At post test, both message frames increased participants' self efficacy whereas the 3 month follow up showed a clear framing difference; increased self-efficacy for participants exposed to the negative message frame was maintained at 3 months while for those who received the positive framed messages, self-efficacy returned to baseline levels. This study suggests that the approach used to present messages (i.e. positively or negatively framed) is an important consideration for smoking cessation media interventions.

The content used in a message may also have implications for the effectiveness of a message. Table 1 contains the results of an informal review of current smoking cessation messages from a variety of sources and highlights some of the common message themes that are employed.

Table 1: Examples of Smoking Cessation Messages Used in Recent Campaigns

Source:	**Sample Message**	**Orientation**
Health Canada warning labels	Cigarettes are highly addictive	Addiction
	Studies have shown that tobacco can be harder to quit than heroin or cocaine.	Addiction/ Quitting is very difficult
Health Canada cigarette package inserts	Tobacco products are highly addictive	Addiction
	Nicotine is a very addictive drug when delivered by a tobacco product	Addiction
	It may take several attempts but fortunately, many smokers are still able to quit	Addiction/ Quitting is very difficult
Heart and Stroke (http://ww1.heartandstroke.ca/Page.asp?PageID=24)	The addiction to nicotine is more powerful than an addiction to heroin or cocaine	Addiction
	But though it may be difficult, quitting is worth it	Quitting is difficult
U.S Department of Health and Human Services: *You Can Quit Smoking Consumer Guide* (2000) and *Good Information for Smokers* (2003)	Quitting is hard. Many people try several times before they quit for good	Quitting is very difficult
	Nicotine: A Powerful Addiction	Addiction
	If you have tried to quit smoking, you know hard it can be. It is hard because nicotine is a very addictive drug.	Addiction/ Quitting is very difficult
Web MD Health (http://my.webmd.com/medical)	Smoking is one of the most addictive habits	Addiction
How to quit smoking tips www.quitsmoking.about.com	Nicotine is a powerful addiction	Addiction
	Its been said that the psychological, or mental side of nicotine addiction is more difficult to beat than cocaine or heroin	Addiction/ Quitting is very difficult
Smoking cessation http://www.smoking-cessation.org/smoking_cessation_nicotine_addiction.asp.	If you have tried to quit smoking, you know how hard it can be. It is hard because nicotine is a very addictive drug. For some people, it can be as addictive as heroin or cocaine	Quitting is very difficult/ Addiction

At least two main themes emerge from recent cessation campaigns: (1) nicotine is highly addictive, and (2) quitting is very difficult. The former contains messages that simply state that nicotine is a powerful addiction or draws a comparison between nicotine addiction and heroin/cocaine addiction to reinforce the point. The latter mainly contains messages that reinforce the idea that quitting is very difficult by simply stating this or by stating that several tries are necessary before success can be expected. For the remainder of this proposal both themes will be grouped into one and referred to as addiction messages.

Addiction messages have the potential to impact smokers' self-efficacy, outcome expectations, and behavioural intentions through, what Bandura (1986) has termed, verbal persuasion. That is, if smokers are inadvertently led by media messages to believe that smoking cessation is a very difficult task, they may not believe they have the abilities to successfully quit and expect failure rather than successful change. In the Theory of Planned Behaviour, perceived behavioural control precedes behavioural intention. Theoretically, it is possible that addiction messages may lower smokers' perceived behavioural control leading to decreased intentions to quit. Finally, addiction oriented messages may also undermine participants belief in the efficacy of a quit-aid to help them quit.

1.4 Media Messages and Nicotine Dependence

Addiction messages may affect lower and higher nicotine dependent smokers differently as nicotine dependence is related to cessation behaviour including quit attempts, abstinence, and relapses. A higher dependence on nicotine is associated with a lower likelihood of quitting (Hill & colleagues, 1994; Lichtenstein & Cohen; 1990). This finding was echoed by Westman and colleagues (1997) who found that for every one unit increase in baseline Fagerstrom score, there was a corresponding .72 decrease in the odds of abstinence at

six months. Hymowitz, Cummings, Hyland, Lynn, Prechacek & Hartwell (1997) conducted a cohort study to determine the predictors of smoking cessation. The researchers found that indicators of lower nicotine dependence (lower levels of daily cigarette consumption and longer time to first cigarette in the morning) were statistically significant predictors of smoking cessation and accounted for ten times the variance in smoking cessation compared to other predictors studied (i.e. age, gender, income, motivation etc) (Hymowitz et al., 1997). Furthermore, a study by Hellman et al., (1991) comparing successful abstainers to those who relapsed showed that the former were more likely to smoke fewer cigarettes compared to those who experienced a relapse.

Smokers who are less nicotine dependent may be more vulnerable to the iatrogenic effects of addictive messages as they are more likely to quit compared to smokers with higher dependence. Informing lower nicotine dependent smokers that they are highly addicted to nicotine, quitting is very difficult, and that they should expect several failures before successfully quitting may undermine their self-efficacy, outcome expectations, and intentions to quit. This has important implications for public health since the proportion of smokers with little or no nicotine dependence may be quite high. According to the Canadian Tobacco Use Monitoring Survey (CTUMS), 31% of Canadian smokers can be classified as light and 57% as moderate smokers using the Heaviness of Smoking Index (HSI). The HSI consists of two questions that account for most of the variance in the Fagerstrom Test for Nicotine Dependence Scale. Therefore, 88% of Canadian smokers have low to moderate nicotine dependence and as a result may be more susceptible to the iatrogenic effects of addiction messages.

For the remaining 12% of smokers who are classified as heavily dependent to nicotine, addiction messages may have the opposite effect. These messages may positively influence such smokers by becoming a source of support and comfort. Research has shown that the quitting experiences or trajectories of heavily dependent smokers can differ compared to less dependent smokers. The former are more likely to have made unsuccessful quit attempts and therefore may relate to messages that state quitting may take several tries or that the addiction to nicotine is very powerful (McDonald, personal communication). Smokers may also feel relieved by knowing they are not alone and that other smokers experience difficulty too. It is also possible that messages which do not highlight the addictiveness of nicotine and the difficulties associated with quitting may fail to inform or prepare heavily dependent smokers of what to expect when quitting. They may not realize that effective coping skills are neccessary and therefore, fail to develop such skills. Similarly, they may not appreciate the benefits of using a treatment to aid higher dependent smokers, such as themselves, in successfully quitting. This may reduce the likelihood of successful quitting for such smokers which in turn may reduce their self-efficacy, COE, and perceived behavioural control.

In short, the type of impact addiction messages may have on self-efficacy, COE, behavioural control, quit attempts and ultimately on abstinence, may depend on the message recipient's level of nicotine dependence.

1.5 Rationale

The ubiquitous nature of addictive messages coupled with the fact that a large proportion of smokers may be vulnerable to the iatrogenic effects of these messages reinforces the need for research in this area.

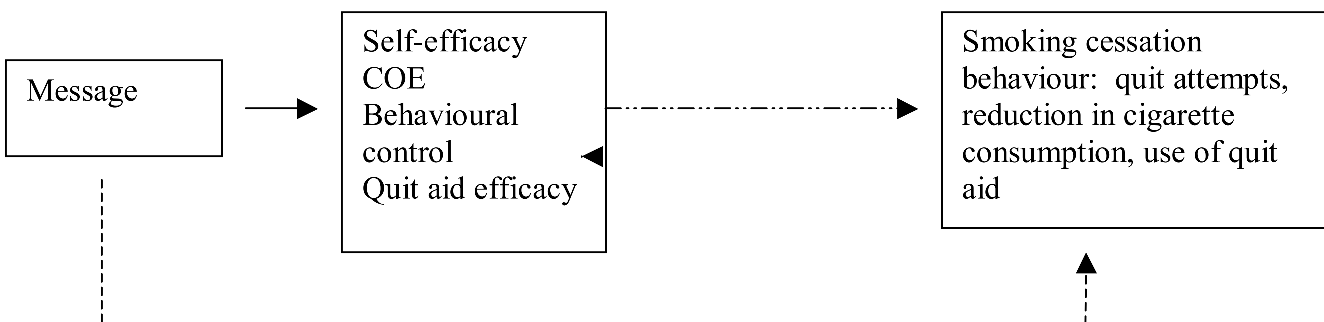
With the limited resources available for population-based smoking cessation interventions, it becomes crucial that the interventions used are most likely to increase successful quitting. To accomplish this, the possible effects that these messages may have on smokers needs to be determined.

The significant gap in current published literature reflects the fact that no studies have been carried out that explore the types of messages sent to smokers regarding nicotine addiction and the quitting process and how these messages may influence smokers' quit attempts. Finally, even though considerable evidence suggesting the importance of message framing on smokers quit behaviour exits, no studies have investigated how addictive messages may influence important precursors to smoking cessation such as smokers' cessation outcome expectations, self-efficacy, and use of quit aid.

The goal of this study is to gain a better understanding of how commonly employed media messages may influence smoking cessation via constructs such as outcome expectations, self-efficacy, quit aid efficacy, and intentions to quit smoking.

Figure 1 depicts a potential conceptual model of the potential links between media messages and cessation behaviour. This study is not meant to identify the relationships between the variables and cessation behaviour; rather, it is to simply investigate the effects of messages on proximal variables such as self-efficacy and COE.

Figure 1: The Potential Links Between Media Messages and Smoking Cessation



Chapter 2

Development of Measures and Interventions

2.1 Introduction and Rationale

In order to effectively determine the impact of addiction messages on self-efficacy, cessation outcome expectations, and quit-aid efficacy, validated scales are essential. Unfortunately, a literature review did not reveal any tools that measured outcome expectations for smoking cessation specifically. Available tools typically measure outcome expectations for smoking. As a result, the *Smoking Consequence Questionnaire* (Copeland, Brandon & Quinn, 1995) was used as a guide to develop questions to measure smokers' perceptions of the outcomes associated with quitting.

Quit-aid efficacy may also be a new concept; therefore, no validated measures were found to assess it. Therefore, a scale was developed. Similar to the cessation outcome expectations scale development, questions for the quit-aid efficacy scale were generated using a validated smoking outcome expectation scale (*Smoking Consequence Questionnaire*) as a prototype while input from an expert in tobacco control (Dr. McDonald) was incorporated.

In addition to the constructed scales, two intervention essays were drafted. The first essay contained standard smoking cessation messages smokers are currently exposed to. The second essay contained manipulated messages intended to enhance participants' self-efficacy, cessation outcome expectations, and quit-aid efficacy. The purpose of this study was to pilot test these two questionnaires and intervention essays that were then used in the subsequent primary thesis study. Carefully developed intervention materials that have been successfully manipulated variables of interest are integral for accurate interpretation of findings resulting from the use of such materials. For example, in the case of no effect and no pilot test of study

materials, it can not be determined whether the null findings resulted due to a true absence of an effect or if it was due to the use of poorly developed interventions.

2.1.1 Research Objectives

1: To determine the test-retest reliability of the cessation outcome expectation and quit-aid efficacy questionnaires.

2: To determine the intervention essay's readability and comprehension among current smokers aged 18 and older.

3. To determine the construct validity of the essays.

2.2 Methods

2.2.1 Participants and Recruitment

Participants were recruited at University of Waterloo's Student Life Centre. A passive recruitment approach was used; the researcher set up a booth and waited for potential volunteers to approach the booth. The researcher provided information on the study and screened those who were interested in participating to determine eligibility. An ad was also placed in the on-campus student newspaper "The Imprint" (Appendix 1). In order to validate the questionnaires and intervention essays for the main thesis study target population, the inclusion criteria from the main thesis project (chapter 3) were applied to the pilot study. A self-reported screening form (Appendix 2) was used to determine if participants met the following eligibility criteria: 18 years of age or older; able to read, understand, and speak English; a current smoker (anyone who identifies himself or herself as a current smoker, who has smoked 100 cigarettes in his or her lifetime, and who has smoked at least one cigarette in the last 30 days); planned to quit in the next 6 months; willing to use a quit aid in the next month; and had normal or corrected to normal vision. Participants who were: pregnant or

breastfeeding mothers; had uncontrolled hypertension, arrhythmia, heart attack in the last 6 months; had a recent history of schizophrenia, major depression, anxiety disorder, and alcohol or drug abuse were excluded from the study. These individuals were excluded as they require specialized smoking cessation treatments that are out of the scope of this project.

For those meeting the eligibility criteria, a lab appointment was set up in a private office at the Population Health Research Group, University of Waterloo.

2.2.2 Procedures

2.2.2.1 Study Design

A repeated measures design was used. All subjects completed the same questionnaires at two different time points approximately seven days apart.

2.2.2.2 Lab Appointment

To ensure informed consent was taken, participants were given an information letter upon arriving to the lab appointment (Appendix 3). The letter informed participants about the purpose of the study, participant requirements, potential harmful and beneficial effects of participating, the voluntary nature of participation, and steps to ensure privacy of their data. In addition to the letter, the researcher described the study, reviewed the instructions for participating, and provided participants with an opportunity to ask questions. Finally participants were asked to sign a consent form (Appendix 3).

Participants were instructed to read two essays and then (1) underline what they felt were important phrases, words, sentences, or paragraphs (Appendix 4) and then, (2) fill out a questionnaire on the essay content (Appendix 4) that contained six quantitative and six qualitative questions on essay content. After reading the essays and filling out the

questionnaire, participants were asked to fill out the cessation outcome expectations questionnaire and the quit aid-efficacy questionnaire (Appendix 5).

Finally, as measure of readability for both questionnaires, every third participant (n = 6) who showed up for their scheduled lab appointment was given an additional questionnaire designed to determine the readability of the constructed scales (Appendix 6).

2.2.2.3 Follow-up Questionnaire

To determine test-retest reliability of the questionnaires, participants were re-contacted by phone 7-10 days later and re-administered the cessation outcome expectations questionnaire and the quit-aid efficacy questionnaire (Appendix 7). Upon completing the study a letter of appreciation was sent out to participants (Appendix 8).

2.2.2.4 Participant Compensation

Participants were compensated with a gift certificate in the amount of $10 to be used at any Tim Horton's establishment to purchase food and beverage items. See section 3.6 for a rationale for compensating participants.

2.3 Measures and Materials

2.3.1 Intervention Essays

The essays (Appendix 9) were comparable in length; M1 contained 937 words and M2 contained 951 words. Both M1 and M2 essays contained information on smoking cessation, positive and negative outcomes of quitting, while only M1 contained common addiction messages and M2 contained encouraging messages. All formatting, font, and style was identical between both essays.

2.3.2 Cessation Outcome Expectations Questionnaire

To draft the questionnaire, two tobacco control specialists met and generated a list of cessation outcome expectations and expectancies (value statements). The list was generated to include both positive and negative cessation outcome expectations. The initial list contained 50 statements. The list was reviewed and edited to produce 38 statements. A 6 point Likert scale was constructed that that was labelled strongly disagree (0), moderately disagree (1), mildly disagree (2), mildly agree (3), moderately agree (4), and strongly agree (5) was chosen. Both the numerical value (i.e. 3) and the label appeared (i.e. strongly agree) after each statement. The questions fell into two broad categories of expectations and expectancies. The cessation outcome expectation (COE) questions were further divided into two major types of positive COE and negative COE. The former consisted of statements suggesting successful smoking cessation (1 -2 attempts only), experiencing fewer withdrawal symptoms, cravings, while the latter consisted of statements outlining the difficulty of trying to quit (failure, several attempts, many intense withdrawal symptoms, negative mood and irritability etc). The statements on outcome expectancies determined the importance of each positive outcome of quitting to the individual or, in other words, how much they valued each outcome.

2.3.3 Quit-Aid Efficacy Questionnaire

Similar to the cessation outcome expectation scale construction, two tobacco control specialists met and drafted potential statements for the quit-aid efficacy questionnaire. The objective was to include all categories of quit-aids commonly available to smokers. The initial draft consisted of 10 statements on the effectiveness of quit-aids in helping smokers to quit. Once again a 6-point Likert scale ranging from strongly disagree (0) to strongly agree (5) was selected and both numbers and labels appeared on the questionnaire. The statements were

broken down into different quit-aid categories with two questions on general quit-aid efficacy and one question each on NRT, other prescription medications, and programs and counseling.

To control bias in both scales due to leading statements (i.e. "Using a quit aid will help me quit smoking and remain smoke-free") an equal number of statements in the opposite direction were also included "Using a quit aid will not help me quit and remain smoke free". Both scales (COE and quit-aid efficacy) were incorporated into one questionnaire. The individual test items within each scale were randomly ordered, but consistent across participants. As well, two versions were constructed; in version 1, the quit-aid efficacy scale preceded the COE scale and in version 2 the order was reversed.

2.4 Analysis

2.4.1 Scales: Quantitative Analysis

The Kappa statistic was used to determine inter-rater reliability for each item on both scales. Summary scores were calculated for each of the scales and interclass correlation coefficient tests and t-tests were performed between Time 1 (T1) and Time 2 (T2) summary scores to determine test-retest reliability.

2.4.2 Intervention Essays: Mixed Methods Approach

A mixed methods approach was used to determine the validity of the essays. Participants were asked to rate essay content via six quantitative questions (3 used a 5-point Likert scale and 2 used a 3-point Likert scale) and 6 qualitative questions. The purpose of the qualitative review was simply to determine if the essays produced their intended effects. Therefore, an in-depth comprehensive qualitative analysis was not undertaken but rather a review that was appropriate to establish the validity of the essays; whether in fact one essay contained addiction oriented messages and the other efficacy enhanced messages.

One transcript was generated for each essay intervention (M1 addiction oriented and M2 efficacy focused) that contained text responses from all participants for all six open-ended questions from the survey. Both the transcript construction and analysis review was conducted by the primary researcher. An inductive approach was used to analyze the data as opposed to the deductive method of using predetermined codes (topics).

The transcript was reviewed a few times initially to enable the researcher to become more familiar with the contents. The analysis was performed on each question. The analysis began with some initial free coding providing the opportunity to define and discover the data (Loftland & Loftland, 1995). The second step involved focused coding where the researcher tried to determine which codes were being used more than others (Lofland & Lofland, 1995). This was done to help filter out the codes that were not as productive, allowing the researcher to focus and elaborate on a select number of codes.

The remainder of the analysis focused on trying to determine how the various codes connected and the underlying meanings behind them. Themes and patterns were identified by the methods outlined by Luborsky (1994). Both methods of identifying themes (seeking statements that occur most frequently and seeking those statements that are distinct in some way as being of great importance) were incorporated into the analysis of the data (Luborsky, 1994).

2.5 Results

2.5.1 Sample Description

The sample consisted of 19 students from University of Waterloo between the ages of 18-29. All participants were current smokers thinking about quitting. Thirteen of the 19 participants (64%) were males.

2.5.2 Scales

2.5.2.1 Cessation Outcome Expectations (COE) Scale

Overall, the item mean response ranged from .26 to 4.11 (SD = .45 – 1.96), the Kappa scores ranged from .04 to .51, and the Spearman's correlations ranged from .03 to .87 across questions. None of the t-tests reached significance. For details of the descriptive and test statistics for each item refer to Appendix 10.

2.5.2.2 Quit-Aid Efficacy Scale (QAE)

The item mean response for the QAE scale ranged from 1.7 to 3.4 (SD = 1.15 to 1.71), the Kappa scores ranged from -0.02 to .22, and the Spearman's correlations ranged from .08 to .89 across questions. Again, none of the t-tests reached significance. For details of the descriptive and test statistics for each item on the scale refer to Appendix 11

2.5.2.3 Scale Revision

With the help of an expert in the field (Dr. Paul McDonald), the questions and their respective statistics were reviewed and a final draft of each questionnaire was constructed. The following criteria were used as a general aid to refine the scales:

1. All questions should match one or more intended constructs of the scale.
2. Questions in the final survey should have a Kappa score of at least 0.2

3. The mean response for questions in the final survey should be between one and four (to filter out questions that demonstrated either a floor or ceiling effect).

Items that did not meet the last two criteria but were thought to be of key importance to the construct were retained. Ten questions that were originally included in the COE scale but were measuring outcome expectancy were separated out into a third scale. Please refer to Appendix 12 for the descriptive and test statistics for each item on the outcome expectancy scale.

Summary scores for each of the scales were calculated and an interclass correlation coefficient (ICC) and t-test statistic was calculated for each summary score. Table 2 presents the results of the ICC and t-test.

Table 2: Summary ICC and Test Statistics

Scale	number of items	Mean T1 (SD) T2 (SD)	T-test	ICC score
Cessation Outcome Expectations	19	47.52 (8.52) range = 33-71 50.37 (12.32) range = 22-71	Mean = -2.842 SD error = 2.37 t-value = -1.20 p = 0.2464	.5176
Quit Aid	10	22.42 (5.24) range = 15-34 19.53 (6.43) range = 0-28	Mean = -2.89 SD error = 1.70 t-value = -1.70 p = 0.1060	.15535
Cessation Outcome Expectancies	10	35.16 (9.742) range = 14-50 34.37 (11.13) range = 11-50	Mean = -2.842 SD error = 2.37 t-value = -1.20 p = 0.2464	.85404

With the help of the feedback from participants on question wording and comprehension, a number of questions from the COE scale were slightly re-worded and modified to improve clarity and three items were added. The final draft of the COE contained 27 questions. The QAE scale contained 10 questions (no change) and the expectancy scale contained 5 items (5 items were removed).The response scale for all three questionnaires was changed from a 6-point Likert scale (strongly disagree, moderately disagree, mildly disagree, strongly agree, moderately agree, mildly agree) to a 7-point bipolar disagree-agree scale scored from -3 to +3 in order to incorporate a neutral response of "neither agree nor disagree".

A behavioural control scale for smoking cessation was constructed using techniques described in section 3.2, which consisted of five questions on a 7-point semantic differential scale (Appendix 13).

2.5.3 Intervention Essays

2.5.3.1 Manipulation Check

Tables 3 display the analysis of participant responses to essay content. The only significant difference in mean score between the two essays was for the question "the essay mostly contained statements on the addictiveness of nicotine". The addiction focused essay had a significantly higher mean indicating that more participants strongly agreed or agreed with this statement for this essay compared to the efficacy focused essay.

Table 3: Analysis of Participant Responses to Essay Content

Question	p-value
The essay contained mostly positive outcomes of quitting smoking	.1899
The essay contained encouraging statements to help me quit	.1520
The essay mostly contained statements on the addictiveness of nicotine	.0069
The essay did not contain supportive and encouraging statements to help me quit	.6584

When asked which of the two essays participants preferred, sixty-eight per cent of the participants preferred M2 essay over M1.

3.5.3.2 Qualitative Results

The initial free coding resulted in 25 codes for M2 and 28 for M1. This was narrowed down to 16 codes for M2 and 18 for M1. A sample of the codes by question for M1 and M2 are presented in Table 4. The comprehensive list for each essay can be found in Appendix 14. A review of the themes that emerged from the data for M2 and M1 suggests that the manipulations were successful and that participants were able to comprehend the intended differences between the two intervention essays.

Table 4: Qualitative Analysis of Participant Responses to Essays

Questions	M1 code *example*	M2 code *example*
In your own words what would you say is the purpose of the essay?	**1.Inform smokers about the harms of smoking and benefits of quitting** *006- This essay gives statistical and medical incentives to quit smoking. Its purpose is to inform the reader on the health risks of smoking (esp. physiological) as well as its addictive nature.* **2. To make/force smokers to quit** *007- To slap smokers on the wrist & make them quit* **3. To encourage/provide assistance for quitting** *016- To encourage people to quit smoking and provide ideas on how to quit successfully.*	**1. Encourage/help smokers to quit/quitting is "doable"** *006- Quitting is completely doable …the greater part of the smoking population are fully capable…* *018- the purpose of this essay is to encourage smokers to join other who have quit and make positive changes in their lives.* **2. Quitting not as hard as believed to be** *025-That nicotine is addictive → to some, and it may be hard to quit → for some* *But, for those who are not able to quit easily there are 5 steps that can help.*
What are the main points of the essay?	**1. Smoking/nicotine is addictive** *022- …that nicotine is highly addictive* **2. Quitting is hard (but not impossible)** *013-…quitting is hard, it may take several attempts… it is possible to quit* **3.Tips on quitting** *012-…There is help and strategies available to those trying to quit*	**1.You may not be as addicted as you think** *012-Not all smokers develop powerful addiction* *There are many benefits to quitting* *Quitting is not hard for most and is rewarding for everyone* *Quitting is a process requiring preparation.* **2. You can quit** *007- smoking can hurt the smoker and people around.* *Smoking is just a habit that CAN be knocked* *Quitting is a process*

		3. Steps to quitting *014 …quitting is easier with setting dates, avoiding behavior that encourages it, getting help from loved ones or doctors, and not being discouraged by failed attempts.*
Which sentences or phrases stick out most to you?	**1. Addiction is more powerful than the addiction to heroin and cocaine** *011- nicotine addiction is more powerful than an addiction to heroin or cocaine.* **2. Several tries** *014-"people often make several tries before finally being able to quit"* **3. Effects of nicotine** *025-…symptoms include physiological & physical dependence, w/drawl & compulsive drug use.*	**1. Not a powerful addiction for all smokers** *011- not all smokers are addicted* *tobacco can be very hard to quit (harder than heroin) but for only a small group of smokers* *013-"the addiction may be powerful, however this is not the case for the majority of smokers"* **2. Quit on first try/majority have quit** *026- 'many smokers have been able to quit on their first attempt'* **3. Benefits/ steps of quitting** *015- quitting smoking is a big accomplishment…"* *Key Steps #5 (entire paragraph is brilliant)*
Please list the information (if any) that is new to you.	**1. Nicotine as addictive as heroin and cocaine** *021- tobacco can be harder to quit than heroin or cocaine* **2. Benefits of quitting** *016- quitting can result in better sleep and better mental health.* **3. Obstacles to quitting** *019-drinking lowers chance of success*	**1. Nicotine is not a powerful addiction for all smokers/Not all smokers experience great difficulty quitting** *018- nicotine can be addictive* *not all smokers are addicted* *007- not all smokers have a hard time quitting.* **2. many have quit on their first try/majority have quit** *022- most smokers have quit*

		only small per cent of smokers are addicted *many quit on their 1st attempt*
Would you like to say anything else about the essay? Please comment:	**1. The 5-steps are useful** *016- The 5 key steps to quitting are a very good idea and a practical way to help people who already want to quit.* **2. Repeat info (nothing novel):** *006-…Most smokers already know about nicotine & addiction. (even more so than non-smokers)* **3. Criticisms and ways to improve the essay** *007- Very aggressive is overall tone. SMOKERS DON'T WANT to be YELLED at*. *020- It emphasizes how hard it is to quit which makes you want to not bother trying (somewhat)* *021- information provided could have been justified with evidence. A smoker might need better tips to be able to quit smoking*	**1.Doesn't force or push people into quitting** *005- good that it doesn't emphasize the difficulty as much* *don't push the reader, make it a choice…eg. When you quit* *015- I much prefer this essay (M2) because it seems to address people who have decided to quit previously. Since you can't force someone to quit, only help when they have decided to go for it.* **2. Doesn't emphasize the difficulty of quitting or compare smokers to drug addicts** *006- It doesn't freak people out by making smoking seem like a cocaine habit. By downplaying smoking in general it makes quitting seem more manageable and less intimidating*. **3.Personable/comforting/sympathetic/encouraging/ Positive tone** *016- Very encouraging compared to the first one. The first one felt like I was reading a paper. This one felt like I was being addressed specifically. The tone is more comforting and friendly too. It is non-condescending (unlike the first one).*

2.6 Discussion

The results of the pilot study suggest that the participants comprehended the main differences between the addiction focused essay and the efficacy enhanced essay. Pilot results of both original COE and QAE scales suggested that they needed to be revised and refined for further use. Therefore, the scales were modified (including changing the response format, modifying questions to read more clearly, and adding and removing a few questions). The final version of the COE questionnaire consisted of 27 questions and the QAE consisted of 10 questions. Both scales used a 7-point bipolar disagree-agree response scale scored from -3 to +3. A five item Outcome Expectancy (OE) scale emerged from the original COE scale as these items reflected the values attached to cessation outcomes and not the outcomes themselves. This scale was also scored on the same 7-point bipolar disagree-agree response format as the other two scales. Although, ideally the revised questionnaires should have been piloted again, time restrictions prevented this.

The following are some of the limitations of this pilot study. First, the pilot data was based on a small sample size of 19 students reducing the power of the study. Second, the scales were intended for a heterogeneous sample but the study sample consisted of a very homogenous sample of University of Waterloo students which would decrease the variability in participant responses.

The remaining of this paper will focus on the main thesis study starting with the introduction of the study.

Chapter 3

Primary Study

3.1 Introduction

Current media campaigns promoting smoking cessation commonly reinforce the addictiveness of nicotine and the difficulty associated with quitting with statements like 'nicotine is as addictive as heroin and cocaine'. It is hypothesized that such messages may have unintended effects on cessation behaviour by affecting variables related to quitting. To date no studies have been found that have investigated this possibility despite the prevalence of such messages. This study examined the impacts of some of the common quitting messages on smokers' self-efficacy, outcome expectations, quit-aid efficacy, outcome expectancy, and behavioural control. Furthermore, since nicotine dependence has been shown to impact cessation efforts and success, it is possible that the effects of addiction oriented or efficacy enhanced messages may depend on a smoker's nicotine dependence level. As such this study also examined the role of nicotine dependence on the hypothesized relationship between messages (addiction or efficacy) and the variables related to smoking cessation.

3.1.1 Research Questions

Research Question #1: Are addiction focused messages negatively impacting cessation efforts by reducing self-efficacy, cessation outcome expectations (COE), and behavioural control compared to efficacy enhanced messages and the control condition?

Research Question #2: Are addiction focused messages impacting smoking cessation by reducing the number of quit attempts and the use of cessation aids 30 days later compared to efficacy enhanced messages and the control condition?

Research Question #3: Does the impact of addiction messages differ according to participant nicotine dependence level?

3.2 Methods

3.2.1 Participants and Recruitment

Eligible participants for this study met each of the inclusion criteria outlined in Table 5. Those who met any one of the exclusion criteria listed in Table 5 were considered ineligible to participate and excluded from the study. A convenience sample of current adult smokers was recruited from the Kitchener Waterloo (KW) and Owen Sound region. The choice in sample was appropriate as the goal of the study was to determine if an effect existed between message type and the variables important for successful quitting. Recruitment commenced February 2005 and continued until May 2005. The following methods were used to recruit participants:

- classified ads in newspapers (the Waterloo Chronical, The Kitchener Waterloo Record, and the Pennysaver in KW, and the SunTimes in Owen Sound)
- passive recruitment via booths in local malls (Fairview Park and Conestoga Mall in KW), local colleges (Conestoga College in Waterloo), and the University of Waterloo's Student Life Centre. Passive recruitment involved setting up a booth and allowing interested patrons to approach the booth. The study was described to persons who approached the booth, including the study's purpose, participant requirements, and time commitments. Those interested in participating were screened for eligibility (see section 3.2.1.1)

3.2.1.1 Participant Screening

Participants who responded to one of three recruitment methods were screened by a self-reported questionnaire (Appendix 2) for the inclusion criteria listed in Table 5. Use of a questionnaire, instead of an interview, maintained participant privacy as some of the recruitment took place in public settings. In addition, the use of a self-reported questionnaire allowed one recruiter to assist multiple potential participants simultaneously.

An appointment at the Health Behaviour Research Group/ (PHR) at the University of Waterloo was set up for eligible participants. To standardize nicotine craving among participants they were instructed to smoke their last cigarette before the lab appointment no more than 15 minutes before the appointment.

Table 5: Inclusion Criteria

Inclusion criteria	**Rationale**
18 years of age or older	To obtain informed consent
Must be able to read, understand, and speak English	All the tools have been validated in English
Must be a current smoker (Mills & Stephens, 1994) defined as anyone: • who identifies himself or herself as a current smoker, • who has smoked 100 cigarettes in his or her lifetime • who has smoked at least one cigarette in the last 30 days	In order to investigate the effects on current smokers
Indicate that he or she is planning to quit in the next 6 months	It is important to only include those participants who are thinking about quitting as this will allow us to determine the effects of media messages on quit attempts and cessation behaviour
Willing to use a quit aid in the next month	This will allow us to determine the effects of media messages on smokers' efficacy for using a quit aid
Normal or corrected to normal vision	Participants will be asked to read essays and fill out the questionnaires
Exclusion Criteria	
Pregnant or breastfeeding mothers	Special treatments may be required for this sub-group: the treatment protocols used in this study may not be appropriate for pregnant or breastfeeding smokers
Medical conditions in the last 2 years (uncontrolled hypertension, arrhythmia, heart attack in the last 6 months, recent history of schizophrenia, major depression, anxiety disorder, and alcohol or drug abuse).	Special treatments may be required for this sub-group: the treatment protocols used in this study may not be appropriate for smokers with the listed medical conditions.

3.3 Procedure

3.3.1 Study Design Summary

This study employed a randomized trial with two active treatments and one control group. Participants were recruited, screened and then scheduled for a lab appointment. At the lab appointment, participants provided consent, were randomly assigned to a message condition, completed the baseline questionnaire, were given the appropriate essay to read, and filled out the post intervention questionnaire. A 30-day telephone call back survey for follow-up was the final component of the study.

3.3.2 Lab Appointment

3.3.2.1 Informed Consent

To ensure informed consent, the researcher or research assistant (RA) described the study, reviewed the instructions for participating, and provided participants with an information letter outlining the purpose of the study, participant requirements, and potential harmful and beneficial effects of participating (Appendix 15). Furthermore, the letter informed participants that all responses would be analyzed as a group (to protect privacy), that participation was completely voluntary, and that participants were free to withdraw from the study without consequence. Once participants had read the information letter and had an opportunity to ask questions, participants were asked to sign a consent form (Appendix 15).

3.3.2.2 Random Assignment into Intervention Conditions

Participants were randomly assigned into one of the following three message conditions; Addiction focus (M1), Efficacy Enhanced focus (M2), and the control group (M3). The researcher assigned participants using randomly ordered sealed envelopes. Each

participant was given the designated envelope containing an instruction sheet (Appendix 16) a baseline survey (Appendix17), the corresponding intervention essay (Appendix 18), and a post intervention questionnaire (Appendix 19). The researcher reviewed the instructions again and answered participant questions prior to providing the participants with privacy to complete the questionnaire and read the intervention essays.

3.3.2.3 Baseline Survey

The baseline data collection contained the following measures: nicotine dependence (including *Fagerstrom Test for Nicotine Dependence, Minnesota Withdrawal scale*, and a single item perceived level of addiction questionnaire), the *Smoking Self-Efficacy Questionnaire*, quit-aid efficacy, cessation outcome expectations, outcome expectancy, behavioural control, and smoking history (age started smoking, years smoked, and prior quit attempts), and demographic information (sex and age).

3.3.2.4 Post Intervention Questionnaire

The post intervention questionnaire was identical to the baseline questionnaire with the exception that demographic questions were removed.

3.3.2.5 Follow-up Telephone Survey

Before leaving their lab session participants scheduled a 30-day follow-up telephone survey. The telephone follow-up survey was identical to the baseline questionnaire except that (a) demographic information was removed, and (b) questions about quit attempts in the last 30 days and the use of a quit aid in the last 30 days were added. A script plus the telephone survey can be found in Appendix 20.

3.3.2.6 Confounding Message Exposure

Controlling for message exposure was considered important as the possibility existed that participants may have been differentially exposed to the main types of messages (addiction or efficacy) over the 30-day follow-up period. To determine if differences in message exposure between groups (addiction oriented, efficacy enhanced, and the control) occurred during follow-up and to control for these possible differences, participants were asked to keep all their cigarette packages for the 30-day period and send them back to the lab. Participants were given three large postage paid envelopes with PHR's mailing address printed on the front. Participants were asked to keep all their empty cigarette packages for the 30 day follow-up period and mail them back to PHR in the envelopes provided and were gently reminded of this at the end of their 30-day telephone follow-up questionnaire.

3.4 Measures & Materials

This section will describe each of the measures selected for this study. The measurement instruments and a description of the corresponding validation and psychometric properties (if applicable) can be found in the listed Appendices.

3.4.1 Nicotine Dependence

The *Fagerstrom Test for Nicotine Dependence* (FTND) was selected to assess nicotine dependence (Heatherton, Kozolwski, Freker & Fagerstrom, 1991). The FTND scale consists of six questions. Participants are given points for their response on each of the six scale items. The points on each item reflect dependence with more points given for higher dependence and 0 points given for little or no dependence. The points from all six items are totalled to give a final measure of dependence ranging from very low nicotine dependence (0-2), medium dependence (3-5), high dependence (6-7), to very high nicotine dependence

(8-10). The FTND has been validated for adult populations and has acceptable internal consistency, test-retest reliability, and construct validity (Appendix 21)

Although, the FTND is the most commonly used measure for nicotine dependence, it has limitations. Hughes et al (2004) looked at the concordance between four methods of operationalizing nicotine dependence: *DSM-IV/ ICD-10,* the Fagerstrom (FTND, Fagerstrom Tolerance Questionnaire, Heaviness of Smoking Index, and time to first cigarette after awakening), consumption (cigarettes/day), and self-ratings (e.g. "how addicted are you?"). The researchers found low to modest correlations amongst the various measures of dependence suggesting that each measure may be tapping into different aspects of nicotine dependence. With this in mind, perceived nicotine dependence and withdrawals were added to provide a cross reference for nicotine dependence based on the FTND.

To measure participants' perceived level of addiction the following question will be used: How addicted are you to smoking? The question was taken from a study validating a tool to triage smokers into appropriate cessation treatments (McDonald and McKnight, in progress). The researchers found support for the reliability of this question and found that it was only moderately correlated with the FTND reinforcing the fact that a self-rated level of addiction may be measuring something slightly different (i.e. perceived loss of autonomy). A copy of this measure and psychometric properties can be found in Appendix 22.

The Minnesota Withdrawal Scale was used to measure withdrawal (Hughes and Hatsukami, 1986). This 8-item questionnaire corresponds closely to the DSM-III criteria for nicotine withdrawal. Smokers are asked to indicate how severely they experience withdrawal symptoms such as anger, irritability, anxiety, and depression on a 4 point scale raging from none (0) to severe (4) (Appendix 23).

3.4.2 Self-Efficacy

The *Smoking Self-Efficacy Questionnaire* (SEQ-12) was selected to measure self-efficacy because of its' excellent psychometric properties in both current and former adult smokers (Etter, Bergman, Humair & Perenger, 2000). The scale consists of 12 questions grouped into two dimensions (internal stimuli and external stimuli). Each dimension consists of six situations in which current or formers smokers might be tempted to smoke. For example, in the internal stimuli dimension, participants are presented with situations such as "when I feel nervous" and "when I feel depressed" and in the external stimuli dimension with situations such as "when having a drink with friends" and "when celebrating something". Participants are asked to rate on a 5-point Likert scale how sure they are that they could refrain from smoking in each of the listed situations. The tool has good internal consistency, test-retest reliability, content validity, construct validity, predictive validity and discrimanent validity (Appendix 24).

3.4.3 Cessation Outcome Expectations

The literature review did not reveal any tools that measured outcome expectations for smoking cessation specifically. The tools typically measured outcome expectations for smoking. As a result, the *Smoking Consequence Questionnaire* (Copeland, Brandon & Quinn, 1995) was used as a guide to develop questions to measure COE (*cf*. chapter 3). The final version of the questionnaire consists of 27 questions that asked participants to respond on a 7-point bipolar disagree-agree scale (Appendix 25). The questions fall into two broad categories of positive COE and negative COE. The former consisted of statements suggesting successful smoking cessation (1 -2 attempts only) with few withdrawal symptoms, cravings, while the latter consists of statements outlining the difficulty of trying

to quit (failure, several attempts, many intense withdrawal symptoms, negative mood and irritability etc). See chapter 3 for details on the development and psychometric properties of this scale.

3.4.4 Outcome Expectancy (value)

An outcome expectancy scale (Appendix 26) was formed from a subset of items from the COE questionnaire (*cf*. chapter 3). The scale consists of five questions that asked participants to rate on a 7 point bipolar disagree-agree scale how important various outcomes of quitting smoking are to them. See chapter 3 for details on the development and psychometric properties of this scale.

3.4.5 Quit-Aid Efficacy

The literature revealed no existing tools to measure smokers' quit aid efficacy. As a result, questions were generated with the aid of a validated smoking outcome expectation scale (Smoking Consequence Questionnaire) and input from an expert in tobacco control (Dr. Paul McDonald) to putatively measure this construct. The final version consisted of a total of 10 questions using a 7-point bipolar disagree-agree scale (Appendix 27). The questions were broken down into different quit aids categories with questions on general quit aid efficacy, NRT, other prescription medications, and programs and counselling. See chapter 2 for details on the development and psychometric properties of this scale.

3.4.6 Behavioural Control

After reviewing the results of the pilot study, it seemed that behavioural control was one construct that was not measured but might have added value to the study. As such, a behavioural control scale (Appendix 14) was constructed that contained five items measuring participant behavioural control over smoking cessation. The scale utilized a 7-

point semantic differential scale that ranged from +3 (totally under my control) to -3 (totally not under my control). For more details on the development of this scale see chapter 3.

3.4.7 Demographic Information and Smoking History

Participant age and sex information was collected using the following questions "Please indicate your sex:" with a response option of male or female and "Please circle your age category (years)" with a response option of 18-25, 26-50, and 50+.

Smoking history and status questions were adopted from The Canadian Tobacco Use Monitoring Survey (CTUMS, 2002). Participants were asked to report the: age at which they started smoking, number of years smoking, average number of cigarettes smoked per day; and number of quit attempts over their lifetime (Appendix 28).

3.4.8 Craving Score

To account for baseline cravings, a single item questionnaire has been selected to measure cravings since this has been shown to be as reliable and valid as longer scales (Kazlowski, Pillitteri, Sweeney, Whitfield, & Graham, 1996). Participants were asked, "On a scale from 1 to 10, where 1 is no craving at all, and 10 is extreme cravings, how strong is your smoking craving now?" (Appendix 29).

3.5 Intervention

3.5.1 Intervention Paradigm

All participants were instructed to read the intervention essay and underline what they felt were important phrases or sentences within the text. This procedure was designed to increase the likelihood that participants read the text. It has been shown to be effective in verbal persuasion research (Maddux and Rogers, 1983; Rogers and Thistlethewaite, 1970; Rogers and Mewborn, 1976).

The use of written communications (in the form of essays) to manipulate variables related to behaviour change is an effective experimental approach (Maddux, Sherer, & Rogers, 1982; Maddux and Rogers, 1983; Rogers and Thistlethewaite, 1970; Rogers and Mewborn, 1976; Sutton, Marsh, & Matheson, 1990). For example, researchers have been able to successfully manipulate smokers self-efficacy for cessation behaviour (Maddux and Rogers, 1983) and outcome expectations of quitting and smoking (Sutton, Marsh, & Matheson, 1990; Maddux and Rogers, 1983).

3.5.2 Message Conditions

Table 6 outlines the similarities and differences between the preambles for each message condition (M1, M2, and M3). A control condition (M3) essay was constructed after the pilot study. It became apparent that this was an important addition to the study design as the addition of a control group allowed for comparison between receiving any form of treatment (addiction or efficacy message) to receiving no active treatment (information solely on healthy living with no mention of smoking cessation). The treatment essays were a composition consisting of segments of text taken from the following sources: Health Canada (cigarette packages and website information); Heart and Stroke website; the following websites on smoking cessation (www.quitsmoking.about.com, http://my.webmd.com/medical, http://www.smoking-cessation.org/smoking); and online brochures (*You Can Quit Smoking Consumer Guide* 2000 and *Good Information for Smokers* 2003) from the US Department of Health Services. The control essay contained information about healthy living (nutrition, exercise etc) and made no reference to smoking cessation. All essays were approximately the same length and used the same font, font size, and colour.

Table 6: Messages in the Preamble Essays

Description	Addiction Focused	Efficacy Focused	Control
Outline why smokers should stop smoking	√	√	
Outline why smokers should use a quit aid to help them	√	√	
Build smokers self-efficacy for quitting smoking via verbal persuasion		√	
Contain positive Cessation Outcome Expectations	√	√	
Contain common messages about quitting (i.e. takes many attempts)	√		
Contain common messages that reinforce the addictiveness of nicotine	√		
State that not all smokers find it difficult to quit and that many smokers have quit		√	
Contain supportive and encouraging statements about quitting (i.e. use previous quit attempts to your advantage)		√	
Contain tips only on healthy lifestyle choices (no smoking or quitting mentioned)			√

3.6 Participant Compensation

Previous research experience has shown that participation rates for this type of study have been extremely low (McDonald, personal communication). Anecdotal reports suggest this is largely related to the time commitments associated with participating (McDonald, personal communication). Matson, Lee and Hopp (1993) in their review of worksite smoking cessation programs found evidence to suggest that modest monetary incentives positively influence participation rates. Singer and colleagues (1999) conducted a study on the effects of incentives on response rates in interview mediated surveys. They found that incentives increased response rates of fresh (new), panel, and non-participants (Singer et al., 1999). This finding was supported by a study conducted by Guyll, Spoth, & Redmond (2003) which further concluded that monetary incentives can be useful for increasing participation rates and reducing sampling bias. The researchers stated that by increasing participation rates most strongly among individuals who are typically less likely to participate, sampling bias can be reduced thereby improving the external validity of the study (Guyll et al., 2003).

Given the forgoing, participants were given $25 as compensation for participating in the study. This modest amount was intended to provide participants with adequate compensation for their costs (i.e. transportation and/or parking) and time but not to coerce individuals into participating. The first portion ($10) was given to participants at the time of recruitment and the second portion ($15) at the beginning of their scheduled lab appointment at PHR. The split in remuneration was designed to increase compliance. Participants were reassured that they were free to withdraw from the study at anytime without any consequences (i.e. they will not have to return any money that they had received).

In addition to monetary compensation, all participants were offered the Canadian Cancer Society's *One Step at a Time: for smokers who want to quit* self-help booklet at the end of the 30-day call back survey and a brochure describing the Ontario Smoker's Helpline.

3.7 Analysis

3.7.1 Software

All data was analyzed using SAS statistical software version 9.1

3.7.2 Statistical Analysis

Regression analysis (General Linear Models) were carried out to determine if message type, nicotine dependence, or the interaction were predictors of mean change in self-efficacy score, cessation outcome expectation score, cessation expectancy score, quit-aid efficacy score, and behavioural control score between baseline and post-intervention (T2) and baseline and follow-up (T3) with the addition of quit attempts and use of a quit aid. Table 7 displays the complete SAS regression model for each test performed.

Table 7: SAS GLM Models

Model
Self efficacy (SE)
$SE_{t2} = M + ND + M \times ND + E$ $SE_{t3} = M + ND + M \times ND + E$
Quit Aid Efficacy (QAE)
$QAE_{t2} = M + ND + M \times ND + E$ $QAE_{t3} = M + ND + M \times ND + E$
Cessation Outcome Expectations (COE)
$COE_{t2} = M + ND + M \times ND + E$ $COE_{t3} = M + ND + M \times ND + E$
Behavioural Control (BC)
$BC_{t2} = M + ND + M \times ND + E$ $BC_{t3} = M + ND + M \times ND + BCE_{t1} + E$
Cessation Expectancies (CE)

$$CE_{t2} = M + ND + M \times ND + E$$
$$CE_{t3} = M + ND + M \times ND + E$$

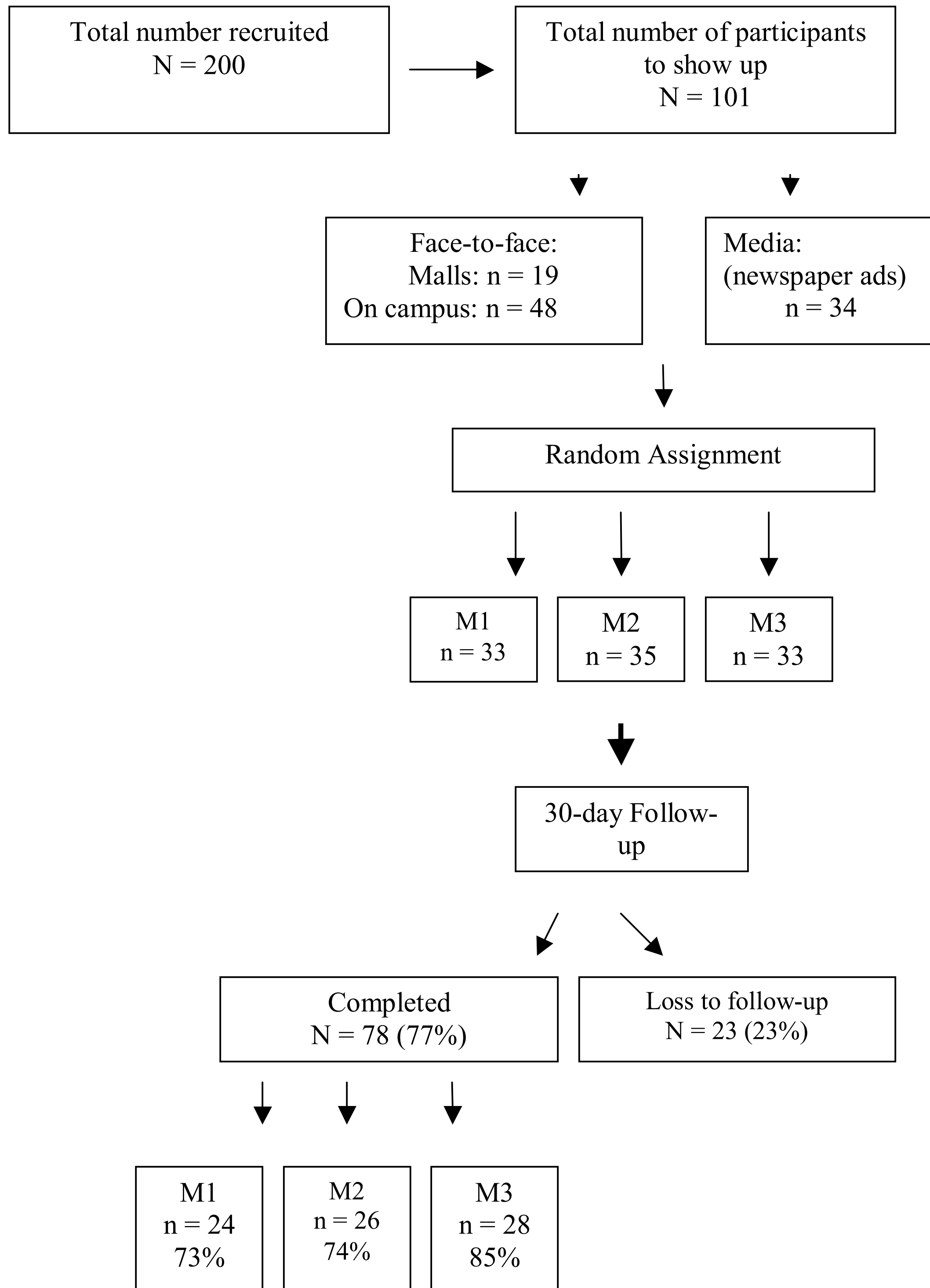
Chapter 4

Results

4.1 Participation Rates

Figure 2 shows participation rates at each stage of the project. The majority of the participants were recruited from either on-campus (48%) or via ads in the newspapers (34%). The number of participants that were ineligible to participate was negligible; four participants who responded to the ads and six participants from on-campus failed to meet the inclusion criteria.

Figure 2: Participation Rates at Each Stage of the Study



4.2 Sample Descriptions

Table 8 contains the sample description at baseline by intervention group and the associated p-values.

Table 8: Sample Description by Intervention Condition

Description	M1 (addiction) Mean(SD)	M2 (efficacy) Mean(SD)	M3 (control) Mean(SD)	P-value
Sex (% male)	67	60	73	.5394
Age (%) 18-25 years 26-50 years 50+ years	 56.25 34.38 9.38	 40.00 48.57 11.43	 60.61 27.27 12.12	.4280
Mean number of cigarettes smoked per day	12 (7.7)	15.2 (9)	11(7)	.1128
Mean number of years smoked	12(12)	17.3(12)	12(12)	.1287
Age of smoking initiation	16.3(3.5)	16(4)	16.5(3.7)	.7879
Previous number of quit attempts	16.28 (3.5)	15.9 (3.94)	16.5 (3.7)	.9403
Nicotine Dependence FTND score Withdrawal score Perceived addiction:	 3.03 (2.5) 12.4(5) 3.18 (0.97)	 4.47 (2.49) 12.3 (5.4) 3.47 (0.66)	 2.56 (2.37) 11.5 (6.1) 3.15 (0.8)	 .0058 .737 .2193
Craving score	4.2 (2.09)	4.43 (2.2)	3.96 (2.73)	.702

It should be noted that participant baseline craving score did not significantly differ between treatment groups.

4.3 Confounding Message Exposure

Participants were asked to send back their empty cigarette packages for the 30-day follow-up period. Of the 78 participants who completed the entire study, 35 sent back their cigarette packages (10 from the addiction focused, 9 from the efficacy enhanced, and 16 from the control condition). Six participants reported that they had no cigarette packages to send back as they had quit soon after the appointment. No significant difference was found in the proportion of participants who sent back their cigarette packages across treatment groups (p = .233). Table 9 contains sample characteristics of compliers (those who sent back their cigarette packages) and non-compliers (those who did not). Results indicate that those who complied were more likely to be older and have smoked longer.

Table 9: Comparison of Compliers and Non-Compliers

Description	Compliers	Non-compliers	P-value
Sex % (male)	62.86	67.44	.6721
Age (%) 18-25 years 26-50 years 50+ years	 37.14 40.00 22.86	 60.47 34.88 4.65	 *.0270
Mean number of cigarettes smoked per day	14.56 (7.92)	12.02 (8.17)	.17
Mean number of years smoked	18.4 (13.66)	11.5 (10.38)	*.016
Age of smoking initiation	17(5.05)	16(2.8)	.345
Previous number of quit attempts (%) 0-4 5-9 10+	 57.14 22.86 20	 74.42 16.28 9.30	 2389
FTND Nicotine Dependence (higher dependence)	33.3	34.88	.8877

* significant effect

Message exposure was classified into two groups: 1) Warning labels appearing on the front of the cigarette package and 2) warnings found on the inside insert of the cigarette packages. A distinction between warning labels appearing on the outside packages (front and back) and those appearing on the package inserts was made as research shows that smokers read and cognitively process the messages on the outside warning labels (Hammond, Fong, McDonald, Cameron, & Brown, 2003). Table 10 is a sample of some of the messages participants were exposed to.

Table 10: Sample of Messages Participants were Exposed to Over the Follow-up Period

Warning labels on the front of the cigarette packages	Warnings on the insert
CIGARETTES ARE HIGHLY ADDICITVE Studies have shown that tobacco can be harder to quit than heroin or cocaine	Tobacco products are highly addictive Most people don't manage to stay off tobacco the first time they try to quit smoking. You may have to try several times before you succeed. But each time you try you can learn more about how to succeed.
	Tobacco products are highly addictive When you quit, you will experience cravings for tobacco. They can be strong, but they will get weaker in time.
	Tobacco products are highly addictive Tobacco contains nicotine. Nicotine is a very addictive drug when delivered by a tobacco product. The Royal Society of Canada and the U.S Surgeon General agree. In terms of addiction: nicotine affects your body in ways that are similar to heroin and cocaine. Many smokers find it difficult to quit. It may take several attempts but fortunately, many smokers are still able to quit.

Of the 35 participants who returned their cigarette packages, seven participants (20%) were not exposed to addiction oriented messages over the 30-day period. Twenty-eight participants (80%) were exposed to addiction oriented messages with six exposed to

warning labels on the front of the package only, 15 to messages on the inserts only, and seven exposed to messages from both sources. No significant difference was found between the proportion of participants exposed to outside waning labels ($p = .5492$) and compliance rates ($p = 0.2334$) across each of the three intervention conditions.

4.4 Follow-up

Seventy-eight participants (77%) completed the follow-up survey. Of these 78 participants, 24 were from the addiction focused condition, 26 from the efficacy enhanced condition, and 28 from the control condition producing the following respective participation rates 73%, 74% and 85%. No significant difference was found in participation rates at follow-up across treatment groups ($p = .9017$), Analysis of differences between participants in each of the three intervention conditions showed no significant differences in the proportion of males and females ($p>.05$), age ($p>.05$), previous number of quit attempts ($p>.05$), craving ($p = 0.77$) , nicotine dependence $p>.0750$), and perceived level of nicotine addiction ($p = 0.3726$).

4.5 Dependent Measures

Tables 11 through 15 display self-efficacy, outcomes expectations, outcome expectancies, behavioural control, quit-aid efficacy scores at baseline, post intervention and at 30-day follow up respectively.

Table 11: Self-Efficacy Scores at Baseline (T1), Post Intervention (T2), and Follow-up (T3)

Intervention Group	T1 (n =101) Mean SE score (SD) Range	T2 (n =101) Mean SE score (SD) Range	T3 (n =78) Mean SE score (SD) Range
M1: Addiction	31.85 (9.83) 17-52	32.2 (9.2) 18-55	35.57 (12.79) 12-60
M2: Efficacy	30.19 (8.04) 15-44	31.4 (9.2) 16-49	36.83 (10.26) 15-60
M3: Control	29.09 (7.02) 16-42	29.8 (8.2) 12-45	33.4 (8.82) 17-55

Table 12: Outcome Expectations Scores at Baseline (T1), Post Intervention (T2), and Follow-up (T3)

Intervention Group	T1 (n =101) Mean SE score (SD) Range	T2 (n =101) Mean SE score (SD) Range	T3 (n =78) Mean SE score (SD) Range
M1: Addiction	12.59 (15.7) -32-35	14.3 (18.1) -15 - 62	16.5 (19.57) -20-54
M2: Efficacy	16.37 (15.04) -20-50	21.8 (17.7) -20 - 60	19.63 (19.19) -25-52
M3: Control	11.81 (19.40) -20-50	20.0 (20.1) -21- 63	15.81 (17.17) -16-46

Table 13: Outcome Expectancy Scores at Baseline (T1), Post Intervention (T2), and Follow-up (T3)

Intervention Group	T1 (n =101) Mean SE score (SD) Range	T2 (n =101) Mean SE score (SD) Range	T3 (n =78) Mean SE score (SD) Range
M1: Addiction	17.82 (3.37) 7-21	17.8 (3.6) 8 - 21	17.5 (5.01) -1-21
M2: Efficacy	18.14 (3.41) 8-21	17.7 (4.9) 1 - 21	17.31 (5.34) -2-21

M3: Control	14.33 (4.97 -1-21	16.8 (3.9) 8 - 21	15.57 (4.99) 5-21

Table 14: Behavioural Control Scores at Baseline (T1), Post Intervention (T2), and Follow-up (T3)

Intervention Group	T1 (n =101) Mean SE score (SD) Range	T2 (n =101) Mean SE score (SD) Range	T3 (n =78) Mean SE score (SD) Range
M1: Addiction	-0.33 (6.80) -13-11	1.9 (6.5) -10 - 13	0.86 (7.2) -12-15
M2: Efficacy	1.14 (6.82) -10-11	3.9 (6.5) -11 - 15	2.04 (6.58) -12-13
M3: Control	0.38 (6.36) -11-13	2.2 (6.5) -9 - 15	2.07 (6.84) -9-15

Table 15: Quit-Aid Efficacy Scores at Baseline (T1), Post Intervention (T2), and Follow-up (T3)

Intervention Group	T1 (n =101) Mean SE score (SD) Range	T2 (n =101) Mean SE score (SD) Range	T3 (n =78) Mean SE score (SD) Range
M1: Addiction	1.41 (7.15) -15-17	1.0 (11.2) -30 - 18	3.26 (11.74) -28-24
M2: Efficacy	2.85 (10.78) -30-24	3.6 (10.5) -30 - 20	5.46 (12.65) -20-30
M3: Control	-0.31 (10.28) -22-26	1.0 (10.4) -18 - 28	-2.39 (13.14) -28-22

From the above tables, it can be seen that there was not much variability in mean scores across intervention conditions.

4.6 Quit Attempt and Use of a Quit-Aid

Fifty-five per cent (n = 42) of the participants reported making a quit attempt over the 30-day period. The average number of quit attempts made was 2.3 (SD = 2.7) and the average number of consecutive smoke-free days reported at follow-up was 10 (SD = 11.5) (this includes those participants who quit and relapsed and those who remained smoke-free up until the 30-day call-back). Eighteen per cent of the participants made their first quit attempt the same day as their lab appointment, 13% made their first attempt within 24 hours, and 8 % within 48 hours. Almost all participants made their first quit attempt within two weeks of their lab appointment. 57.5% of the participants who made a quit attempt used a quit aid to help them.

4.6.1. Quit Attempts by Intervention Condition

There were no significant differences between the treatment conditions with respect to making a quit attempt (p = .2588), mean number of smoke free days (p = 0930), and use of a quit aid (p = 0.0668).The largest proportion of participants to make a quit attempt was found in M1 (65%) followed by M2 (58%) and M3 (48%)). The reverse trend was found for the mean number of days remained smoke free; participants in M3 reported the highest number of smoke-free days (15 days), followed by M2 (10 days), and M1 (6 days) (p = .0930). Almost 80% of the participants in the M2 condition used a quit aid to help them quit compared to 57% in M2 and only 33 % in M3 (p = 0.0668).

4.7 GLM Post Intervention Results

Table 16 displays the results of the analyses when the FTND was used as the measure for nicotine dependence level. As the table indicates, the analysis revealed no main

effect or interaction effect of message type (M1, M2, or M3) and nicotine dependence on the mean change score for the outcome variables between baseline and post intervention (T2).

Table 16: Post Intervention Analysis Using FTND as a Measure of Nicotine Dependence

Model I: Self-efficacy
SE = M + ND + M x ND + E $F(5,95) = 0.30$, $p = .9119$

Source	df	F value	P value
Message type	2	0.22	.8019
ND (FTND)	1	0.59	.4437
Message*ND	2	0.49	.6113

Model II: COE
COE = M + ND + M x ND + E $F(5,95) = 1.17$, $p = .3275$

Source	df	F value	P value
Message type	2	0.55	.5814
ND (FTND)	1	0.15	.6959
Message*ND	2	2.25	.1107

Model III: Behavioural Control
BC = M + ND + M x ND + E $F(5,95) = 0.77$, $p = .5773$

Source	df	F value	P value
Message type	2	0.39	.6752
ND (FTND)	1	0.83	.3635
Message*ND	2	1.15	.3206

Model IV: Quit Aid Efficacy
QAE = M + ND + M x ND + E $F(5,95) = 0.40$, $p = .8448$

Source	df	F value	P value
Message type	2	0.66	.5184
ND (FTND)	1	0.01	.9208
Message*ND	2	0.84	.4361

Model V: Cessation Expectancies

CE = M + ND + M x ND + E   F (5,95) = 2.11, p = .0710

Source	df	F value	P value
Message type	2	1.42	.2461
ND (FTND)	1	1.21	.2751
Message*ND	2	1.26	.2895

Table 17 displays the results of the analyses when perceived addiction was used as the measure for nicotine dependence. As the table indicates, the analysis revealed no main effect or interaction effect of message type (M1, M2, or M3) and nicotine dependence on the mean change score for COE, and quit aid efficacy. A main effect of nicotine dependence was found for mean change in self-efficacy score between baseline and T2. An interaction effect was found for message type and nicotine dependence on participant mean change in outcome expectancy score between baseline and T2. To complete a post hoc comparison of the interaction, perceived addiction was converted from a continuous variable to a dichotomous categorical variable with 1 = not at all or not very addicted and 2 = somewhat or very addicted. Table 18 contains the results of Duncan's Post Hoc analysis. The mean change in outcome expectancy was significantly different between the addiction focused (M1) and control (M3) groups and the efficacy enhanced (M2) and the control (M3) groups. Mean change in outcome expectancy for those classified as not addicted was significantly higher than those who classified themselves as addicted to nicotine.

Table 17: Post Intervention Analysis Using Perceived Addiction as the Measure for Nicotine Dependence

Model I: Self-efficacy

SE = M + ND + M x ND + E   F (5,92) = 1.13, p = .3482

Source	df	F value	P value
Message type	2	1.02	.3642
ND (PA)	1	4.53	.0360
Message*ND	2	1.05	.3531

Model II: COE

COE = M + ND + M x ND + E   F (5,82) = 0.99, p = .4286

Source	df	F value	P value
Message type	2	1.38	.2567
ND (PA)	1	1.60	.2090
Message*ND	2	1.07	.3485

Model III: Behavioural Control

BC = M + ND + M x ND + E   F (5,94) = 0.94, p = .4608

Source	df	F value	P value
Message type	2	0.06	.9426
ND (PA)	1	3.65	.0591
Message*ND	2	0.07	.9280

Model IV: Quit Aid Efficacy

QAE = M + ND + M x ND + E   F (5,85) = 0.85, p = .5158

Source	df	F value	P value
Message type	2	0.92	.4006
ND (PA)	1	0.64	.4256
Message*ND	2	1.32	.2719

Model V: Cessation Expectancies

CE = M + ND + M x ND + E   F (5,95) = 4.81, p = .0006

Source	df	F value	P value

Message type	2	5.58	.0051
ND (PA)	1	5.53	.0208
Message*ND	2	4.10	.0195

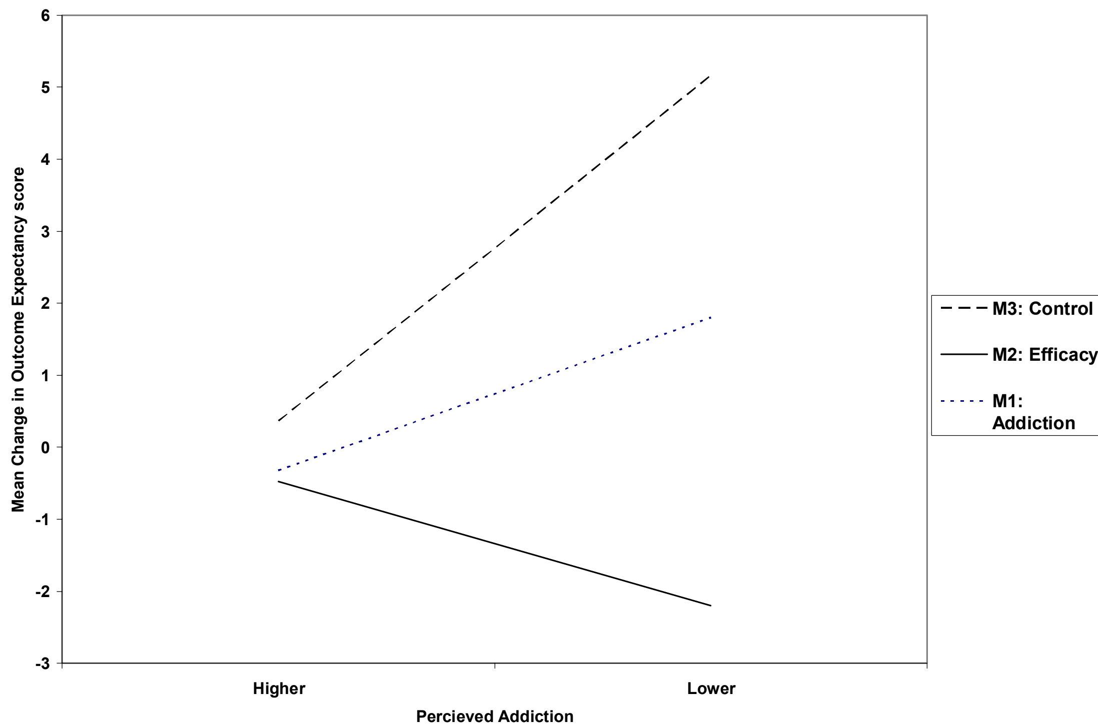
Table 18: Duncan's Post hoc comparison

Note: Means with the same letters are not significantly different

Duncan Grouping	IV/level	Mean	N
A	3	2.424	33
B	1	0.000	33
B	2	-0.486	35
Perceived addiction:			
A	1	3.5	16
B	2	0.082	85

Figure 3 displays the interaction of perceived nicotine dependence and message type on participant mean change in value score between baseline and post intervention.

Figure 3: Interaction Effect of Perceived Nicotine Dependence and Message Type on Outcome Expectancy



Participants who perceived themselves as not at all or not very addicted (lower) experienced a larger mean change in outcome expectancy between baseline and post intervention. However this effect varied across treatment conditions; the control group experienced a positive change, the efficacy group a negative change, and the addiction group almost no change. Furthermore for those participants who classified themselves as somewhat or very addicted (higher), no real difference existed between baseline and post intervention mean expectancy score.

4.8 GLM Analysis at 30-day Follow-up (T3)

Table 19 presents the results of the analyses using a FTND as the measure of nicotine dependence. Similar to the post intervention results, no main effect or interaction effect of message type and nicotine dependence was found on the mean change in score between baseline and 30-day follow up (T3).

Table 19: 30-day Follow-up Intervention Analysis using FTND as a Measure of Nicotine Dependence

Model I: Self-efficacy

SE = M + ND + M x ND + E $\qquad$ $F (5,72) = 1.15, p = .3437$

Source	df	F value	P value
Message type	2	0.90	.4102
ND (FTND)	1	1.43	.2361
Message*ND	2	1.51	.2268

Model II: COE

COE = M + ND + M x ND + E $\qquad$ $F (5,71) = 0.48, p = .7928$

Source	df	F value	P value
Message type	2	0.01	.9938
ND (FTND)	1	0.95	.3319
Message*ND	2	0.57	.5657

Model III: Behavioural Control
BC = M + ND + M x ND + E F (5,72) = 0.82, p = .5426

Source	df	F value	P value
Message type	2	0.42	.6591
ND (FTND)	1	0.92	.3398
Message*ND	2	1.39	.2557

Model IV: Quit Aid Efficacy
QAE = M + ND + M x ND + E F (5,72) = 0.89, p = .4925

Source	df	F value	P value
Message type	2	2.18	.1203
ND (FTND)	1	0.18	.6755
Message*ND	2	0.44	.6434

Model V: Cessation Expectancies
CE = M + ND + M x ND + E F (5,72) = 0.75, p = .5895

Source	df	F value	P value
Message type	2	0.25	.7804
ND (FTND)	1	0.02	.9017
Message*ND	2	0.70	.5005

Model VI: Quit Attempt (y/n)
QA = M + ND + M x ND + PQA + E F (6,68) = 1.28, p = .2775

Source	df	F value	P value
Message type	2	0.33	.7190
ND (FTND)	1	3.25	.0759
Message*ND	2	0.56	.5960
Previous # of Quit attempts	1	1.32	.2548

Model VII: Use of a Quit Aid
UQA = M + ND + M x ND + E F (5,33) = 1.25, p = .3098

Source	df	F value	P value
Message type	2	1.80	.1811

ND (FTND)	1	0.02	.8942
Message*ND	2	0.66	.5240

Table 20 presents the results of the analyses using perceived addiction as the measure of nicotine dependence. No main effect or interaction effect of message type and nicotine dependence was found on the mean change in score between baseline and 30-day follow-up (T3) for self-efficacy, quit-aid efficacy, outcome expectancy and behavioural control. A significant effect of nicotine dependence on mean change in COE score was found between baseline and T3.

Table 20: 30-day Follow-up Intervention Analysis Using Perceived Addiction as the Measure for Nicotine Dependence

Model I: Self-efficacy
SE = M + ND + M x ND + E   F (5,67) = 0.30, p = .9105

Source	df	F value	P value
Message type	2	0.11	.8965
ND (PA)	1	0.12	.7317
Message*ND	2	0.10	.9031

Model II: COE
COE = M + ND + M x ND + E   F (5,59) = 1.05, p = .3968

Source	df	F value	P value
Message type	2	0.34	.7153
ND (PA)	1	4.73	.0337
Message*ND	2	0.30	.7384

Model III: Behavioural Control
BC = M + ND + M x ND + E   F (5,71) = 0.22, p = .9526

Source	df	F value	P value
Message type	2	0.15	.8649
ND (PA)	1	0.00	.9697
Message*ND	2	0.24	.7874

Model IV: Quit Aid Efficacy
QAE = M + ND + M x ND + E $F\ (5,65) = 0.58$, $p = .7186$

Source	df	F value	P value
Message type	2	0.30	.7437
ND (PA)	1	0.36	.5487
Message*ND	2	0.50	.6087

Model V: Cessation Expectancies
CE = M + ND + M x ND + E $F\ (5,72) = 1.21$, $p = .3118$

Source	df	F value	P value
Message type	2	0.91	.4083
ND (PA)	1	1.65	.2034
Message*ND	2	0.56	.5709

Model VI: Quit Attempt (y/n)
QA = M + ND + M x ND + PQA + E $F\ (5,71) = 1.29$, $p = .2783$

Source	df	F value	P value
Message type	2	1.17	0.317
ND (PA)	1	2.02	0.159
Message*ND	2	1.35	0.267

Model VII: Use of a Quit Aid
UQA = M + ND + M x ND + E $F\ (5,34) = 1.50$, $p = .2159$

Source	df	F value	P value
Message type	2	1.15	.3301
ND (PA)	1	0.03	.8546
Message*ND	2	0.93	0.404

Chapter 5

Discussion

The pilot study suggested that smokers may prefer efficacy enhanced messages over addiction oriented messages. However, more rigorous, empirical testing in the main study found that message types did not generally have a systematic effect on precursors to smoking cessation behaviour. General linear model analysis revealed that message type (addiction focused, efficacy enhanced, and control) was not related to participants' mean change in self-efficacy, cessation outcomes expectations, behavioural control, outcome expectancies, and quit-aid efficacy between baseline and post-intervention or between baseline and 30-day follow up. Likewise the effect of message type did not depend on participant nicotine dependence level when measured by the Fagerstrom Test for Nicotine Dependence at either post intervention or at 30-day follow up. However, when perceived addiction was used as the measure for nicotine dependence, an interaction effect between nicotine dependence and message type was found for participant mean change in outcome expectancy. As well as a main effect of nicotine dependence on participant mean change in self-efficacy (between baseline and post intervention) and cessation outcome expectations (between baseline and 30-day follow up) was found.

The discrepancy in findings between the two measures of nicotine dependence (FTND and perceived addiction) highlights a very important fact; nicotine dependence may not be a unidimensional construct. Therefore the method in which nicotine dependence is conceptualized and defined may have important implications for the findings of a study. Although the FTND is commonly used tool for assessing nicotine dependence, this scale taps into the physical domain of nicotine dependence. In contrast, perceived level of addiction is a

self-reported measure of nicotine addiction and measures how much one believes he or she is addicted to nicotine. Interestingly, in the present study, physical nicotine dependence (FTND) did not exert an effect but self-reported nicotine dependence (perceived addiction) did have some effect. Not surprisingly perceived addiction had an effect on participant mean change in self-efficacy between baseline and post intervention. Participants' perceived nicotine addiction is a likely influence on their perception of their abilities to refrain from smoking (i.e. self-efficacy). Those who believe they are not really addicted may also believe that they have the ability to refrain from smoking or vice versa. Moreover, perceived addiction is most probably a function of past experiences, self-comparisons, and verbal persuasion all of which are also tied to self-efficacy. Similarly, perceived nicotine addiction affected participant mean change in cessation outcome expectations between baseline and follow-up. Those participants who perceived themselves as less nicotine dependent experienced a significantly higher mean change in outcome expectations compared to participants who perceived themselves as somewhat or very addicted to nicotine. Similar to self-efficacy, participants who perceive themselves as less nicotine dependent may hold more positive views about the effects smoking cessation will have on them (i.e they may believe they will not experience difficulty managing withdrawal symptoms or that their next quit attempt will most likely be a success).

The only significant interaction between message type and nicotine dependence was seen for outcome expectancies. Participants mean change in outcome expectancy between baseline and follow-up depended on their perceived level of addiction and their intervention condition. This in itself is not surprising however the nature of the interaction was unexpected. Participants with lower perceived addiction and who received the control essay had the highest mean change in outcome expectancy score while those in the efficacy message condition

experienced a decline between baseline and post intervention. There are at least two possible explanations. First, this finding may simply be a statistical artifact. This could be due either to the number of analyses that were conducted or the use of a measure with poor psychometric properties. The former would suggest that the effect was a spurious finding as a result of the probability of finding an effect when so many analyses were conducted. The latter involves the use of the constructed outcome expectancies scale. Although the scale was pilot tested, more testing would have been ideal to establish the validity of the scale. A factor analysis of the outcome expectancy scale was undertaken to determine the scales factorial validity (i.e. construct validity). The factor analysis revealed that it was a two factor scale but that only one item out of seven ("saving money by quitting is important to me") loaded on the second factor. Therefore the scale's construct validity, although fair, remains a concern and the scale may not have been a good measure of outcome expectancy for this study. Future work should include removing the second factor item and re-assessing the scale's psychometric properties. The second possible situation is that this finding may in fact be true. If this were the case, it would suggest that for those participants who perceive themselves as not very or a little addicted, the efficacy building essay had an iatrogenic effect on their outcome expectancies and the control condition had a beneficial impact. The reason behind why such a phenomenon would have resulted is puzzling and no adequate explanation has been postulated.

On the other hand, those participants who perceived themselves as somewhat or very addicted to nicotine experienced almost no change in mean outcome expectancy score across treatment conditions between baseline and post intervention. For these participants how much they valued quitting and the outcomes of quitting (i.e improving health) did not change regardless of the messages they received. Cognitive dissonance offers a possible explanation

for this. According to this theory, people whose behaviour contradicts their cognitions are in a state of dissonance and therefore become motivated to reduce their dissonance by either changing their behaviour to be in line with their cognition or modifying their cognition to be line with their behaviour (Elliot, Wilson, Akert, and Fehr, 2004). In the present study, smokers who are thinking of quitting but perceive themselves as very addicted may reduce the resulting state of dissonance by not valuing quitting or the outcomes of quitting.

Taken as whole, this study suggests that message type did not impact the variables related to smoking cessation. However, literature in the area of mass media and smoking cessation suggests that messages can impact variables important to cessation such as smokers' self-efficacy and outcome expectations (Wong and McMurray, 2002; Maheseswaran and Meyers-Levy, 1990; Smith and Petty, 1996; Witte and Allen 2000). These studies have mainly focused on framing type/style. The present study aimed to further knowledge in this area by examining the effect of message orientation on self-efficacy, cessation outcome expectations, behavioural control, and quit-aid efficacy. For the most part, it failed to find a relationship between the content in media messages and the variables related to cessation. Witte and Allen (2000) conducted a meta-analysis of fear appeals and concluded that strong fear appeals are effective only when they are accompanied by equally strong efficacy messages. In this case, efficacy messages consisted of both self-efficacy (target population believes that they are able to carry out the recommended response) and response-efficacy (target population must believe that the recommended response works in reducing or avoiding a threat). Addiction oriented messages such as "nicotine is as addictive as heroin and cocaine" can be likened to fear appeals. Consistent with the literature on fear appeals, addiction oriented messages would be most effective if coupled with strong efficacy messages. In this study, participants in the

addiction focused group were given addiction messages without efficacy messages. This should have decreased the effectiveness of such messages especially on variables such as self-efficacy. However, this study failed to find an effect for message type on the most of the outcome variables associated with cessation and on participant cessation behaviour. Future studies may want to incorporate an additional intervention group that received equally strong addiction and efficacy enhancing messages. This would enable a comparison between addiction-only and addiction and efficacy coupled messages on the variables related to smoking cessation.

A study by McDonald, Filsinger, Pieter, Ahmed, and Brown (2004) compared fear, efficacy, and information oriented advertising in promoting smoking cessation campaigns. Current smokers were asked to review three types of ads: 1) fear and efficacy coupled ads, efficacy only ads, and information only ads. After viewing the ads, they were asked, among other things, whether each ad increased, decreased or had no effect on their "confidence to quit". Efficacy-based ads were most often ranked highest by participants with respect to self-efficacy for quitting. In the present study, the pilot results support these findings as most of the participants in the pilot study preferred the efficacy based message over the addiction oriented message. However, the main study failed to find a relationship between message type and the outcomes related to quitting.

There are a few possible explanations for why the current study failed to find a relationship between message orientation and most of the variables related quitting and quitting behaviour.

First, there are limits to what a brief intervention such as a single short essay can accomplish in isolation. In the present study no significant differences existed for most of the

outcome variables between those who received an intervention (addiction or efficacy) and the control. If the intervention essays were strong enough one would expect there to be a difference between those who received the essays and those who didn't. However in this study no such effect was found. The use of a short essay may have been too brief an intervention for this study. Past literature has shown that essays can successfully manipulate self-efficacy for quitting smoking and related intentions to quit or reduce smoking (Maddux & Rogers, 1983). For example, Maddux and Rogers (1983) manipulated participant self-efficacy and outcome expectation via essays on cigarette smoking which contained factual and fabricated information that either supported the conclusion that the reader would have relatively little difficulty or relatively great difficulty reducing or eliminating cigarettes smoking. However, the present study failed to manipulate participant self-efficacy or outcomes expectations via essays.

SCT suggests that the broader social context must also be taken into consideration when evaluating the effect of an intervention. According to Bandura humans are social creatures that are affected by their social and physical environment. People and their environment continually interact and what people think about their situations affects their behaviour. In the present study the larger social context that frequently emphasizes the addictiveness of nicotine and the difficulties of quitting may have overwhelmed the effects of a single efficacy message or neutral message. The efficacy enhancing message may have been more effective if the broader smoking cessation campaigns reinforced this message as opposed to contradicting it. Future studies should consider employing a more intensive intervention based on more than one brief essay at one point in time.

Second, the intervention was a single event. According to MacLachlan (1984), a number of techniques increase the recall of a message campaign. One such technique is repeating key points. Evidence suggests that there is a systematic relationship between the number of times materials are repeated and long-term recall of that material (McLachlan, 1984). The present study only employed a single presentation of the intervention messages. The pilot study did suggest that participants preferred efficacy-based messages over addiction based, but this preference did not lead to an effect of message orientation on the variables related quitting or actual quitting behaviour. This could be a function of the fact that participants received only a single exposure of the intervention essays. Once again, the fact that no difference was seen between treatment groups and the control groups in the present study supports the idea that the intervention was too short. The intervention could have been enhanced if participants were given multiple exposures to the essays. Future studies may find it beneficial to incorporate repeated exposures to the intervention essays into their study design. This would enable researchers to examine whether a cumulative effect exists between message orientation and variables related to quitting and quitting attempts. Although this study failed to find an acute effect, this does not eliminate the possibility of a more chronic effect resulting from long-term exposure.

To our knowledge, this study was the first study to examine the effect of messages on COE and QAE. There were no validated COE and QAE measures available for use in the study. An attempt was made to construct sound and reliable scales to measure the two concepts; however, the validity and reliability of these measures remained a concern. The pilot test revealed poor psychometric properties of the constructed scales. With the help of an expert in field of smoking cessation and social psychology, revisions were made and participant

feedback was incorporated. However, due to time restrictions the second drafts of the questionnaires were not piloted tested before adopting them for use in the present study. Therefore, the null finding may reflect the inadequacy of the construct validity and reliability of these measures. However, this study took the first necessary step in the process of constructing validated measures for cessation outcome expectations and quit-aid efficacy. Future studies are encouraged to take the next step and continue to refine the scales.

Although this study was carefully planned to circumvent potential limitations, the following issues remain. The use of a convenience sample has two implications for the external validity and internal validity of the study. First, it restricts the generalizability of the results to the greater population of Canadian smokers. Second, the study is vulnerable to a participant bias; those individuals who decide to participate may systematically differ compared to those who decided not to participate. Since this study is mainly concerned with determining if effects exist among smokers, it is not imperative to have a sample representative of all smokers.

Another potential issue for this study is the manner in which the FTND was split to classify participants as higher and lower dependence. The FTND typically classifies individuals into 4 groups of dependence: very low dependence (0-2), medium dependence (3-5), high dependence (6-7), and very high dependence (8-10). Therefore, using a median split (0-4 and 5-10) to group participants into lower and higher dependence may reduce the detectable differences between these groups. This may impact on the study's ability to detect an effect based on nicotine dependence. An alternate method to classify nicotine dependence would involve separating participants into three groups of lower, moderate, and higher dependence. In this situation, the middle range (moderate dependence) would be excluded from the study leaving the two groups of interest for inclusion into the study. Given that a large

proportion of the population of smokers falls into the middle range, excluding those individuals from the study will result in: (1) a lot of wasted data, and (2) an increase in recruitment in order to meet the minimum sample size requirements for this study. A second issue surrounding the use of the FTND was its suitability for the study sample. Etter, Vu Duc, and Perneger (1999) conducted a study to determine the validity of the FTND among light smokers. The researchers found that for light smokers (average of 12 cigarettes per day) the FTND was a poor measure of nicotine dependence; the test had a floor effect with 55% of participants scoring 0 and 65% scoring 1. The authors concluded that the FTND may not be a valid test of nicotine dependence for light smokers. In the current study, the majority of the participants were light smokers (average of 12.9 cigarettes per day) Therefore, the FTND may not have been a good measure of nicotine dependence for this study sample.

Another limitation was the season in which the 30-day follow-up occurred. A large proportion of the study participants were students. Unfortunately, the 30-day call back for a number of students fell into the end of spring term (exams) or beginning of the summer term. Therefore, participants were lost to follow-up because they were busy studying for exams or moved (accounting for the large number of disconnected phone numbers at follow-up). Future studies that include students may want to consider the school term when developing their timeline.

One final issue involves potential confounders. Although random assignment was used to control for possible confounders, it might have been useful to measure other variables that may be important to the present study but were not examined. For example, variables such as depression, affect, income, and social support have been shown to be related to smoking

cessation. However, the addition of these variables to the study risked overburdening participants, therefore were left out.

5.1 Conclusions and Implications

Mass media is an important avenue for delivering smoking cessation messages to smokers. As such, it is important to evaluate all the possible effects (good and bad) of such efforts on their target group. To this end, this study aimed to expand on our current understanding of mass media smoking cessation campaigns (i.e. warning labels) by evaluating the impact of message orientation (addiction focused and efficacy enhanced) on variables related smoking cessation and cessation behaviour. All in all, the findings of this study suggest that fear based messages may not negatively impact the variables related to smoking cessation such as self-efficacy, cessation outcome expectations, outcome expectancy, and quit-aid efficacy for smokers in this study's sample. The impact of nicotine dependence differed according to the method by which it is defined. The FTND produced no effects whereas, self-reported addiction interacted with message type to influence mean change in outcome expectancy. This may be suggestive of the fact that nicotine dependence is made of many dimensions and physical dependence as measured by FTND may be less important compared to self-reported perceptions of addiction when it comes to variables such as self-efficacy and outcome expectancy,

There is evidence to suggest that the orientation used in media messages may be important to smokers thinking of quitting. Although the analyses did not reach significance, there appears to be some benefit to the efficacy enhanced messages over the addiction oriented messages to smokers' quit attempts (length of smoke-free days, use of quit aid, and proximity of quit attempt).

Before more can be concluded about this possible mechanism of impact, more research to help clarify the results is needed. Future studies should pay attention to limitations of this study when moving forward with testing the impact of message orientation on quitting smoking.

Although the findings of this study did not find that message type was a significant predictor of the variables related to smoking cessation, the findings should not be interpreted to suggest that the message orientation used in cessation messages is not an important consideration when constructing such campaigns. This study examined only the acute effects of the interventions (30-day follow up) however it still remains unknown as to whether or not a cumulative effect would result if the intervention is repeated and made more potent.

Consistent with Bandura (1986), verbal persuasion can influence behaviour change by impacting variables like self-efficacy. With this in mind, policy makers and program designers should be mindful of the messages they are conveying to smokers. They are encouraged to incorporate efficacy-based messages that build smokers' efficacy in their ability to quit and limit the use of messages such as "nicotine is as addictive as heroin and cocaine".

Appendix 1: Newspaper Ad

HAVE YOU THOUGHT ABOUT QUITTING SMOKING?
We are looking for volunteers to take part in a pilot study to help improve current smoking cessation questionnaires and media materials. As a participant you will be asked to read smoking cessation material and complete questionnaires. You will be re-contacted 7-days later for a follow-up telephone questionnaire. Your participation will involve 1 lab session and 1 telephone survey, which will take approximately 60 minutes in total.
For more information about this study, or to volunteer for this study, please contact:

Fauzia Ashraf
University of Waterloo
Department of Health Studies and Gerontology
519 888-4567 x 6810
Email: fashraf@ahsmail.uwaterloo.ca

This study has been reviewed by, and received ethics clearance through, the Office of Research Ethics, at the University of Waterloo.

Appendix 2: Screening Form & Telephone Screening Form

The following questions will be used to determine if you are eligible to participate in this study. Please answer the questions and return it to the researcher

1. Are you 18 years of age or older?
Yes No

2. Are you able to read, write, and understand English?
Yes No

3. Do you currently smoke cigarettes?
Yes No

4. Have you smoked at least 100 cigarettes in your lifetime?
Yes No

5. Have you smoked at least one cigarette in the last 30 days?
Yes No

6. Are you considering quitting smoking within the next 6 months?
Yes No

7. Would you be willing to use a quit aid to help you quit in the next 30 days?
Yes No

8. Do you have any uncorrected vision problems?
Yes No

9. Are you pregnant or breast feeding?
Yes No Not Applicable

10. Are you currently free of all the following medical conditions: uncontrolled hypertension, arrhythmia (irregular heartbeat), and a heart attack in the past 6 months?
Yes No

11. Have you received a recent diagnosis of major depression, anxiety disorder, schizophrenia, alcohol or drug abuse?
Yes No

FOR OFFICE USE ONLY
Date:
Recruiter:
Participant Eligibility:

Eligible Participants Only

Participant Contact information:

Name:

To enable us to inform you of any changes to your appointment time and to administer the follow-up questionnaires, please provide the following telephone numbers

Home:

Business (if applicable):

Mobile (if applicable):

Address (optional):

Email (optional):

Scheduled appointment:

Yes

No (alternate call back time and date to schedule appointment):

Directions to Lab and contact information given to participant:

Date of appointment:

Consent form signed:

Researcher:

Recruitment Number:

Telephone screening form: I'm going to ask you some questions to determine your eligibility status.

1. Are you 18 years of age or older?
Yes No

2. Are you able to read, write, and understand English?
Yes No

3. Do you currently smoke cigarettes?
Yes No

4. Have you smoked at least 100 cigarettes in your lifetime?
Yes No

5. Have you smoked at least one cigarette in the last 30 days?
Yes No

6. Are you considering quitting smoking within the next 6 months?
Yes No

7. Would you be willing to use a quit aid to help you quit in the next 30 days?
Yes No

8. Do you have any uncorrected vision problems?
Yes No

9. ***If female participant only*****: Are you pregnant or breast feeding?**
Yes No

10. Are you currently free of all the following medical conditions: uncontrolled hypertension, arrhythmia (irregular heartbeat), and a heart attack in the past 6 months?
Yes No

11. Have you received a recent diagnosis of major depression, anxiety disorder, schizophrenia, alcohol or drug abuse?
Yes No

If participant answered No to any of the above questions then ineligible: *"unfortunately, you are **ineligible** to participate in this study. Thank you for your interests."*

If participant answered Yes to all the above questions*:*
*"You **are eligible** to participate. I would like to book a lab appointment for at your earliest convenience."*

FOR OFFICE USE ONLY
Date:
Recruiter:
Participant Eligibility:

Eligible Participants Only

Participant Contact information:

Name:

To enable us to inform you of any changes to your appointment time and to administer the follow-up questionnaires, please provide the following telephone numbers

Home:
Business:
Mobile:
Address (optional):
Email (optional):

Scheduled appointment:

Yes

No (alternate call back time and date to schedule appointment):

Directions to Lab and contact information given to participant:

Date of appointment:

Recruitment Number:

Appendix 3: Information Letter & Consent Form

Fauzia Ashraf
Department of Health Studies and Gerontology
University of Waterloo
519 888-4567 x 6810
fashraf@ahsmail.uwaterloo.ca

Date

Dear Sir or Madam,

You are being invited to participate in a pilot study to improve smoking cessation materials and two questionnaires; both of which will be used later in the larger study designed to help smokers quit.

In the past, it has been shown that the content of materials on quitting can impact how smokers react to these material and their decisions to quit. We would like to determine smokers' impressions of newly developed education and mass media materials on quitting. We hope to determine what elements of these materials stand out most to smokers and how these elements impact on smokers' beliefs and smoking behaviours.

Two questionnaires were developed because none exist that measure smokers' perceived outcomes of quitting and smokers' perceptions of the usefulness of quit aids for quitting. Both of these questionnaires are needed in order to conduct the larger smoking cessation study. But before these two questionnaires can be used, they have to be pilot tested to ensure that they are good or valid scales.

This study is being conducted by Fauzia Ashraf (graduate student) under the supervision of Dr. Paul McDonald, both of whom are with the Department of Health Studies and Gerontology at the University of Waterloo.

As a research participant, you will be asked to read 2 essays on smoking cessation. After reading the material you will be asked to answer some questions on essay content. Here is an example of the types of question you may be asked "In your own words, what would you say is the purpose of the essay?" After you have read both essays and answered questions, you will be asked to fill out the questionnaires we developed. Examples of the types of questions include "will using a smoking cessation aid help me quit smoking?" or "will I gain financially by quitting smoking?"
Finally, we would like to contact you approximately 7 days later for a telephone administration of the same two questionnaires. The first session will take approximately 45 minutes and the telephone survey will take approximately 15 minutes.

Your assistance in this study will help develop more effective and accepted materials to help smokers quit and to collect important information. Although there are no personal benefits for you, your participation will benefit research in the field of tobacco control. Furthermore, your participation will allow us to carry out a larger study that may help smokers quit smoking. There are no known or anticipated risks to your participation in this study

All information collected from you, and others who participate, will be grouped together. Your name will not appear in any report, publication or presentation resulting from this study. All information that can identify participants, such as yourself, will be removed from the data to ensure confidentiality. The data will be kept for a period of 5 years and will be securely stored in a password protected computer in a locked office in the research laboratory. After 5 years, the paper records will be shredded and electronic records will be deleted.

Your participation in this study is completely voluntary, and you may withdraw from the study at any point without any consequences by simply informing the researcher of your decision. You may also leave unanswered any questions you prefer not to answer.

If you have questions, please contact Fauzia Ashraf at (519) 888-4567 ext. 6810 or by email at fashraf@ahsmail.uwaterloo.ca

This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics. In the event you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes in the office of Research Ethics at 519-888-4567, Ext. 6005.

Thank you for your assistance with this research project.

Sincerely,

Fauzia Ashraf, MSc Candidate	Paul McDonald, Ph D
Student Researcher	Associate Professor
Dept. of Health Studies	Dept. of Health Studies
& Gerontology	& Gerontology
University of Waterloo	University of Waterloo

I have read the information presented in the information letter about a study being conducted by Fauzia Ashraf of the Department of Health Studies and Gerontology at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted. I am aware that I may withdraw from the study without penalty at any time by advising the researchers of this decision.

This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Director, Office of Research Ethics at (519) 888-4567 ext. 6005.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

____

Print Name

____

Signature of Participant

____

Dated at Kitchener/Waterloo, Ontario

____

Witnessed

Appendix 4: Essay Comprehension Questionnaire & Instruction Sheet

Essay:___________________________

I: Now that you have read the essay and underlined the points you feel are important, please indicate the extent to which you agree or disagree with each of the following statements by circling the appropriate answer

.

1. The essay contained mostly positive outcomes of quitting smoking.

Agree Strongly Agree Disagree Strongly disagree Neither Agree or Disagree

2. The essay contained encouraging statements to help me quit.

Agree Strongly Agree Disagree Strongly disagree Neither Agree or Disagree

3. The essay mostly contained statements on the addictiveness of nicotine.

Agree Strongly Agree Disagree Strongly disagree Neither Agree or Disagree

4. The essay did not contain supportive and encouraging statements to help me quit.

Agree Strongly Agree Disagree Strongly disagree Neither Agree or Disagree

II: The following questions will ask you some details about the essay you read. Please write your answers in the space provided. If you need more space, please use the blank sheets provided.

5. With the RED pen provided, please go back and CIRCLE anything in the essay (words, phrases, sentences) you don't understand or that you believe was written in a confusing way.

6. In your own words, what would you say is the purpose of the essay?

7. What are the main points of this essay?

8. Which sentences or phrases stick out most to you?

9. How much of the information in the essay is new to you?

Most of it   Some of it   None

10. Please list the information (if any) that is new to you.

11. The following are a series of phrases describing the essay. Please circle the *one* choice on each line that most closely reflects *your opinion*.

a.	very interesting	somewhat interesting	not at all interesting
b.	very informative	somewhat informative	not informative
c.	accurate	partially accurate	inaccurate
d.	very clear	somewhat clear	confusing
e.	very useful	somewhat useful	not useful
f.	easy to read	understandable	hard to understand
g.	encouraging	somewhat encouraging	discouraging
h.	positive tone	neutral tone	negative tone
i.			

12. Would you like to say anything else about the essay? Please comment:

.

13. Please answer the following question only after you have read both essays. Circle the essay you prefer or liked most:

M1 **M2**

Please comment on your choice:

Instructions

The following are the instructions for participating. Please review them. If you have any question please do not hesitate to ask the researcher for clarification.

Step 1: Please read Essay 1. As you read the essay, UNDERLINE all phrases, sentences, or paragraphs that stand out to you or that you feel are important using the BLUE pen provided

Step 2: Please fill out the essay questionnaire

Step 3: Please read Essay 2. As you read the essay, UNDERLINE all phrases, sentences, or paragraphs that stand out to you or that you feel are important using the BLUE pen provided

Step 4: After reading the essay, please fill out the second essay questionnaire.

Step 5: Now that you have finished with the essays, you can move onto the second part of the study. All you have to do is fill out pilot questionnaire 1 and pilot questionnaire 2.

Thank you, your time and effort are greatly appreciated.

Appendix 5: Cessation Outcome Expectations Questionnaire & Quit-aid Efficacy Questionnaire

Part I: The following questions will ask you about the different ways to quit smoking and how they might relate to you. For each of the statements, please indicate to what extent you AGREE or DISAGREE. If you DISAGREE with the statement, mark a number from 0-2. If you AGREE with the statement, mark a number from 3-5. Use the guide below to help you.

0	1	2	3	4	5
Strongly	Moderately	Mildly	Mildly	Moderately	Strongly
DISAGREE			**AGREE**		

1. The use of prescription medications (such as Zyban, buproprion) will not help me quit and remain smoke-free

0 1 2 3 4 5

2. The use of Nicotine Replacement Therapy (patch, gum, or inhaler) will help me quit smoking and remain smoke-free

0 1 2 3 4 5

3. Joining a group program, calling a telephone support line, or using an individual counselling service will not help me quit and remain smoke free

0 1 2 3 4 5

4. Using smoking cessation aids will not help me quit and remain smoke-free.

0 1 2 3 4 5

5. The use of prescription medications (such as Zyban, buproprion) will help me quit and remain smoke-free.

0 1 2 3 4 5

6. Using cessation aids will not make quitting smoking easier for me

0 1 2 3 4 5

7. Even though quitting smoking is difficult, using a cessation aid will help make it easier for me to quit

0 1 2 3 4 5

8. Joining a group program, calling a telephone support line, or using an individual counselling service will help me quit and remain smoke free

0 1 2 3 4 5

9. Using Nicotine Replacement Therapy (patch, gum, or inhaler) will not help me quit smoking and remain smoke-free

0 1 2 3 4 5

10. The use of smoking cessation aids will help me quit and remain smoke-free

0 1 2 3 4 5

Part II: Below is a list of statements about the possible consequence of quitting and how important the consequences are for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement. If you DISAGREE mark a number from 0-2. If you AGREE, mark a number from 3-5. Use the guide below to help you

0	1	2	3	4	5
Strongly	Moderately	Mildly	Mildly	Moderately	Strongly
DISAGREE			**AGREE**		

1. Experiencing fewer withdrawal symptoms is important to me

   0 1 2 3 4 5

2. As a non-smoker, I will be a positive role-model for others in my life

   0 1 2 3 4 5

3. My first quit attempt will most likely end in failure

   0 1 2 3 4 5

4. As a non-smoker I will not be a positive role-model for others in my life

   0 1 2 3 4 5

5. Quitting smoking is an important accomplishment to me

   0 1 2 3 4 5

6. Quitting smoking will leave me craving for nicotine all the time

   0 1 2 3 4 5

7. I will experience few withdrawal symptoms after quitting

   0 1 2 3 4 5

8. My health will not improve as a result of quitting

0 1 2 3 4

9. I will find other ways to manage my stress after quitting smoking

0 1 2 3 4 5

10. Being a positive role model is important to me

0 1 2 3 4 5

11. After quitting, I will not be able to effectively manage stress

0 1 2 3 4 5

12. Quitting smoking will make me feel awful and grumpy

0 1 2 3 4 5

13. I will feel good about myself for quitting smoking

0 1 2 3 4 5

14. My family and friends feeling proud of me for quitting is important to me

0 1 2 3 4 5

15. I will not feel proud of myself for quitting

0 1 2 3 4 5

16. Quitting smoking will make me feel irritable, anxious, and/or restless

0 1 2 3 4 5

17. I will be able to manage withdrawal symptoms after quitting

0 1 2 3 4 5

18. Quitting is important to me

0 1 2 3 4 5

19. Since nicotine is a powerful addiction I will experience many withdrawal symptoms

0 1 2 3 4 5

20. My friends and family will be proud of me for quitting smoking

0 1 2 3 4 5

21. I will benefit financially by quitting smoking

0 1 2 3 4 5

22. My family and friends will not be proud of me for quitting smoking

0 1 2 3 4 5

23. It will take me several tries before I successfully quit

0 1 2 3 4 5

24. I will not benefit financially by quitting smoking

0 1 2 3 4 5

25. Managing my stress is important to me

0 1 2 3 4 5

26. Managing withdrawal symptoms is important to me.

0 1 2 3 4 5

27. Feeling proud about myself is important to me

0 1 2 3 4 5

28. Saving money by quitting is important to me

0 1 2 3 4 5

29. I will be unsuccessful at quitting

0 1 2 3 4 5

30. Improving my health is important to me

0 1 2 3 4 5

31. Nicotine is so addictive that I will experience great difficulty trying to break the habit

0 1 2 3 4 5

32. I will be successful at quitting

0 1 2 3 4 5

33. Managing my cravings is important to me

0 1 2 3 4 5

34. Quitting smoking is a big accomplishment

0 1 2 3 4 5

35. My health will immediately improve as a result of quitting smoking

0 1 2 3 4 5

36. Quitting smoking is not a big accomplishment

0 1 2 3 4 5

37. I will be unsuccessful at managing my withdrawal symptoms

0 1 2 3 4 5

38. I will be able to manage cigarette cravings after quitting

0 1 2 3 4 5

Appendix 6: COE & Quit-Aid Readability Questionnaire

Questionnaire:______________________

To help us improve the questionnaire, please complete the following

1. Re-read the questions aloud to your-self. As you read the questions, think about the question. With the RED pen provided, please CIRCLE the questions you feel do not make sense or that are worded in a confusing manner.

2. In your opinion, the questions overall were:

a. Easy to read Understandable Hard to understand

b. Very clear Somewhat clear Confusing

3. Would you like to say anything else about the questions? Please comment:

Appendix 7: 7 Day Follow-up Telephone Survey and Script

TELEPHONE SCRIPT

For 7-day Call Back Questionnaire

Researcher: HI, May I please speak to [name participant]?

Researcher: My name is Fauzia Ashraf and I am calling from the Department of Health Studies & Gerontology at University of Waterloo. As you might recall, approximately 7 days ago you came into the University to participate in a pilot study on improving smoking cessation materials and questionnaires. At that time, you scheduled today (today's date and current time) for your follow-up telephone survey. If it is alright with you, I would like to proceed by asking you some questions.

Participant - No, could you call back later (agree on a more convenient time to call person back)

Date/Time:____

Participant - Yes, proceed with survey

Part I: For the next few questions, I will ask you about the different ways to quit smoking and how they might relate to you. For each of the statements, please tell me to what extent you AGREE or DISAGREE.

Read scale to participants:

0	1	2	3	4	5
Strongly	Moderately	Mildly	Mildly	Moderately	Strongly
DISAGREE			**AGREE**		

1. The use of prescription medications (such as Zyban, buproprion) will not help me quit and remain smoke-free

0 1 2 3 4 5

2. The use of Nicotine Replacement Therapy (patch, gum, or inhaler) will help me quit smoking and remain smoke-free

0 1 2 3 4 5

3. Joining a group program, calling a telephone support line, or using an individual counselling service will not help me quit and remain smoke free

0 1 2 3 4 5

4. Using smoking cessation aids will not help me quit and remain smoke-free.

0 1 2 3 4 5

5. The use of prescription medications (such as Zyban, buproprion) will help me quit and remain smoke-free.

0 1 2 3 4 5

6. Using cessation aids will not make quitting smoking easier for me

0 1 2 3 4 5

7. Even though quitting smoking is difficult, using a cessation aid will help make it easier for me to quit

0 1 2 3 4 5

8. Joining a group program, calling a telephone support line, or using an individual counselling service will help me quit and remain smoke free

0 1 2 3 4 5

9. Using Nicotine Replacement Therapy (patch, gum, or inhaler) will not help me quit smoking and remain smoke-free

0 1 2 3 4 5

10. The use of smoking cessation aids will help me quit and remain smoke-free

0 1 2 3 4 5

Part II: Now, I will read to you statements about the possible consequence of quitting and the importance of such consequences for you. For each of the statements please tell how much you AGREE or DISAGREE with the statement.

Read scale to participants

0	1	2	3	4	5
Strongly	Moderately	Mildly	Mildly	Moderately	Strongly
DISAGREE			**AGREE**		

1. Experiencing fewer withdrawal symptoms is important to me

 0 1 2 3 4 5

2. As a non-smoker, I will be a positive role-model for other in my life

 0 1 2 3 4 5

3. My first quit attempt will most likely end in failure

 0 1 2 3 4 5

4. As a non-smoker I will not be a positive role-model for others in my life

 0 1 2 3 4 5

5. Quitting smoking is an important accomplishment to me

 0 1 2 3 4 5

6. Quitting smoking will leave me craving for nicotine all the time

 0 1 2 3 4 5

7. I will experience few withdrawal symptoms after quitting

 0 1 2 3 4 5

8. My health will not improve as a result of quitting

 0 1 2 3 4

9. I will find other ways to manage my stress after quitting smoking

0 1 2 3 4 5

10. Being a positive role model is important to me

0 1 2 3 4 5

11. After quitting, I will not be able to effectively manage stress

0 1 2 3 4 5

12. Quitting smoking will make me feel awful and grumpy

0 1 2 3 4 5

13. I will feel good about myself for quitting smoking

0 1 2 3 4 5

14. My family and friends feeling proud of me for quitting is important to me

0 1 2 3 4 5

15. I will not feel proud of myself for quitting

0 1 2 3 4 5

16. Quitting smoking will make me feel irritable, anxious, and/or restless

0 1 2 3 4 5

17. I will be able to manage withdrawal symptoms after quitting

0 1 2 3 4 5

18. Quitting is important to me

0 1 2 3 4 5

19. Since nicotine is a powerful addiction I will experience many withdrawal symptoms

0 1 2 3 4 5

20. My friends and family will be proud of me for quitting smoking

0 1 2 3 4 5

21. I will benefit financially by quitting smoking

0 1 2 3 4 5

22. My family and friends will not be proud of me for quitting smoking

0 1 2 3 4 5

23. It will take me several tries before I successfully quit

0 1 2 3 4 5

24. I will not benefit financially by quitting smoking

0 1 2 3 4 5

25. Managing my stress is important to me

0 1 2 3 4 5

26. Managing withdrawal symptoms is important to me.

0 1 2 3 4 5

27. Feeling proud about myself is important to me

0 1 2 3 4 5

28. Saving money by quitting is important to me

0 1 2 3 4 5

29. I will be unsuccessful at quitting

0 1 2 3 4 5

30. Improving my health is important to me

0 1 2 3 4 5

31. Nicotine is so addictive that I will experience great difficulty trying to break the habit

0 1 2 3 4 5

32. I will be successful at quitting

0 1 2 3 4 5

33. Managing my cravings is important to me

0 1 2 3 4 5

34. Quitting smoking is a big accomplishment

0 1 2 3 4 5

35. My health will immediately improve as a result of quitting smoking

0 1 2 3 4 5

36. Quitting smoking is not a big accomplishment

0 1 2 3 4 5

37. I will be unsuccessful at managing my withdrawal symptoms

0 1 2 3 4 5

38. I will be able to manage cigarette cravings after quitting

0 1 2 3 4 5

Appendix 8: Letter of Appreciation

University of Waterloo

Date

Dear ***(Insert Name of Participant),***

I would like to thank you for your participation in this study. As a reminder, the purpose of this study is to refine smoking cessation materials and two questionnaires for later use in a smoking cessation study.

The data collected from the questionnaires will contribute to a better understanding of smokers' impressions of newly developed education and mass media materials on quitting. With your input, we hope to determine what elements of these materials stand out most to smokers and how these elements impact on smokers' beliefs and smoking behaviours. In addition to this, your participation will help us determine the usefulness of two different scales we developed to measure concepts important to smoking cessation such as smokers' perceptions of the outcomes of quitting and smokers' perceptions of the usefulness of quit aids (i.e. NRT) in helping them quit.

Please remember that any data pertaining to yourself as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact me at either the phone number or email address listed at the bottom of the page. When the study is completed, I will send you a summary of the results if you have made a request.

As with all University of Waterloo projects involving human participants, this project was reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes in the Office of Research Ethics at 519-888-4567, Ext., 6005.

Sincerely,

Fauzia Ashraf

University of Waterloo
Applied Health Studies & Gerontology

519 888-4567 Ext. 6810
fashraf@ahsmail.uwaterloo.ca

Appendix 9: Pilot Intervention Essays

Essay: Addiction Focused (M1)

Below is some information on quitting smoking. This information is meant to help provide you with an outline to keep in mind when you are thinking about quitting or reading other smoking cessation materials.

If you have tried to quit smoking you know how hard it can be to quit.
This is not surprising since nicotine is a very addictive drug.

Facts on Nicotine Addiction:

Research shows that the symptoms of a drug addiction include physiological and physical dependence, withdrawal, and compulsive drug use. That is, smokers addicted to cigarettes will experience both a psychological dependence and physical dependence, in addition to withdrawals symptoms The U.S. Surgeon General's Report (in 1988) on smoking stated that smoking behaviour meets many of the criteria needed to qualify as an addiction including:

1. A highly controlled or compulsive pattern of drug use. *The experienced smoker has a lot of smoking patterns that (if broken) are disturbing.*
2. Psychoactive, or mood-altering effects involved with drug taking.
3. Drug functioning as a reinforcement to strengthen behavior which leads to further drug ingestion. *It's the nicotine that keeps people smoking.*

The surgeon General concluded that cigarettes and other forms of tobacco are addicting and that nicotine is the drug in tobacco that causes addiction.

The addiction to nicotine is more powerful than an addiction to heroin or cocaine. In fact, studies have shown that tobacco can be harder to quit than heroin or cocaine.

Quitting is hard. Most people don't manage to stay off tobacco the first time they try to quit smoking. People often make several tries before finally being able to quit.

Although quitting takes hard work and a lot of effort, you can quit smoking and there are many reasons to quit. Careful preparation is essential.

Looking ahead: benefits of quitting

Studies show that by quitting smoking you may live a longer life and reduce your chances of developing cardiovascular diseases, strokes, heart attacks, and lung cancer. Researchers also have found evidence to suggest that the earlier you quit the more health benefits you will receive. Other benefits associated with quitting include better sleep, better mental health, and better smelling clothes and breath. There are also benefits for those you love. By quitting smoking you will be protecting your children and loved ones from the harmful effects of the second hand smoke your lit cigarette produces.

Many smokers have already quit, so you can too! Below are tips to help you succeed. Studies show there are 5 key steps that will help you quit and quit for good.

1. Get ready

Start by setting a quit date. The key is to make a commitment to change and develop a quit plan. After setting your quit date, change your home and work environment to be compatible with non-smoking. You should remove all cigarettes, ashtrays, lighters, and not let anyone smoke in your home.

2. Get support

Tell your family and friends that you are quitting and ask them for support and encouragement. It may also be helpful to talk to smokers who are trying to quit as well as your doctor or other health care providers.

3. Learn new skills and behaviour

To help cope with the urges to smoke, try new activities like taking a walk or something you enjoy doing but that is not related to smoking. Smokers report feelings of irritability, grumpiness, and anxiousness when trying to quit. There are ways to help manage these symptoms such as relaxation exercises and listening to soothing music Smokers often state that smoking helps to manage stress. However, you should know that smoking is not a long term solution to managing stress.

4. Reward yourself

Reward your hard work by treating yourself to something you enjoy.

5. Prepare for relapse or difficult situations

Most relapses occur within the first 3 months of quitting.

Don't be discouraged if you start smoking again. Remember, most people try several times before they finally quit.

Finally, there are some additional matters to think about before quitting such as situations and places where you commonly smoke. Avoiding such situations and places (where you used to smoke) might help reduce your chance of relapse. Here are some examples of some concerns smokers have had while quitting:

Alcohol: Avoid drinking alcohol. Studies show that drinking lowers your chances of success.

Other smokers: Being around other smokers can make you want to smoke.

You can talk to your doctor if you are concerned with these or other situations.

You can take control over your smoking and quit. Join the many Canadians who have overcome this hurdle and stopped smoking.

Below is a testimonial from someone who is trying to quit.

"I started smoking at the age of 10, can you believe that?

I figured out that I have smoked nearly 200,000 cigarettes in the past 20 years. I never thought that I could make it one day without smoking. It has always been a part of my life, a friend that is always there. It was a way of life for me.

I have tried to quit many times before (probably about 7) and each time I try, it feels like the hardest thing I have ever done. No wonder they say it's as bad as giving up heroin or cocaine. I haven't given up though, and I am in the middle of another quit attempt.

It has been 15 days since my last cigarette. Sometimes I feel anxious and depressed without a daily dose of my 25 unconditional friends. But, I am determined to quit for good this time."

Essay: Efficacy Enhanced (M2)

Below is some information on quitting smoking. This information is meant to help provide you with an outline to keep in mind when you are thinking about quitting or reading other smoking cessation materials

If you have tried to quit smoking, you may agree that it is not the easiest thing to do. This is not surprising since nicotine *can* be an addictive drug; however, not all smokers are addicted. For a small group of smokers the addiction *may* be powerful, however this is not the case for the majority of smokers. Although a few studies have shown that tobacco can be harder to quit than heroin or cocaine, it is important to remember that this applies to only a small group of smokers

Quitting is a process and many people have been able to kick the habit. In fact the majority of smokers have quit. Smokers from various backgrounds and previous experiences have quit smoking successfully. Many smokers have also been able to quit on their first attempt.

Although quitting takes some planning and effort, you can quit smoking and there are many reasons to quit. Careful preparation is essential.

Looking ahead: benefits of quitting

After quitting you will feel more energetic and less breathless. Studies show that by quitting smoking you may live a longer life and reduce your chances of developing cardiovascular diseases, strokes, heart attacks, and lung cancer. Researchers also have found evidence to suggest that the earlier you quit the more health gains result. Other benefits associated with quitting include better sleep, and better mental health.

There are also benefits for those you love. By quitting smoking you will be protecting your children and loved ones from the harmful effects of the second hand smoke your lit cigarette produces. As a non-smoker you will be a positive role model for those around you (especially children)

Quitting smoking is a big accomplishment and smokers who quit smoking feel proud of their accomplishment. When you succeed in quitting you too will feel good about your accomplishment; a rewarding feeling for a well deserved accomplishment.

Many smokers have already quit, so you can too! Below are tips to help you succeed. Studies show there are 5 key steps that will help you quit and quit for good.

1. Get ready

Start by setting a quit date. The key is to make a commitment to change and develop a quit plan. After setting your quit date, change your home and work environment to be compatible with non-smoking. You should remove all cigarettes, ashtrays, lighters, and not let anyone smoke in your home.

2. Get support

Tell your family and friends that you are quitting and ask them for support and encouragement. It may also be helpful to talk to other smokers who are trying to quit as well as your doctor or other health care providers.

3. Learn new skills and behaviour

To help cope with the urges to smoke, try new activities like taking a walk or something you enjoy doing but that is not related to smoking.

Some smokers report feelings of irritability, grumpiness, and anxiousness when trying to quit. However not all smokers experience these symptoms. There are ways to successfully manage

these symptoms such as relaxation exercises and listening to soothing music. Smokers often state that smoking helps to manage stress. However, you should know that smoking is not a long term solution to managing stress. Alternatives to manage stress after quitting exist and many ex-smokers have found other means to successfully cope with stress aside from smoking.

4. Reward yourself

Reward your hard work by treating yourself to something you enjoy.

5. Be prepared for relapse or difficult situations

It is not uncommon to have a slip or two after quitting smoking.

Don't be discouraged, If this happens to you. Don't panic and remember that a setback is not a big deal. A slip is no reason to give up your new smoke-free behaviour. If you relapse, remember that quitting smoking is a process. Use the relapse as an opportunity to learn. Try to determine what led you to start smoking again and try to plan ahead for the next attempt.

Finally, there are some additional matters to think about before quitting such as situations and places where you commonly smoke. Avoiding such situations and places (where you used to smoke) might help reduce your chance of relapse. Here are some examples of some concerns smokers may have while quitting:

Alcohol: Studies show that drinking lowers chances of success for some smokers.

Other smokers: Being around other smokers can make you want to smoke.

You can talk to your doctor if you are concerned with these or other situations.

You can take control over your smoking and quit. Join the many Canadians who have overcome this hurdle and stopped smoking.

Below is a testimonial from someone who is on the road to quitting.

"I started smoking at the age of 10, can you believe that?

I figured out that I have smoked nearly 200,000 cigarettes in the past 20 years.

It has always been a part of my life, the friend that is always there. It was a way of life for me.

But I realized that I needed to give this habit up.

I have tried to quit once before, but I found that I wasn't prepared. I have learned from that experience and now I am better equipped to succeed. It has been 15 days since my last cigarette and I feel great. I have experienced some withdrawal symptoms, but I have found ways to manage them. I am determined to quit for good this time."

Appendix 10: COE Scale's Descriptive and Test Statistics

Question: COE	N	X	SD	Range	Kappa	T-test T1-T2	Spearman T1*T2 (p-value)
1. Experiencing fewer withdrawal symptoms is important to me	18	4.11111	0.83235	3-5	.2105 01971	1.69 0.1100	0.70347 0.0515
2. As a non-smoker, I will be a positive role-model for others in my life	19	3.05263	1.87005	0-5	0.3515 0.5876	0.19 0.8534	0.60002 0.0876
3. My first quit attempt will most likely end in failure	18	3.55556	1.46417	0-5	.2969 .4622	1.80 0.0896	0.59481 0.0911
4. As a non-smoker I will not be a positive role-model for others in my life	19	1.73684	1.79016	0-5	.5146 .4673	0.21 0.8340	0.30536 0.4243
5. Quitting smoking is an important accomplishment to me	19	3.21053	1.54844	0-5	.2056 .5763	-0.90 0.3800	0.73230 0.0249
6. Quitting smoking will leave me craving for nicotine all the time	19	2.36842	1.46099	0-5	.2218 .4882	0.00 1.0000	0.75000 0.0199
7. I will experience few withdrawal symptoms after quitting	19	1.89474	1.28646	0-4	.1272 0.3124	-1.51 0.1490	0.30090 0.4314
8. My health will not improve as a result of quitting	19	0.26316	0.45241	0-1	.2134 .2345	-1.91 0.0723	0.09005 0.8178
9. I will find other ways to manage my stress after quitting smoking	18	3.50000	1.29479	0-5	.2013 .2164	-0.27 0.7903	0.82090 0.0125
10. Being a positive role model is important to me	19	2.94737	1.95714	0-5	.4184 .6021	0.66 0.5197	0.62635 0.0711
11. After quitting, I will not be able to effectively manage stress	18	1.61111	1.24328	0-4	.2256 .2332	1.76 0.0962	0.87465 0.0045
12. Quitting smoking will make me feel	19	2.21053	1.35724	0-5	.1303	0.16 0.8711	0.46849 0.2034

awful and grumpy					.3472		
13. I will feel good about myself for quitting smoking	18	3.77778	1.26284	0-5	.1567 .1743	1.64 0.1197	0.84276 0.0086
14. My family and friends feeling proud of me for quitting is important to me	19	3.31579	1.82734	0-5	.3357 .6352	0.64 0.5274	0.67829 0.0446
15. I will not feel proud of myself for quitting	18	1.22222	1.59247	0-5	.2437 .3415	-0.27 0.7903	0.46615 0.2443
16. Quitting smoking will make me feel irritable, anxious, and/or restless	19	3.10526	1.32894	0-5	.2562 .4266	1.23 0.2350	0.75258 0.0193
17. I will be able to manage withdrawal symptoms after quitting	19	3.15789	1.06787	1-5	.0730 .1916	-1.68 0.1106	0.64254 0.0620
18. Quitting is important to me	19	3.05263	1.64903	0-5	.3166 .6936	-0.70 0.4944	0.82432 0.0063
19. Since nicotine is a powerful addiction I will experience many withdrawal symptoms	19	2.57895	1.50243	0-5	.0468 .2428	-0.38 0.7060	0.60912 0.0817
20. My friends and family will be proud of me for quitting smoking	19	3.68421	1.37649	0-5	.3448 .5726	1.32 0.2048	0.41865 0.2621
21. I will benefit financially by quitting smoking	19	4.63158	0.68399	3-5	.4277 .6215	1.37 0.1868	0.80403 0.0090
22. My family and friends will not be proud of me for quitting smoking	19	0.84211	1.46299	0-5	.2214 .2347	-1.29 0.2146	0.76303 0.0168
23. It will take me several tries before I successfully quit	19	3.42105	1.38707	0-5	..6371 .8101	-0.44 0.6676	0.97349 <.0001
24. I will not benefit financially by quitting smoking	19	0.63158	1.30002	0-5	2926 .2277	-0.27 0.7899	0.86092 0.0029
25. Managing my stress is important to me	19	3.52632	1.38918	0-5	.4050 .5408	0.00 1.0000	0.25251 0.5121
26. Managing	19	3.42105	1.26121	1-5	.3849	-1.00	0.91729

withdrawal symptoms is important to me.					.3796	0.3306	0.0005
27. Feeling proud about myself is important to me	19	3.68421	1.29326	0-5	.3568 .3765	0.37 0.7162	0.87071 0.0022
28. Saving money by quitting is important to me	19	3.94737	1.35293	0-5	.7020 .7782	1.00 0.3306	1.00000 <.0001
29. I will be unsuccessful at quitting	19	1.73684	1.04574	0-4	.1931 .2711	1.10 0.2871	0.80131 0.0094
30. Improving my health is important to me	19	4.05263	1.22355	0-5	.2487 .2643	-1.29 0.2146	0.84685 0.0040
31. Nicotine is so addictive that I will experience great difficulty trying to break the habit	19	2.26316	1.52177	0-5	.1627 .4187	-1.63 0.1196	0.36842 0.3293
32. I will be successful at quitting	19	3.42105	1.07061	1-5	.0988 .1199	-0.92 0.3672	0.25910 0.5008
33. Managing my cravings is important to me	18	3.77778	1.11437	1-5	.3250 .4208	1.68 0.1094	0.52099 0.1855
34. Quitting smoking is a big accomplishment	18	3.83333	1.04319	1-5	.1750 .4732	1.22 0.2376	0.77460 0.0240
35. My health will immediately improve as a result of quitting smoking	19	3.52632	1.46699	0-5	.2937 .6402	-2.36 0.0296	0.92544 0.0003
36. Quitting smoking is not a big accomplishment	19	1.05263	1.07877	0-4	.2023 .4176	-0.94 0.3597	0.59005 0.0944
37. I will be unsuccessful at managing my withdrawal symptoms	19	1.47368	0.96427	0-3	.3141 .4548	-2.45 0.0245	0.70747 0.0330
38. I will be able to manage cigarette cravings after quitting	19	3.10526	1.14962	1-5	-0.1386 0.1087	-0.96 0.3496	0.66673 0.0498

Appendix 11: Quit-Aid Efficacy Scale's Test and Descriptive Statistics

Question: Quit Aid	N	X	SD	Ran	Kappa Simple Weighted	T-test (t1-t2)	Spear-man
1. The use of prescription medications (such as Zyban, buproprion) will not help me quit and remain smoke-free	19	3.42105	1.34643	1-5	.2214 .3146	1.36 0.1901	0.60379 0.1130
The use of Nicotine Replacement Therapy (patch, gum, or inhaler) will help me quit smoking and remain smoke-free	19	2.26316	1.52177	0-5	.2205 .3721 .	-0.70 0.4953	0.78082 0.0222
3. Joining a group program, calling a telephone support line, or using an individual counselling service will not help me quit and remain smoke free	19	2.84211	1.70825	0-5	.1069 . .2474	-1.64 0.1192	0.56163 0.1474
4. Using smoking cessation aids will not help me quit and remain smoke-free.	19	3.10526	1.14962	1-5	.0965 1852	1.03 0.3171	0.08974 0.8326
5. The use of prescription medications (such as Zyban, buproprion) will help me quit and remain smoke-free.	19	1.78947	1.39758	0-4	.1325 .2500	-0.29 0.7725	0.89222 0.0029
6. Using cessation aids will not make quitting smoking easier for me	19	3.10526	1.19697	1-5	0.2296 .29992	1.57 0.1355	0.87511 0.0044
7. Even though quitting smoking is difficult, using a cessation aid will help make it easier for me to quit	19	2.15789	1.42451	0-4	-0.0227 0.1033	-2.40 0.0279	0.55306 0.1551
8. Joining a group program, calling a telephone support line, or using an individual counselling service will help me quit and remain smoke free	19	1.89474	1.55973	0-5	-0.0506 0.1692	0.37 0.7168	0.67949 0.0638

9. Using Nicotine Replacement Therapy (patch, gum, or inhaler) will not help me quit smoking and remain smoke-free	19	2.78947	1.39758	1-5	0.2125 0.2965	-0.15 0.8839	0.35781 0.3842
10. The use of smoking cessation aids will help me quit and remain smoke-free	19	2.21053	1.35724	0-4	.2235 .2235	-0.44 0.6676	0.60222 0.1141

Appendix 12: Outcome Expectancy Scale’s Descriptive and Test Statistics

Question: Expectancies	N	X	SD	Ran	Kappa	T-test T1-T2	Spearman T1*T2 (p-value)
5. Quitting smoking is an important accomplishment to me	19	3.21053	1.54844	0-5	.2056 .5763	-0.90 0.3800	0.73230 0.0249
10. Being a positive role model is important to me	19	2.94737	1.95714	0-5	.4184 .6021	0.66 0.5197	0.62635 0.0711
14. My family and friends feeling proud of me for quitting is important to me	19	3.31579	1.82734	0-5	.3357 .6352	0.64 0.5274	0.67829 0.0446
18. Quitting is important to me	19	3.05263	1.64903	0-5	.3166 .6936	-0.70 0.4944	0.82432 0.0063
25. Managing my stress is important to me	19	3.52632	1.38918	0-5	.4050 .5408	0.00 1.0000	0.25251 0.5121
26. Managing withdrawal symptoms is important to me.	19	3.42105	1.26121	1-5	.3849 .3796	-1.00 0.3306	0.91729 0.0005
27. Feeling proud about myself is important to me	19	3.68421	1.29326	0-5	.3458 .3562	0.37 0.7162	0.87071 0.0022
28. Saving money by quitting is important to me	19	3.94737	1.35293	0-5	.7020 .7782	1.00 0.3306	1.00000 <.0001
30. Improving my health is important to me	19	4.05263	1.22355	0-5	.3245 .3278	-1.29 0.2146	0.84685 0.0040
33. Managing my cravings is important to me	18	3.77778	1.11437	1-5	.3250 .4208	1.68 0.1094	0.52099 0.1855

Appendix 13: Behavioural Control Scale

	Totally under my control	Somewhat under my control	A little under my control	Neither under my control nor not under my control	A little not under my control	Somewhat not under my control	Totally not under my control
1. The number of withdrawal symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
2. The intensity of the withdrawals symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
3. The frequency with which I will experience cravings after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
4. The intensity of the craving experiences after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
5. Whether I quit smoking or not is…	+3	+2	+1	0	-1	-2	-3

Appendix 14: Qualitative Analysis of Addiction Essay (M1) and Efficacy Enhanced Essay (M2)

Qualitative Analysis of Participant Reactions to Addiction Focused Essay (M1)

Question 6: **In your own words what would you say is the purpose of the essay?**

1.Inform smokers about the harms of smoking and benefits of quitting.

006- This essay gives statistical and medical incentives to quit smoking. Its purpose is to inform the reader on the health risks of smoking (esp. physiological) as well as its addictive nature.

010- I would say that purpose of this essay is to inform smokers about the dangers of smoking…

012-To illustrate some of the effects of smoking…

014- The purpose seemed to be to highlight the negative effects of tobacco use, indicate behaviours that may make quitting easier or more difficult,…

019- To inform the reader about the dangers of smoking…

021- Provide a smoker with the information he/she already knows, but is represented in an original fashion

025- To show the benefits of quitting smoking.

026- The essay highlights the negativities associated with smoking, physical and physiological…the overall purpose is to inform smokers about their addiction and help them quit smoking for good.

2. To make/force smokers to quit
007- To slap smokers on the wrist & make them quit

017- To make me quit smoking, or rather, 'help' me quit smoking.

3. To encourage/provide assistance for quitting

005- to inform the reader that there is a way to bring about change, ie. Quit smoking, if they commit to it

006-The essay also highlights the heath benefits of quitting and gives the reader practical tips to succeed

010-…and to provide encouragement to help them quit.

011- To provide guidelines and encouragement for smokers to quit.

012-…and provide incentives for people to quit. Said incentives also included encouragement

013 The purpose of this essay is to tell smokers that it is possible to quit, even if they think it is not possible.

014-…and provide encouragement that, though difficult, quitting smoking is possible.

015- To convince smokers that to quit is a benefit; to provide assistance with the actuality of quitting

016- To encourage people to quit smoking and provide ideas on how to quit successfully.

018- The purpose of this essay is to encourage people to try quitting smoking

019-…and to help with the quitting process.

020-To tell people that it is difficult, but possible to quit smoking. Also that quitting is good for you and others. It gives advice & instructions for quitting.

022- To encourage people to quit for the health of their friends and family as well as themselves. It addresses the lethality and addictiveness of nicotine by realizing how hard it is to quit. It encourages people to keep trying to quit smoking.

024- To help the reader who is a smoker realize that they can really quit with a bit of work and help

025-… To help those interested in quitting set a plan for quit & to re-affirm why they are doing it.

026-…The benefits of quitting are also mentioned…and help them quit smoking for good.

Question 7: What are the main points of the essay?

1. Smoking/nicotine is addictive

005- smoking is bad/addictive…

006- description of nicotine as an addiction (smoking as a drug)
advantages to quitting (both psychological and physiological)
5-step process/tips to succeed.

007- Nicotine is addictive
People must stop because smoking is disgusting.

010- main points of the essay are:
-effects of nicotine

012-Smoking is addictive and harmful…

013-nicotine is addictive

014- cigarettes are very addictive
smoking has very negative effects on smokers and their loved ones…

015- proof that nicotine is addictive…

016- To demonstrate that smoking is addictive and harmful…

018- smoking is very addictive
smoking is harmful to health

019- smoking as an addiction
health problems relating to smoking

020- Nicotine is really addictive

021- 1. effects of drugs on humans
2. nicotine is the worst kind of drug…

022- that nicotine is highly addictive

024- 1. How addictive nicotine is…

025- smoking is addictive
smoking is bad for your health…

2. Quitting is hard (but not impossible)

007-…Quitting is very difficult for everyone so aid is necessary

012-…Quitting is hard but not impossible
Anyone can quit eventually.

013-…quitting is hard, it may take several attempts… it is possible to quit

016-…that it is difficult to quit, and that it is possible and beneficial to quit.

018-…quitting takes a few times…

3. Tips on quitting

005-…there are strategies to quit
you can do it!

010-…learning how to quit smoking

011- Why so many people smoke
benefits of quitting
the 5 key steps
the testimonial

012-…There is help and strategies available to those trying to quit

013-… to quit successfully you need to change your environment and change the patterns that cause you to smoke…

014-…quitting is made easier by avoiding behaviours that encourage smoking
quitting can be facilitated by setting a quit dates, getting support, using self-rewards, avoiding alcohol and other smokers, and not being discouraged by initial unsuccessful attempts.

015-…steps for quitting smoking
benefits of quitting

018-…steps to quitting

019-…points on how to quit smoking

020-…instructions about how to make quitting easier

021-... some helping tips for a person who wishes to quit smoking.

022-…quitting is extremely difficult
quitting is a process and a lifestyle change
so if you fall off the horse get back on
there are no benefits to quitting

024-…2. You can quit smoking.

025-…quitting is hard but, it can be done

026-The main points range from health hazards to setting up a good plan which may help in quitting smoking.

4. Other
017- 1. Quit like many other have
2. smoking is BAD.-so Quit.
3. You can do it !!!

Question 8: Which sentences or phrases stick out most to you?

1. Addiction is more powerful than the addiction to heroin and cocaine

006-"…more powerful than an addiction to heroin or cocaine"

010- tobacco can be harder to quit than heroin or cocaine

011- nicotine addiction is more powerful than an addiction to heroin or cocaine.

012-nicotine is the drug in tobacco that causes addiction
tobacco can be harder to quit then heroin or cocaine

013- "The addiction to nicotine is more powerful than an addiction to heroin or cocaine"
The essay is trying to tell people that is possible to quit, this statement is discouraging and I have a hard time believing it is true anyways.

014- "the addiction to nicotine is more powerful than an addiction to heroin or cocaine"
015- " studies have shown…"ahhh…what who where??
"the addiction to nicotine is more powerful than an addiction to heroin or cocaine" (although remain skeptical)

016-…The sentence on smoking patterns which if broken are disturbing, because I never thought about this before but realize it is very true. That addiction is nicotine is stronger than heroin or cocaine.

017- More powerful than heroin or cocaine.

018- addiction nicotine is more powerful than heroin/cocaine.

019- tobacco can be harder to quit then cocaine/heroin

020- "mood-altering effects" on nicotine
nicotine more powerful addiction than heroin & cocaine

021- In fact, studies have shown that tobacco can be harder to quit than heroin or cocaine.

025- nicotine is more addictive than heroin or cocaine

quitting is hard
symptoms include physiological & physical dependence, w/drawl & compulsive drug use.

026-The second sentence which stands out is “ tobacco can be harder to quit than heroin or cocaine”.

2. Several tries

014-“people often make several tries before finally being able to quit”

015-“most people don’t manage to stay off tobacco the first time…” (good intentions but may lead to an attitude of complacency)

018-…Quitting smoking takes more than one try.

3.Effects of nicotine

006--“…psychological…and physical dependence.”
“psychoactive, or mood altering effects…”

025-…symptoms include physiological & physical dependence, w/drawl & compulsive drug use.

4. Benefits of quitting
006-“…better sleep, better mental health…”

007-…better smelling clothes and breath.

010-better sleep, better mental health

016- the sentences on effects of smoking esp. poor sleep and mental health since I have not heard about this before.

019-…benefits associated with quitting smoking include better sleep

020- quitting = better sleep & mental health
don’t let other people smoke in your house

022- That you will sleep better, which is something I was not aware of. That is the only thing is the essay that I have never heard before.

5. Tips to quitting
Reward yourself
“avoiding such situations and places…”

012-…the earlier you quit, the more health benefits you will receive.
The key is to make a commitment to change and develop a quit plan.
Most relapses occur within the first 3 months of quitting.

014-"…the earlier you quit the more health benefits you will receive"
"studies show that drinking lowers your chances of success"
"being around smokers can make you want to smoke"

017-…The 5 key steps needs work I think. Prepare for relapse or difficult situations. Avoid drinking alcohol.

6. Testimonial

006-200000 cigarettes
"…a friend that is always there…a way of life…"
"…daily dose fo my 25 unconditional friends."

010-200000 cigarettes in the past 20 yrs.

026- The testimonial is of vital importance because it shows a person who started smoking at age 10!

7.other
005- The phrases that make the boldest claims, which grab my attention, but also create a sense of cynicism.

007- the experienced smoker has a lot of smoking pattern that (if broken) are disturbing.

024- nothing really. I knew all the fact mentioned

Question 10: Please list the information (if any) that is new to you.

1. As addictive as heroin and cocaine
010- psychoactive
tobacco can be harder to quit then heroin or cocaine

020- harder to quit smoking then heroin

021- tobacco can be harder to quit than heroin or cocaine

2. Benefits of quitting

016- quitting can result in better sleep and better mental health.

019- better sleep after quitting smoking

020- quitting = better sleep
mood-altering effects of nicotine

022- sleeping better

3. Obstacles to quitting

005- the perspective that its use can strengthen the behaviour
the alcohol connection with lower success, which I've always experienced, but never seen mentioned.

019-drinking lowers chance of success

025- "5 steps" in helping somebody quit

Question 12: Would you like to say anything else about the essay? Please comment:

1. The 5-steps are useful

006- The 5-step process was the most useful part.

013 The 5 steps at the end are useful to keep in mind if I was trying to quit smoking.

016- The 5 key steps to quitting are a very good idea and a practical way to help people who already want to quit.

2. repeat info:
006-…Most smokers already know about nicotine & addiction. (even more so than non-smokers)

015- All information contained I have heard/read/seen before; it seems that "Quitting smoking" has become such a regular part of everyday life (ads on packs, ads on tv, studies etc…) that I no longer even notice it.

3. ways to improve the essay
005-What about the connection to lack of blood flow to the outer extermeties, and how it effects sex? Not just men with impotence, but women with blood flow to vagina

007- Very aggressive is overall tone. SMOKERS DON'T WANT to be YELLED at.

011- being encouraging in a positive tone may not be effective for all personality types. Personally, If the focus was on the terrible effects of smoking and included statistics, I would have been more compelled to quit

014- more examples of alternate behaviours or activities would be useful

016-…But the information prior does not persuade smokers enough on why they should quit (I think stats, numbers would make more of an impact)

020- It emphasizes how hard it is to quit which makes you want to not bother trying (somewhat)

021- information provided could have been justified with evidence. A smoker might need better tips to be able to quit smoking

022- I think it needs to be more daring, these are things that most smokers are aware of. Maybe some visual aids or more personal stories.

026- In my own research on smoking I also looked at how smoking disturbs the ** in the skin. This leads to 'blackening' of the face in most smokers. The essay is unique but more diseases should be mentioned including emphysema and cancer. Also the reduction of cilia in the throat etc.

017-I believe I wrote notes on the actual essay.

Qualitative Analysis of Participant Reactions to the Efficacy Enhanced Essay (M2)

Question 6: **In your own words what would you say is the purpose of the essay?**

1. Encourage/help smokers to quit/quitting is "doable"

005- #1, that you can quit!
And some info on approaches and attitudes

006-The essay's purpose is to inform the reader that quitting smoking is not a big deal as it is made out to be. Quitting is completely doable and that the greater part of the smoking population are fully capable. It also includes reasons why one should quit and some practical steps to follow.

010- the purpose of this essay is focused more on the helping of smokers to quit

011-To encourage people to quit smoking

012-To show people that there is life after quitting and that quitting is both beneficial and quite doable.

013- The purpose of this essay is the same as the first (M1). To get smokers to quit smoking. This essay seems to appeal to the smokers than the first (M1), and makes it seem possible to quit.

014-To encourage smokers to quit and suggest techniques for doing so.

015-To provide support for smokers who have decided to quit.

016- To encourage people who want to quit smoking as well people who are unsure/considering quitting.

017- To 'help' me quit smoking
To encourage me to quit smoking

018- the purpose of this essay is to encourage smokers to join other who have quit and make positive changes in their lives.

019- To help people quit smoking

020- To tell people that quitting smoking is easier than thought. Also to provide tips for quitting for good.

021- Help persons/smokers who wish to quit smoking, through their own understanding.

2. Quitting not as hard as believed to be
006-The essay's purpose is to inform the reader that quitting smoking is not a big deal as it is made out to be

020- To tell people that quitting smoking is easier than thought

025-That nicotine is addictive → to some, and it may be hard to quit → for some
But, for those who are not able to quit easily there are 5 steps that can help.

3. Oversimplifies quitting

022- it seems that this essay tries to gloss over the struggles of quitting as to convince people that it isn't as hard as they think it may be. It plays up the rewards but truthfully people who quit still crave nicotine for years after.

024- Quitting smoking is good for you.

026- To enhance a smoker's knowledge about his/her addiction and to give him/her encouragement in order to quit.

4. Other
007- Smoking hurts YOU and people around you. Why not quit?

Question 7: What are the main points of the essay?

1.You may not be as addicted as you think
005-some have more difficulty than others (key!)

011- you may not be as addicted as you think

012-Not all smokers develop powerful addiction
There are many benefits to quitting
Quitting is not hard for most and is rewarding for everyone
Quitting is a process requiring preparation.

013- 1. While nicotine is an addiction, its not that bad

015- MANY people before you have successfully quit.

016- That smoking is not just an addiction but also a habit. That it is difficult for some to quit but easier for others. That the hardest part of quitting is relapsing but that this is normal and easy to overcome with persistence.

018- most people find it easy to quit
a lot of people have quit and are happier
it is not always guaranteed that quitting is easy.

020- nicotine is not as addictive as people say
quitting is easy
you should quit
points to help quit.

025- nicotine can be addictive to some.
Nicotine can be more addictive than heroin or cocaine
It can be hard to quit smoking, but it is beneficial.

2. You can quit
005- you can do it
it is not impossible

006- the majority of smokers can and do quit

007- smoking can hurt the smoker and people around.
Smoking is just a habit that CAN be knocked
Quitting is a process

011- … there is a very good success rate

012-Not all smokers develop powerful addiction
There are many benefits to quitting
Quitting is not hard for most and is rewarding for everyone
Quitting is a process requiring preparation.

015- MANY people before you have successfully quit.
Benefits of quitting
5 key steps

016- That smoking is not just an addiction but also a habit. That it is difficult for some to quit but easier for others. That the hardest part of quitting is relapsing but that this is normal and easy to overcome with persistence.

018- most people find it easy to quit
a lot of people have quit and are happier
it is not always guaranteed that quitting is easy.

022- quitting is fairly easy and lots of people do it. The rewards of quitting are so great you will never think of smoking again.

3. Steps to quitting

006- 5 key steps to take

010- main points of this essay are how to quit smoking

011- …
2. there is a very good success rate
3. benefits of quitting
4. the 5 steps
5. testimonial

013- …
2. You'll feel better after quitting
3. Quitting smoking is a process
4. If you want to quit, follow the steps they give.

014- Smoking can be very addictive
there are many ill effects of smoking
quitting is easier with setting dates, avoiding behavior that encourages it, getting help from loved ones or doctors, and not being discouraged by failed attempts.

015-…5 key steps

016- That smoking is not just an addiction but also a habit. That it is difficult for some to quit but easier for others. That the hardest part of quitting is relapsing but that this is normal and easy to overcome with persistence.

017- 1. Quit
2. There are ways to quit.
3. There are alternatives to the benefits in smoking.

019- Benefits to quitting
Steps to quitting

020- nicotine is not as addictive as people say
quitting is easy
you should quit
points to help quit.

021- 1. the writer, getting to the same level of thought as a smoker who wishes to quit would be in. 2. Excellent representation of the 'quitting' tips.

026- Health concerns have been outlined and steps to quit smoking are encouraging.

024- You will live a better life after you quit smoking

Question 8: Which sentences or phrases stick out most to you?

1. Not a powerful addiction for all smokers
006- powerful addiction is "not the case for the maj. of smokers."

007- Remember, quitting smoking is a process Not all smokers experience these (grumpiness etc) symptoms

010- nicotine can be an addictive drug
smoking is not a long term solution to managing stress

011- not all smokers are addicted
tobacco can be very hard to quit (harder than heroin) but for only a small group of smokers

013-"the addiction may be powerful, however this is not the case for the majority of smokers"

014-"smokers from various backgrounds and previous quit experiences have quit smoking successfully"
"it is important to remember that this applies only to a small group of smokers"
"careful preparation is essential"
"the earlier you quit the more health gains result"

016- the sentences about smoking being powerful to some but not the majority of- I related to this. That it is not necessarily as addictive as heroin or cocaine- this made me feel the essay was talking to me more, not some other person. Smoking is more of a habit to me, and being talked about it like an addiction distances me from the topic.

018- not all smokers are addicted

019- nicotine can be an addictive drug
many smokers have quit on the first attempt

020- for majority of smokers, addiction is not powerful
many smokers quit their first try
not all smokers experience withdrawal

022- "for a small group of smokers the addiction may be powerful"
"the majority of smokers have quit"

025- Although a few studies have shown tobacco…only to small group of smokers.

Many smokers have also been able to quit on their first attempt.

2. Quit on first try/majority have quit
005-… " majority have quit
…quit on first try = too bold a claim

006- "Majority of smokers have quit." (first attempt).
019- …many smokers have quit on the first attempt
020- …many smokers quit their first try
not all smokers experience withdrawal
022- …"the majority of smokers have quit"
025- …Many smokers have also been able to quit on their first attempt.
026- 'many smokers have been able to quit on their first attempt'
'quitting include better sleep, and better mental health'

3. Benefits/ steps of quitting
005-…less breatheless ?!
mental health ?
5 steps/hints are standard stuff…

006-…"…more energetic and less breathless."
"…better sleep, better mental health."
"…not all smokers experience these symptoms."
Reward yourself
Quitting smoking is a process
Avoid such situations and places
200000 cigarettes
friends that always there…way of life.

007- Remember, quitting smoking is a process Not all smokers experience these (grumpiness etc) symptoms

015- quitting smoking is a big accomplishment…"
Key Steps #5 (entire paragraph is brilliant)

016- …"more energetic, less breathless:
"big accomplishment" "proud" "role-model" these are encouraging and uplifting. Speak to me directly
relapse info-learn from it. Plan ahead.

017- "Determined" 'for good!

018- …quitting is a rewarding feeling
learn from our mistakes

026-… 'quitting include better sleep, and better mental health'

4. Other
005-…quit on first try = too bold a claim
when you quit = too positive?
General argument

Question 10: Please list the information (if any) that is new to you

1. Nicotine is not a powerful addiction for all smokers/Not all smokers experience great difficulty quitting

006- (powerful addiction) not the case for the majority of smokers
majority of smokers quit
better mental health

007- not all smokers have a hard time quitting.

010- nicotine can be an addictive drug.

011- the part about only a small portion of smokers actually being really addicted.

018- nicotine can be addictive
not all smokers are addicted

020- most smokers aren't really addicted but I don't believe that.

021- Although a few studies have shown that tobacco can be harder to quit than heroin or cocaine.

022- …only small per cent of smokers are addicted

2. many have quit on their first try/majority have quit

006- (powerful addiction) not the case for the majority of smokers
majority of smokers quit
better mental health

018- …majority of smokers have quit

022- most smokers have quit
only small per cent of smokers are addicted
many quit on their 1st attempt

026- 'many smokers have been able to quit on the first attempt'

3. Benefits of quitting
016- as with the first essay, just the part on better sleep and better mental health.

Question 12: Would you like to say anything else about the essay? Please comment:

1.Doesn't force or push people into quitting
005- good that it doesn't emphasize the difficulty as much
don't push the reader, make it a choice…eg. When you quit

015- I much prefer this essay (M2) because it seems to address people who have decided to quit previously. Since you can't force someone to quit, only help when they have decided to go for it.

2. Doesn't emphasize difficulty of quitting or compare smokers to drug addicts

005- good that it doesn't emphasize the difficulty as much

006- It doesn't freak people out by making smoking seem like a cocaine habit. By downplaying smoking in general it makes quitting seem more manageable and less intimidating.
006-By downplaying smoking in general it makes quitting seem more manageable and less intimidating.

3. Personable/comforting/sympathetic/encouraging/Positive tone

016- Very encouraging compared to the first one. The first one felt like I was reading a paper. This one felt like I was being addressed specifically. The tone is more comforting and friendly too. It is non-condescending (unlike the first one).

026- This essay is interesting and encouraging.

7.other
007- overall tone seems more REAL

011- this essay grabbed my interest in the first paragraph

017- Needs to provide more gruesome details about smoking to 'scare' smokers to quit. Written too 'nice'.

021- Excellent representation, well formatted and unambiguous.

Question 13: Please answer the following questions only after you have read both essays. Circle the essay you prefer or liked most: Please comment on your choice:

M2: Efficacy Enhancement Manipulation
1. Doesn't emphasize difficulty of quitting or compare smokers to drug addicts

012- The M2 essay did not emphasize how difficult quitting is. On the contrary, it tried to encourage readers by saying that chances are their addiction isn't all that powerful and can, indeed, be broken.
M2 doesn't try to liken smoking to an illegal serious addiction like heroin use, too. It emphasizes benefits of quitting over harm and problem of smoking.

014- (M2) seemed to be more honest about the nature of addiction and seemed to make quitting more plausible.

016- (M2) see above (#12) much better approach. Doesn't make smokers feel like dirty addicts, but people who care about themselves and others. Takes smokers more seriously, recognizes it is a lifestyle problem. Non-condescending uplifting.

018- …it focuses on the "success" of quitting rather than on the "harms" of not quitting.

2. Personable/comforting/sympathetic/encouraging/Positive tone
005 -better flow
better written
better mood/attitude taken

007 - Very positive and seems to sympathize w/smokers more.

011- more interesting I thought. Motivated me more to actually care what the steps were.

012- On the contrary, it tried to encourage readers by saying that chances are their addiction isn't all that powerful and can, indeed, be broken.

013-I like the general tone of the second (M2) essay better, it seemed realistic and not as lofty as the first (M1). The second essay makes it seem more possible to quit.

014- (M2) seemed to be more honest about the nature of addiction and seemed to make quitting more plausible.

015- (M2) Feels as though writing by someone who actually smoked and quit, while M1 feels like an brochure put out by non-smokers who have not ever experienced any form of addiction.

016- (M2) see above (#12) much better approach. Doesn't make smokers feel like dirty addicts, but people who care about themselves and others. Takes smokers more seriously, recognizes it is a lifestyle problem. Non-condescending uplifting.

018- (M2) M2 is more positive and encouraging, it focuses on the "success" of quitting rather than on the "harms" of not quitting.

021- (M2) M2 has positive tone, and is very easy to understand the writer's preferences

024- (M2) it was more encouraging and positive

026- (M2) Even though M1 has a descriptive intro which includes U.S Surgeon General's report. I feel that encouragement and hope are the key tools to help smokers quit – M2 seems more positive

3. novel information

006 - *M1* = Repetative info. /could just look on the pack.
(M2) This is the 1st time in a long time that any anti-smoking material has told me anything new.
013-I like the general tone of the second (M2) essay better, it seemed realistic and not as lofty as the first (M1). The second essay makes it seem more possible to quit.

M1: Existing Addiction Oriented Messages

1.Not much difference between two essays (simple preference)

017- (M1) A little more detail. But really there wasn't much difference. Both essays brought nothing new on to the table.

019-(M1) no major reasons
more proofs/sources (Surgeon General)
I thought both were very similar

2. More scientific and factual

019-(M1) no major reasons
more proofs/sources (Surgeon General)
I thought both were very similar

3. M2 was discouraging/oversimplified quitting

020- (M1) M2 kinda makes you feel like a loser if you can't quit. Since it IS hard to quit, it makes the reader feel weak for being addicted.

022-(M1) M2 took quitting a little too lightly and made It seem easier than it really is.

025- (M1) M2 made quitting to be not that big a deal…but…it really is quitting is a huge deal! M1 showed that it was challenging & motivated me to want to quit.

Appendix 15: Primary Study Information Letter and Consent Form

Fauzia Ashraf
Department of Health Studies and Gerontology
University of Waterloo
519 888-4567 x 6810
fashraf@ahsmail.uwaterloo.ca

March 8, 2005

Dear Sir or Madam,

You are being invited to participate in a research study to help evaluate materials on healthy living. In the past, it has been shown that the content of materials can impact how people react to these material and the decisions they make. We would like to determine smokers' responses to newly developed education and mass media materials on healthy living.

This study is being conducted by Fauzia Ashraf (graduate student) under the supervision of Dr. Paul McDonald, both of whom are with the Department of Health Studies and Gerontology at the University of Waterloo.

As a research participant, you will be asked to fill out a questionnaire prior to reading the material. After reading the material you will be asked to fill out another questionnaire. We would like to contact you again in approximately 30 days to ask you another set of questions over the telephone. In addition to this, you will also be asked to keep all your empty cigarette packages for the 30-day follow-up period and mail it back to us in the postage paid envelopes we will provide you with. You may leave unanswered questions you prefer not to answer. The first session will take approximately 50 minutes and the telephone survey will take approximately 15 minutes.

Your assistance in this study will help us develop more effective and accepted educational materials. Although no guarantee can be made, you may also personally benefit by participating in this study. As a participant, you will be provided with a self-help book on quitting smoking. This book is yours to keep and contains lots of useful information on smoking and tips on how to help you quit.
There are no anticipated risks to your participation in this study

We would like to provide you with $25 as token of our appreciation and recognition of the time and costs associated with your participation. You may refuse to participate at any time by advising the researcher of this decision. If you withdraw from the study, you may still keep any money and materials that have been given to you.

All information collected from you, and others who participate, will be grouped together. Your name will not appear in any report, publication or presentation resulting from this study. All information that can identify participants, such as yourself, will be removed from the data to ensure confidentiality. The data will be kept for a period of 5 years and will

be securely stored in a locked office in the research laboratory and a password protected computer.

If you have questions, please contact Fauzia Ashraf at (519) 888-4567 ext. 6810 or by email at fashraf@ahsmail.uwaterloo.ca

This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics. In the event you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes in the office of Research Ethics at 519-888-4567, Ext. 6005.

Thank you for your assistance with this research project.

Sincerely,

Fauzia Ashraf, MSc Candidate
Student Researcher
Dept. of Health Studies
& Gerontology
University of Waterloo

Paul McDonald, Ph D
Associate Professor
Dept. of Health Studies
& Gerontology
University of Waterloo

I have read the information presented in the information letter about a study being conducted by Fauzia Ashraf of the Department of Health Studies and Gerontology at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted. I am aware that I may withdraw from the study without penalty at any time by advising the researchers of this decision.

This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Director, Office of Research Ethics at (519) 888-4567 ext. 6005.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

____

Print Name

____

Signature of Participant

____

Dated at Kitchener/Waterloo, Ontario

____

Witnessed

Appendix 16: Primary Study Instruction Sheet

Instructions

You have been provided with an envelope that contains 2 questionnaires and 1 essay on healthy living.

Step 1: Please fill out survey #1. As soon as you finish the survey, please put it back into the envelope provided.

Step 2: Read the essay. As you read the essay please underline all phrases, sentences, or paragraphs that stand out to you or that you feel are important.

Step 3: After reading the essay, please fill out survey #2. Please put both the essay and the survey back into the envelope provided and return it to the researcher.

Step 5: Please schedule your follow-up telephone survey before leaving.

Thank you for you time, your efforts are greatly appreciated.

Appendix 17: Primary Study Baseline Questionnaire (T1)

Part I: For the following questions, please circle the appropriate answers for you

1. Please indicate your sex: Male Female

2. Please circle your age category (years) 18-25 26-50 50+

Part II: For the following questions, please indicate your answer in the space provided

3. On average, how many cigarettes do you smoke per day? __________

4. How many years have you been smoking? __________

5. At what age did you start smoking? __________

6. How many times, if any, have you tried to quit smoking? _________

Part III: The following are some situations in which certain people might be tempted to smoke. Please indicate whether you are sure that you could *refrain* from smoking in each situation by circling the letter corresponding to your answer.

7. When I feel nervous.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

8. When I feel depressed.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sur

9. When I am angry.

A. Not at all sure
B. Not very sure

C. More or less sure
D. Fairly sure
E. Absolutely sure

10. When I feel very anxious.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

11. When I want to think about a difficult problem.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

12. When I feel the urge to smoke.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

13. When having a drink with friends.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

14. When celebrating something.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

15. When drinking beer, wine or other spirits.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

16. When I am with smokers.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

17. After a meal.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

18. When having coffee or tea.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

Part IV: For the following questions, please circle the letter next to your answer.

1. How soon after you wake up do you smoke your first cigarette?

A. Within 5 minutes
B. 6-30 minutes
C. 31-60 minutes
D After 60 minutes

2. Do you find it difficult to refrain from smoking in places where it is forbidden (e.g. in church, at the library, in cinema, etc.?)

A. Yes
B. No

3. Which cigarette would you hate most to give up?

A. The first one in the morning
B. All others

4. How many cigarettes/day do you smoke?

A. 10 or less
B. 11-20
C. 21-30
D. 31 or more

5. Do you smoke more frequently during the first hours after waking than during the rest of the day?

A. Yes
B. No

6. Do you smoke if you are so ill that you are in bed most of the day?

A. Yes
B. No

Part V: Instructions: For each of the following, rate yourself on how you have been feeling over the past twenty-four hours

1. Anger, irritability, frustration

None Slight Mild Moderate Severe

2. Anxiety, nervousness

None Slight Mild Moderate Severe

3. Difficulty concentrating

None Slight Mild Moderate Severe

4. Impatience, restlessness

None Slight Mild Moderate Severe

5. Hunger

None Slight Mild Moderate Severe

6. Awakening at night

None Slight Mild Moderate Severe

7. Depression

None Slight Mild Moderate Severe

8. Desire to smoke

None Slight Mild Moderate Severe

9. On a scale from 1 to 10, where 1 is no craving at all, and 10 is extreme cravings, how strong is your smoking craving now?

1 2 3 4 5 6 7 8 9 10

10. How addicted are you to smoking?

Not at all addicted Not very addicted Somewhat addicted Very addicted

11. In your opinion how addictive is smoking for most people who smoke?

Not at all addictive Not very addictive Somewhat addictive Very addictive

Part VI: Instructions: For each of the following, rate yourself on how much control you believe you have in each case by circling the appropriate response	**Totally under my control**	**Somewhat under my control**	**A little under my control**	**Neither under my control nor not under my control**	**A little not under my control**	**Somewhat not under my control**	**Totally not under my control**
1. The number of withdrawal symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
2. The intensity of the withdrawals symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
3. The frequency with which I will experience cravings after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
4. The intensity of the craving experiences after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
5. Whether I quit smoking or not is…	+3	+2	+1	0	-1	-2	-3

Part VIIa: Below is a list of statements about the possible consequence of quitting and how important the consequences are for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. My mood will improve after I quit smoking.	+3	+2	+1	0	-1	-2	-3
2. Quitting smoking is unlikely to improve my health all that much.	+3	+2	+1	0	-1	-2	-3
3. I will find other ways to manage stress after quitting smoking.	+3	+2	+1	0	-1	-2	-3
4. I will feel happy after I quit smoking.	+3	+2	+1	0	-1	-2	-3
5. Quitting smoking will make me a more positive role model for family and friends.	+3	+2	+1	0	-1	-2	-3
6. My health will improve as a result of quitting smoking.	+3	+2	+1	0	-1	-2	-3
7. It will take several tries before I successfully quit smoking.	+3	+2	+1	0	-1	-2	-3
8. After quitting smoking, I will have more difficulty managing stress.	+3	+2	+1	0	-1	-2	-3
9. I will be unsuccessful at quitting smoking.	+3	+2	+1	0	-1	-2	-3
10 I will experience many withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
11. My family and friends will be proud of me for quitting smoking.	+3	+2	+1	0	-1	-2	-3

12. If I continue to smoke, I wouldn’t be a very good role model.	+3	+2	+1	0	-1	-2	-3
13. I will experience few withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
14. Quitting smoking will leave me craving for nicotine.	+3	+2	+1	0	-1	-2	-3
15. I will feel restless or bored after I quit smoking.	+3	+2	+1	0	-1	-2	-3
16. It will be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
17 I will be able to quit smoking the next time I try.	+3	+2	+1	0	-1	-2	-3
18. It won’t be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
19. My family and friends don’t really care if I quit smoking.	+3	+2	+1	0	-1	-2	-3
20. Quitting smoking will cause me to feel grumpy.	+3	+2	+1	0	-1	-2	-3
21. After I quit smoking, I will find other ways to pass the time.	+3	+2	+1	0	-1	-2	-3
22. I will feel sad or depressed after I quit smoking.	+3	+2	+1	0	-1	-2	-3
23. My mood will temporarily get worse after I quit smoking.	+3	+2	+1	0	-1	-2	-3
24. After I quit smoking, I don’t expect I will crave nicotine all that much.	+3	+2	+1	0	-1	-2	-3
25. My next quit attempt will most likely end in failure.	+3	+2	+1	0	-1	-2	-3
26. Quitting smoking will make me feel awful.	+3	+2	+1	0	-1	-2	-3

27. I will be successful at quitting smoking.	+3	+2	+1	0	-1	-2	-3
28. My next quit attempt will most likely end in failure.	+3	+2	+1	0	-1	-2	-3

Part VIIb: Below is a list of statements about quitting and how important each is for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. Quitting smoking is an important accomplishment to me.	+3	+2	+1	0	-1	-2	-3
2. Being a positive role model is important to me.	+3	+2	+1	0	-1	-2	-3
3. My family and friends feeling proud of me for quitting is important to me.	+3	+2	+1	0	-1	-2	-3
4. Quitting is important to me.	+3	+2	+1	0	-1	-2	-3
5. Managing my stress is important.	+3	+2	+1	0	-1	-2	-3
6. Saving money by quitting is important to me.	+3	+2	+1	0	-1	-2	-3
7. Improving my health is important to me.	+3	+2	+1	0	-1	-2	-3

Part VIIc: The next few questions will ask you about the different ways to quit smoking and how they might relate to you. For each of the statements, please indicate to what extent you AGREE or DISAGREE by circling the appropriate number. If you AGREE with the statement, circle a number from 1 to 3. If you DISAGREE with the statement, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. The use of prescription medications (such as Zyban, buproprion) will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
2. The use of Nicotine Replacement Therapy (patch, gum, or inhaler) will help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
3. Joining a group program, calling a telephone support line, or using an individual counselling service will not help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
4. Using smoking cessation aids will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
5. The use of prescription medications (such as Zyban, buproprion) will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
6. Using quit aids will not make quitting smoking easier for me.	+3	+2	+1	0	-1	-2	-3
7. Even though quitting smoking is difficult, using a quit aid will help make it easier for me to quit.	+3	+2	+1	0	-1	-2	-3
8. Joining a group program, calling a telephone support line, or using an individual counselling service will help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
9. Using Nicotine Replacement Therapy (patch, gum, or inhaler) will not help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
10. The use of smoking quit aids will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3

Appendix 18: Intervention Essays

M1: Addiction Oriented

M2: Efficacy-enhanced

M3: Control

Addiction focused (M1)

Below is some information on quitting smoking. This information is meant to help provide you with an outline to keep in mind when you are thinking about quitting or reading other smoking cessation materials.

If you have tried to quit smoking you know how hard it can be to quit, on average former smokers can make anywhere from 8-11 quit attempts before succeeding.

This is not surprising since nicotine is a very addictive drug.

Facts on Nicotine Addiction:

Research shows that the symptoms of a drug addiction include physiological and physical dependence, withdrawal, and compulsive drug use. That is, smokers addicted to cigarettes will experience both a psychological dependence and physical dependence, in addition to withdrawals symptoms. Researchers in the area of addiction have stated that the behaviour of smoking meets many of the criteria needed to qualify as an addiction these include:

1. A highly controlled or compulsive pattern of drug use. *The experienced smoker has a lot of smoking patterns that (if broken) are disturbing.*
2. Exerts mood-altering effects.
3. Nicotine functions as a reinforcement to strengthen behavior which leads to further drug ingestion. *It's the nicotine that keeps people smoking.*

Researchers have concluded that cigarettes and other forms of tobacco are addicting and that nicotine is the drug in tobacco that causes addiction.

The addiction to nicotine is more powerful than an addiction to heroin or cocaine. In fact, studies have shown that tobacco can be harder to quit than heroin or cocaine.

Quitting is hard. Most people don't manage to stay off tobacco the first time they try to quit smoking. People often make several tries before finally being able to quit. Although quitting takes hard work and a lot of effort, you can quit smoking and there are many reasons to quit. Careful preparation is essential.

Looking ahead: benefits of quitting

Studies show that by quitting smoking you may live a longer life and reduce your chances of developing cardiovascular diseases, strokes, heart attacks, and lung cancer. Researchers also have found evidence to suggest that the earlier you quit the more health benefits you will receive. Other benefits associated with quitting include better sleep, better mental health, and better smelling clothes and breath. There are also benefits for those you love. By quitting smoking you will be protecting your children and loved ones from the harmful effects of the second hand smoke your lit cigarette produces.

Many smokers have already quit and you can too! Below are tips to help you succeed. Studies show there are 5 key steps that will help you quit and quit for good.

1. Get ready

Start by setting a quit date. The key is to make a commitment to change and develop a quit plan. After setting your quit date, change your home and work environment to be compatible with non-smoking. You should remove all cigarettes, ashtrays, lighters, and not let anyone smoke in your home.

2. Get support

Tell your family and friends that you are quitting and ask them for support and encouragement. It may also be helpful to talk to smokers who are trying to quit as well as your doctor or other health care providers.

3. Learn new skills and behaviour

To help cope with the urges to smoke, try new activities like taking a walk or doing something you enjoy that is not related to smoking. Smokers report feelings of irritability, grumpiness, and anxiousness when trying to quit. There are ways to help manage these symptoms such as relaxation exercises and listening to soothing music Smokers often state that smoking helps to manage stress. However, you should know that smoking is not a long term solution to managing stress.

4. Reward yourself

Reward your hard work by treating yourself to something you enjoy.

5. Prepare for relapse or difficult situations

Most relapses occur within the first 3 months of quitting. Don't be discouraged if you start smoking again. Remember, most people try several times before they finally quit.

Finally, there are some additional matters to think about before quitting such as situations and places where you commonly smoke. Avoiding such situations and places (where you used to smoke) might help reduce your chance of relapse. Here are some examples of some concerns smokers have had while quitting:

Alcohol: Avoid drinking alcohol. Studies show that drinking lowers your chances of success.

Other smokers: Being around other smokers can make you want to smoke.

You can talk to your doctor if you are concerned with these or other situations.

You can take control over your smoking and quit. Join the many Canadians who have overcome this hurdle and stopped smoking.

Below is a testimonial from someone who is trying to quit.

"I started smoking at the age of 10, can you believe that?

I figured out that I have smoked nearly 200,000 cigarettes in the past 20 years. I never thought that I could make it one day without smoking. It has always been a part of my life, a friend that is always there. It was a way of life for me.

I have tried to quit many times before (probably about 7) and each time I try, it feels like the hardest thing I have ever done. No wonder they say it's as bad as giving up heroin or cocaine. I haven't given up though, and I am in the middle of another quit attempt.

It has been 15 days since my last cigarette. Sometimes I feel anxious and depressed without a daily dose of my 25 unconditional friends. But, I am determined to quit for good this time."

Efficacy Enhanced (M2)

Below is some information on quitting smoking. This information is meant to help provide you with an outline to keep in mind when you are thinking about quitting or reading other smoking cessation materials

If you have tried to quit smoking, you may agree that it is not the easiest thing to do. This is not surprising since nicotine *can* be an addictive drug; however, not all smokers are addicted. Research suggests that for a small group of smokers the addiction *may* be powerful, however this is not the case for the majority of smokers. Although a few studies have shown that tobacco can be harder to quit than heroin or cocaine, it is important to remember that this applies to only a small group of smokers.

Quitting is a process and many people have been able to kick the habit. In fact the majority of smokers have quit. Smokers from various backgrounds and previous experiences have quit smoking successfully. Many smokers have also been able to quit on their first attempt.

Although quitting takes some planning and effort, you can quit smoking and there are many reasons to quit. Careful preparation is essential.

Looking ahead: benefits of quitting

After quitting you will feel more energetic and less breathless. Studies show that by quitting smoking you may live a longer life and reduce your chances of developing cardiovascular diseases, strokes, heart attacks, and lung cancer. Researchers also have found evidence to suggest that the earlier you quit the more health gains you will receive. Other benefits associated with quitting include better sleep, and better mental health.

There are also benefits for those you love. By quitting smoking you will be protecting your children and loved ones from the harmful effects of the second hand smoke that your lit cigarette produces. As a non-smoker you will be a positive role model for those around you (especially children)

Quitting smoking is a big accomplishment and smokers who quit smoking feel proud of their accomplishment. When you succeed in quitting you too will feel good about your accomplishment; a rewarding feeling for a well deserved accomplishment.

Many smokers have already quit, so you can too! Below are tips to help you succeed. Studies show there are 5 key steps that will help you quit and quit for good.

1. Get ready

Start by setting a quit date. The key is to make a commitment to change and to develop a quit plan. After setting your quit date, change your home and work environment to be compatible with non-smoking. You should remove all cigarettes, ashtrays, lighters, and not let anyone smoke in your home.

2. Get support

Tell your family and friends that you are quitting and ask them for support and encouragement. It may also be helpful to talk to other smokers who are trying to quit as well as your doctor or other health care providers.

3. Learn new skills and behaviour

To help cope with the urges to smoke, try new activities like taking a walk or something you enjoy doing but that is not related to smoking.

Some smokers report feelings of irritability, grumpiness, and anxiousness when trying to quit; however not all smokers experience these symptoms. There are ways to successfully

manage these symptoms such as relaxation exercises and listening to soothing music. Smokers often state that smoking helps to manage stress; however, you should know that smoking is not a long term solution to managing stress. Alternatives to manage stress after quitting exist and many ex-smokers have found other means to successfully cope with stress aside from smoking.

4. Reward yourself

Reward your hard work by treating yourself to something you enjoy.

5. Be prepared for relapse or difficult situations

It is not uncommon to have a slip or two after quitting smoking.
Don't be discouraged, if this happens to you. Don't panic and remember that a setback is not a big deal. A slip is no reason to give up your new smoke-free behaviour. If you relapse, remember that quitting smoking is a process. Use the relapse as an opportunity to learn. Try to determine what led you to start smoking again and try to plan ahead for the next attempt.

Finally, there are some additional matters to think about before quitting such as situations and places where you commonly smoke. Avoiding such situations and places (where you used to smoke) might help reduce your chance of relapse. Here are some examples of some concerns smokers may have while quitting:

Alcohol: Studies show that drinking lowers chances of success for some smokers.

Other smokers: Being around other smokers can make you want to smoke.

Talk to your doctor if you are concerned with these or other situations.

You can take control over your smoking and quit. Join the many Canadians who have overcome this hurdle and stopped smoking.

Below is a testimonial from someone who is on the road to quitting.

“I started smoking at the age of 10, can you believe that?

I figured out that I have smoked nearly 200,000 cigarettes in the past 20 years.

It has always been a part of my life, the friend that is always there. It was a way of life for me. But I realized that I needed to give this habit up.

I have tried to quit once before, but I found that I wasn’t prepared. I have learned from that experience and now I am better equipped to succeed. It has been 15 days since my last cigarette and I feel great. I have experienced some withdrawal symptoms, but I have found ways to manage them. I am determined to quit for good this time.”

Control Essay (M3)

Staying or becoming healthy is important to most Canadians. Following just few guidelines can help you achieve this goal. Here are some simple tips for making sure you are as healthy as you can be.

Eat healthy. Eating well doesn't mean giving up the foods you love; it means choosing a variety of foods and choosing lower fat foods more often. According to Canada's food guide you should choose whole grains more often, dark green, orange vegetables and orange fruit more often, lower-fat milk products more often, and leaner meats, poultry and fish, as well as dried peas, beans and lentils more often. Furthermore, different people need different amounts of food. The amount of food you need every day from the 4 food groups (fruits and vegetables, milk products, meats and alternatives, and grain products) and other foods depends on your age, body size, activity level, and whether you are male, female or if you are pregnant or breast-feeding. That's why the Food Guide gives a lower and higher number of servings for each food group.

In addition to selecting healthier food choices, you should also check the nutrition labels. New regulations published on January 1, 2003, make nutrition labeling mandatory on most food labels. This allows you, the consumer, to make informed decisions about the food you select. Under the new regulations, producers of prepackaged foods will have to declare the number of Calories and the amount of fat, saturated and *trans* fats, cholesterol, sodium, carbohydrate, fiber, sugars, protein, vitamins A and C, calcium and iron in a specified amount of food. Therefore, the *Nutrition Facts* table will allow you to compare products

more easily, assess the nutritional value of more foods and help you to better manage special diets.

Stay Active. Physical activity reduces stress, strengthens the heart and lungs, increases energy levels, helps you maintain and achieve a healthy body weight, and it improves your outlook on life.

It is important to include physical activity in daily life. Research shows that physical inactivity can cause premature death, chronic disease and disability. There are many programs available that can help you find fun ways to be active every day of the year - at home, at work, within your community.

Active living is more than just physical fitness or exercise. It means making physical activity a part of daily living, whether it's gardening or taking the dog for a walk or taking the kids out to fly a kite. Active living encourages everyone, not just people who are young and fit, to get up and get moving.

Canada’s Guide for Active living can provide you with details about how much exercise you need to get. However, most adults should try to get at least 20 minutes of exercise at least 3 or 4 times per week. Be sure to warm up and cool down before and after an exercise session.

Drink responsibly. Excessive alcohol consumption can damage your body. For example, even people who drink moderately experience shrinkage in brain size and weight. It may impair your memory and ability to solve problems. Drinking too much at one sitting can cause heart problems, including an irregular heart beat. Most people know that too much

alcohol can cause liver damage, but it can also harm the pancreas and stomach, and increases your chances of developing certain types of cancer. Too much alcohol can also jeopardize your social relationships, performance at work or school, and increase your risk of either being in an accident, or injuring someone else. Finally, drinking alcohol while pregnant can seriously harm your baby.

To reduce your risk of health problems associated with drinking, follow five simple rules. First, never drive or operate equipment after drinking. Second, avoid "binging". This means that men should never drink more than five drinks in a row and women should never drink more than four drinks in a single occasion. Third, men should never drink more than 14 standard drinks (including beer, wine, and spirits) a week. Women should not average more than 7 drinks per week. Forth, always check with your doctor or pharmacists before drinking while taking medication. Finally, if you are a woman, don't drink while you are pregnant or breast feeding. Never encourage a woman who is pregnant or breast feeding to drink.

Here are 7 other simple steps to help you live a healthier life.

1. Select a Buddy!

   Be sure your health buddy is someone who will encourage you all the way. You should be in contact with your Health Buddy daily!

2. Drink More Water

   GRADUALLY increase water intake to ½ your body weight in ounces. (For example, a 150lb. person would gradually increase water intake to 75oz. Or 9.4 glasses daily) *Disclaimer: Please check with your physician if you have been*

diagnosed with congestive heart failure, kidney disease, edema, or any condition that restricts fluid intake.

3. Take Time to Breath Deeply

   Inhale through nostrils to the count of 4, hold for 16 and exhale for 8. Repeat 10 times. (Do three times daily)

4. Schedule Time for Rest & Play

Having fun is an important part of healthy living. Schedule time for adequate rest and the hobbies you enjoy.

5. Adjust your Eating Schedule

Eat like a King for breakfast, a Queen for lunch and a Pauper for supper. Space meals 5 hours apart, drink water in between.

6. Get Adequate Amounts of Sunlight

Using the proper safety precautions, get 10 to 15 minutes, 2 to 3 times weekly. (This builds Vitamin D & can help to lower blood pressure)

7. Give Someone a Reason to Smile

Develop meaningful relationships with friends and family. Do something nice for someone daily.

Appendix 19: Post intervention Questionnaire (T2)

Part I: The following are some situations in which certain people might be tempted to smoke. Please indicate whether you are sure that you could *refrain* from smoking in each situation.

1. When I feel nervous.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

2. When I feel depressed.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

3. When I am angry.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

4. When I feel very anxious.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

5. When I want to think about a difficult problem.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

6. When I feel the urge to smoke.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

7. When having a drink with friends.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

8. When celebrating something.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

9. When drinking beer, wine or other spirits.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

10. When I am with smokers.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

11. After a meal.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

12. When having coffee or tea.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

Part III: Instructions: For each of the following, rate yourself on how much control you believe you have in each case by circling the appropriate response	**Totally under my control**	**Somewhat under my control**	**A little under my control**	**Neither under my control nor not under my control**	**A little not under my control**	**Somewhat not under my control**	**Totally not under my control**
1. The number of withdrawal symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
2. The intensity of the withdrawals symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
3. The frequency with which I will experience cravings after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
4. The intensity of the craving experiences after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
5. Whether I quit smoking or not is…	+3	+2	+1	0	-1	-2	-3

Part IVa: Below is a list of statements about the possible consequence of quitting and how important the consequences are for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. My mood will improve after I quit smoking.	+3	+2	+1	0	-1	-2	-3
2. Quitting smoking is unlikely to improve my health all that much.	+3	+2	+1	0	-1	-2	-3
3. I will find other ways to manage stress after quitting smoking.	+3	+2	+1	0	-1	-2	-3
4. I will feel happy after I quit smoking.	+3	+2	+1	0	-1	-2	-3
5. Quitting smoking will make me a more positive role model for family and friends.	+3	+2	+1	0	-1	-2	-3
6. My health will improve as a result of quitting smoking.	+3	+2	+1	0	-1	-2	-3
7. It will take several tries before I successfully quit smoking.	+3	+2	+1	0	-1	-2	-3
8. After quitting smoking, I will have more difficulty managing stress.	+3	+2	+1	0	-1	-2	-3
9. I will be unsuccessful at quitting smoking.	+3	+2	+1	0	-1	-2	-3

10 I will experience many withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
11. My family and friends will be proud of me for quitting smoking.	+3	+2	+1	0	-1	-2	-3
12. If I continue to smoke, I wouldn't be a very good role model.	+3	+2	+1	0	-1	-2	-3
13. I will experience few withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
14. Quitting smoking will leave me craving for nicotine.	+3	+2	+1	0	-1	-2	-3
15. I will feel restless or bored after I quit smoking.	+3	+2	+1	0	-1	-2	-3
16. It will be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
17 I will be able to quit smoking the next time I try.	+3	+2	+1	0	-1	-2	-3
18. It won't be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
19. My family and friends don't really care if I quit smoking.	+3	+2	+1	0	-1	-2	-3
20. Quitting smoking will cause me to feel grumpy.	+3	+2	+1	0	-1	-2	-3
21. After I quit smoking, I will find other ways to pass the time.	+3	+2	+1	0	-1	-2	-3

22. I will feel sad or depressed after I quit smoking.	+3	+2	+1	0	-1	-2	-3
23. My mood will temporarily get worse after I quit smoking.	+3	+2	+1	0	-1	-2	-3
24. After I quit smoking, I don’t expect I will crave nicotine all that much.	+3	+2	+1	0	-1	-2	-3
25. My next quit attempt will most likely end in failure.	+3	+2	+1	0	-1	-2	-3
26. Quitting smoking will make me feel awful.	+3	+2	+1	0	-1	-2	-3
27. I will be successful at quitting smoking.	+3	+2	+1	0	-1	-2	-3
28. My next quit attempt will most likely end in failure.	+3	+2	+1	0	-1	-2	-3

Part IVb: Below is a list of statements about quitting and how important each is for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. Quitting smoking is an important accomplishment to me.	+3	+2	+1	0	-1	-2	-3
2. Being a positive role model is important to me.	+3	+2	+1	0	-1	-2	-3
3. My family and friends feeling proud of me for quitting is important to me.	+3	+2	+1	0	-1	-2	-3
4. Quitting is important to me.	+3	+2	+1	0	-1	-2	-3
5. Managing my stress is important.	+3	+2	+1	0	-1	-2	-3
6. Saving money by quitting is important to me.	+3	+2	+1	0	-1	-2	-3
7. Improving my health is important to me.	+3	+2	+1	0	-1	-2	-3

Part IVc: The next few questions will ask you about the different ways to quit smoking and how they might relate to you. For each of the statements, please indicate to what extent you AGREE or DISAGREE by circling the appropriate number. If you AGREE with the statement, circle a number from 1 to 3. If you DISAGREE with the statement, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. The use of prescription medications (such as Zyban, buproprion) will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
2. The use of Nicotine Replacement Therapy (patch, gum, or inhaler) will help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
3. Joining a group program, calling a telephone support line, or using an individual counselling service will not help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
4. Using smoking cessation aids will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
5. The use of prescription medications (such as Zyban, buproprion) will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
6. Using quit aids will not make quitting smoking easier for me.	+3	+2	+1	0	-1	-2	-3
7. Even though quitting smoking is difficult, using a quit aid will help make it easier for me to quit.	+3	+2	+1	0	-1	-2	-3
8. Joining a group program, calling a telephone support line, or using an individual counselling service will help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
9. Using Nicotine Replacement Therapy (patch, gum, or inhaler) will not help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
10. The use of smoking quit aids will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3

Appendix 20: 30 Day Follow-up Telephone Survey and Script (T3)

TELEPHONE SCRIPT

For 30-day Call Back Questionnaire

Researcher: HI, May I please speak to [name participant]?

Researcher: My name is Fauzia Ashraf and I am calling from the Health Behaviour Research Group at University of Waterloo. As you might recall, approximately 30 days ago you came into the University to participate in a study. At that time, you scheduled today (today's date and current time) for your follow-up telephone survey. If it is alright with you, I would like to proceed by asking you some questions.

Participant - No, could you call back later (agree on a more convenient time to call person back)

Date/Time:____

Participant - Yes, proceed with survey

Before Beginning: May I confirm the correct spelling of your name and your complete mailing address so I can send out some information about the study?

Name:

Mailing address:

Part II: The following are some situations in which certain people might be tempted to smoke. After I read each situation and response option, please tell me if you are sure that you could *refrain* from smoking in each situation.

1. When I feel nervous.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

2. When I feel depressed.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

3. When I am angry.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

4. When I feel very anxious.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

5. When I want to think about a difficult problem.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

6. When I feel the urge to smoke.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

7. When having a drink with friends.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

8. When celebrating something.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

9. When drinking beer, wine or other spirits.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

10. When I am with smokers.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

11. After a meal.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

12. When having coffee or tea.

A. Not at all sure
B. Not very sure
C. More or less sure
D. Fairly sure
E. Absolutely sure

Part III: Instructions: For each of the following, rate yourself on how much control you believe you have in each case by circling the appropriate response	**Totally under my control**	**Somewhat under my control**	**A little under my control**	**Neither under my control nor not under my control**	**A little not under my control**	**Somewhat not under my control**	**Totally not under my control**
1. The number of withdrawal symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
2. The intensity of the withdrawals symptoms I will experience after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
3. The frequency with which I will experience cravings after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
4. The intensity of the craving experiences after quitting smoking is…	+3	+2	+1	0	-1	-2	-3
5. Whether I quit smoking or not is…	+3	+2	+1	0	-1	-2	-3

Part IVa: Below is a list of statements about the possible consequence of quitting and how important the consequences are for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. My mood will improve after I quit smoking.	+3	+2	+1	0	-1	-2	-3
2. Quitting smoking is unlikely to improve my health all that much.	+3	+2	+1	0	-1	-2	-3
3. I will find other ways to manage stress after quitting smoking.	+3	+2	+1	0	-1	-2	-3
4. I will feel happy after I quit smoking.	+3	+2	+1	0	-1	-2	-3
5. Quitting smoking will make me a more positive role model for family and friends.	+3	+2	+1	0	-1	-2	-3
6. My health will improve as a result of quitting smoking.	+3	+2	+1	0	-1	-2	-3
7. It will take several tries before I successfully quit smoking.	+3	+2	+1	0	-1	-2	-3
8. After quitting smoking, I will have more difficulty managing stress.	+3	+2	+1	0	-1	-2	-3
9. I will be unsuccessful at quitting smoking.	+3	+2	+1	0	-1	-2	-3
10 I will experience many withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
11. My family and friends will be proud of me for quitting smoking.	+3	+2	+1	0	-1	-2	-3

12. If I continue to smoke, I wouldn't be a very good role model.	+3	+2	+1	0	-1	-2	-3
13. I will experience few withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
14. Quitting smoking will leave me craving for nicotine.	+3	+2	+1	0	-1	-2	-3
15. I will feel restless or bored after I quit smoking.	+3	+2	+1	0	-1	-2	-3
16. It will be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
17 I will be able to quit smoking the next time I try.	+3	+2	+1	0	-1	-2	-3
18. It won't be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
19. My family and friends don't really care if I quit smoking.	+3	+2	+1	0	-1	-2	-3
20. Quitting smoking will cause me to feel grumpy.	+3	+2	+1	0	-1	-2	-3
21. After I quit smoking, I will find other ways to pass the time.	+3	+2	+1	0	-1	-2	-3
22. I will feel sad or depressed after I quit smoking.	+3	+2	+1	0	-1	-2	-3
23. My mood will temporarily get worse after I quit smoking.	+3	+2	+1	0	-1	-2	-3
24. After I quit smoking, I don't expect I will crave nicotine all that much.	+3	+2	+1	0	-1	-2	-3
25. My next quit attempt will most likely end in failure.	+3	+2	+1	0	-1	-2	-3
26. Quitting smoking will make me feel awful.	+3	+2	+1	0	-1	-2	-3
27. I will be successful at quitting smoking.	+3	+2	+1	0	-1	-2	-3

28. My next quit attempt will most likely end in failure.	+3	+2	+1	0	-1	-2	-3

Part IVb: Below is a list of statements about quitting and how important each is for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. Quitting smoking is an important accomplishment to me.	+3	+2	+1	0	-1	-2	-3
2. Being a positive role model is important to me.	+3	+2	+1	0	-1	-2	-3
3. My family and friends feeling proud of me for quitting is important to me.	+3	+2	+1	0	-1	-2	-3
4. Quitting is important to me.	+3	+2	+1	0	-1	-2	-3
5. Managing my stress is important.	+3	+2	+1	0	-1	-2	-3
6. Saving money by quitting is important to me.	+3	+2	+1	0	-1	-2	-3
7. Improving my health is important to me.	+3	+2	+1	0	-1	-2	-3

Part IVc: The next few questions will ask you about the different ways to quit smoking and how they might relate to you. For each of the statements, please indicate to what extent you AGREE or DISAGREE by circling the appropriate number. If you AGREE with the statement, circle a number from 1 to 3. If you DISAGREE with the statement, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. The use of prescription medications (such as Zyban, buproprion) will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
2. The use of Nicotine Replacement Therapy (patch, gum, or inhaler) will help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
3. Joining a group program, calling a telephone support line, or using an individual counselling service will not help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
4. Using smoking cessation aids will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
5. The use of prescription medications (such as Zyban, buproprion) will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
6. Using quit aids will not make quitting smoking easier for me.	+3	+2	+1	0	-1	-2	-3
7. Even though quitting smoking is difficult, using a quit aid will help make it easier for me to quit.	+3	+2	+1	0	-1	-2	-3
8. Joining a group program, calling a telephone support line, or using an individual counselling service will help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
9. Using Nicotine Replacement Therapy (patch, gum, or inhaler) will not help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
10. The use of smoking quit aids will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3

Part V: I am going to begin by asking you some questions about your current smoking status.

Cigarette Consumption and Quit Attempts:

1. Have you smoked, even a single puff, in the last 7 days?
Yes No Don't know/can't say

2. Since your appointment at the University of Waterloo, have you tried to quit smoking?
Yes No Don't Know/Can't say

If yes

2.a. How many times have you tried to have you tried to quit smoking?

3. What date or long ago did you start your first quit attempt since your appointment at the University of Waterloo?

Date:
How long ago:

4. How long did you remain smoker free since the last quit attempt (days)

5. Since your visit to the University of Waterloo, have you used any of the following methods to help you quit smoking?

Self –help booklet, pamphlet, cassette or video Y N

Nicotine patch, gum or inhaler Y N

Brief Counseling or advice from a doctor, dentist, pharmacist, nurse or other health care professional Y N

A support group Y N

Acupuncture, hypnosis or laser therapy Y N

Zyban Y N

A telephone quit line or helpline for smokers Y N

Internet website and/or chat group Y N

Herbal therapy Y N

Other (specify)_____________________________ Y N

Finally, before finishing up, I want to remind you to send us all the empty cigarette packages we had asked you to keep in the postage envelope we provided you with. What proportion of the packages were you able to keep?

100% 75% 50% 25% 0%

Finally, did you want us to send you a self-help booklet on quitting smoking? Y N

Appendix 21: Fagerstrom Test for Nicotine Dependence Questionnaire and Psychometric Properties

Psychometric Properties of Fagerstrom Test for Nicotine Dependence

The FTND is a revised version of the 8-item Fagerstrom Tolerance Questionnaire (FTQ) which possesses lower internal consistency compared to the FTND.

The FTND has been validated for adult populations and has acceptable psychometric properties: its' internal consistency is between .61 to .64 (higher than the FTQ) (Heatherton, Kozolwski, Freker, & Fagerstrom, 1991), test-retest of 0.88 for periods of about two six weeks (Pomerleau, et al., 1994). FTND scores have also been found to be correlated other measures of dependence including: breath samples of carbon monoxide (Heatherton et al.,1991), levels of cotinine in salivary samples (Heatherton et al., 1991; (Pomerleau, et al., 1994), and scores on measures of addictive reasons for smoking (Pomerleau et al., 1994).

Fagerstrom Test for Nicotine Dependence Questionnaire

Source: Heatherton, T.F., Kozlowski, L.T., Freker, R.C., Fagerstrom, K.O. (1991). The Fagerstrom Test for Nicotine Dependence: a revision of the Fagerstrom Tolerance Questionnaire. *British Journal of Addiction*, 86, 1119-1127.

Questions	Response Options	Points
1. How soon after you wake up do you smoke your first cigarette?	Within 5 minutes 6-30 minutes 31-60 minutes After 60 minutes	3 2 1 0
2. Do you find it difficult to refrain from smoking in places where it is forbidden (e.g. in church, at the library, in cinema, etc.?)	Yes No	1 0
3. Which cigarette would you hate most to give up?	The first one in the morning All others	1 0
4. How many cigarettes/day do you smoke?	10 or less 11-20 21-30 31 or more	0 1 2 3
5. Do you smoke more frequently during the first hours after waking than during the rest of the day?	Yes No	1 0
6. Do you smoke if you are so ill that you are in bed most of the day?	Yes No	1 0

Scoring**:**

0-2 points = very low dependence
3-5 points = medium dependence
6-7 points = high dependence
8-10 points= very high dependence

Appendix 22: Perceived Level of Addiction and Psychometric Properties

Psychometric Properties of Perceived Level of Addiction

The item used to measure participants' perceived level of addition originates from a study by Paul McDonald and Taryn McKnight (in progress). The item demonstrated a test re-test reliability of K= .677 and was moderately correlated with the Cigarette Dependence Scale (r=.559) and to the FTND (r=.430).

Perceived Level of Addiction Question

Question	Response option
1. How addicted are you to smoking?	Not at all addicted (1) Not very addicted (2) Somewhat addicted (3) Very addicted (4)

Scoring: Higher score reflects higher level of perceived addiction

Appendix 23: The Minnesota Withdrawal Scale and Psychometric Properties

Psychometric Properties of The Minnesota Withdrawal Scale

The Minnesota Withdrawal Scale was listed in *The Tobacco Dependence Treatment Handbook: A Guide To Best Practices* (Abrams, Niaura, Brown, Emmons Goldstein, & Mnoti, 2003). This book is meant as a best practices guide, and therefore, only contains validated tools to measure constructs related to smoking and smoking cessation. The tools are listed with a brief description, intended use, and corresponding references for obtaining published psychometric properties. Although, the Minnesota Withdrawal Scale's psychometric properties could not be ascertained in time for this proposal, the validity of this tool is not an issue.

The Minnesota Withdrawal Scale Questionnaire

Source: Hughes, J.R., & Hatsukami, D. (1986). Signs and Symptoms of Tobacco Withdrawal. Archives of General Psychiatry, 43(3), 289-294.

Instructions: For each of the following, rate yourself on how you have been feeling over the past twenty-four hours

Questions	Response Options	Scoring
1. Anger, irritability, frustration	None Slight Mild Moderate Severe	0 1 2 3 4
2. Anxiety, nervousness	None Slight Mild Moderate Severe	0 1 2 3 4
3. Difficulty concentrating	None Slight Mild Moderate Severe	0 1 2 3 4
4. Impatience, restlessness	None Slight Mild Moderate Severe	0 1 2 3 4
5. Hunger	None Slight Mild Moderate Severe	0 1 2 3 4
6. Awakening at night	None Slight Mild Moderate Severe	0 1 2 3 4
7. Depression	None Slight Mild Moderate Severe	0 1 2 3 4

8. Desire to smoke	None Slight Mild Moderate Severe	0 1 2 3 4

Scoring: A total withdrawal discomfort score is calculated by adding the scores for individual items. Higher scores reflect higher levels of discomfort.

Appendix 24: Smoking Self-Efficacy Scale and Psychometric Properties

Psychometric Properties of the Smoking Self-Efficacy Scale

Internal consistency coefficients for both the subscales (internal and external stimuli) within the *Smoking Self Efficacy Questionnaire* (SEQ-12) were good with a cronbach's alpha =.95 for internal stimuli and .94 for external stimuli (Etter, Bergman, Humair & Perenger, 2000). Test-retest reliability ranged from .86-.94 for all items on the scale. The SEQ-12 covers all situations covered by more than two published scales along with all important high risk categories identified in qualitative data collected by the researchers (Etter et al., 2000). The only questions not included in the SEQ-12, which traditionally has been included in self-efficacy questionnaires, were items about smoking during a pause or break or smoking when facing conflicts with others. The qualitative data showed that these two items were not found to be important categories for relapse or temptation (Etter et al., 2000).

In addition to the excellent content validity, the scale also demonstrated good construct validity. Scores from the SEQ-12 were associated with *The Stages of Change*, smoking status (higher scores were found in former smokers compared to current smokers); cigarettes smoked per day (all items were strongly correlated with the number of cigarettes smoked per day); quit attempts in the past year (with higher self-efficacy scores for those current smokers who had made a quit attempt in the past year compared to current smokers who made no such attempt); and confidence in the ability to quit smoking exhibited (Etter et al., 2000). The SEQ-12 also exhibited good predictive validity; consistent with the scales prediction, six baseline smokers quit at follow-up. Finally, in terms of discriminant validity, both scales were independently associated with smoking status but not with smoking cessation at follow-up, quit attempts in the past year, or with the number of cigarettes smoked per day (Etter et al., 2000).

Smoking Self-Efficacy Questionnaire (SEQ-12)

Source: Etter, J.F., Bergman, M.M., Humair, J.P., & Perneger, T.V. (2000). Development and validation of a scale measuring self-efficacy of current and former smokers. *Addiction*, 95(6), 901-913

Instructions: The following are some situations in which certain people might be tempted to smoke. Please indicate whether you are sure that you could *refrain* from smoking in each situation.

Response	Options	Points
1. When I feel nervous.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
2. When I feel depressed.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
3. When I am angry.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
4. When I feel very anxious.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
5. When I want to think about a difficult problem.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
6. When I feel the urge to smoke.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
7. When having a drink with friends.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5

8. When celebrating something.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
9. When drinking beer, wine or other spirits.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
10. When I am with smokers.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
11. After a meal.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5
12. When having coffee or tea.	Not at all sure Not very sure More or less sure Fairly sure Absolutely sure	1 2 3 4 5

Scoring**:** Higher the score indicate greater the self-efficacy to refrain from smoking

Appendix 25: Cessation Outcome Expectation Scale

Cessation Outcome Expectation Questionnaire

Below is a list of statements about the possible consequence of quitting and how important the consequences are for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	Strongly Agree	Moderately Agree	Mildly Agree	Neither Agree nor Disagree	Mildly Disagree	Moderately Disagree	Strongly Disagree
1. My mood will improve after I quit smoking.	+3	+2	+1	0	-1	-2	-3
2. Quitting smoking is unlikely to improve my health all that much.	+3	+2	+1	0	-1	-2	-3
3. I will find other ways to manage stress after quitting smoking.	+3	+2	+1	0	-1	-2	-3
4. I will feel happy after I quit smoking.	+3	+2	+1	0	-1	-2	-3
5. Quitting smoking will make me a more positive role model for family and friends.	+3	+2	+1	0	-1	-2	-3
6. My health will improve as a result of quitting smoking.	+3	+2	+1	0	-1	-2	-3
7. It will take several tries before I successfully quit smoking.	+3	+2	+1	0	-1	-2	-3
8. After quitting smoking, I will have more difficulty managing stress.	+3	+2	+1	0	-1	-2	-3
9. I will be unsuccessful at quitting smoking.	+3	+2	+1	0	-1	-2	-3
10 I will experience many withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
11. My family and friends will be proud of me for quitting smoking.	+3	+2	+1	0	-1	-2	-3

12. If I continue to smoke, I wouldn't be a very good role model.	+3	+2	+1	0	-1	-2	-3
13. I will experience few withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
14. Quitting smoking will leave me craving for nicotine.	+3	+2	+1	0	-1	-2	-3
15. I will feel restless or bored after I quit smoking.	+3	+2	+1	0	-1	-2	-3
16. It will be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
17 I will be able to quit smoking the next time I try.	+3	+2	+1	0	-1	-2	-3
18. It won't be difficult to cope with withdrawal symptoms after quitting.	+3	+2	+1	0	-1	-2	-3
19. My family and friends don't really care if I quit smoking.	+3	+2	+1	0	-1	-2	-3
20. Quitting smoking will cause me to feel grumpy.	+3	+2	+1	0	-1	-2	-3
21. After I quit smoking, I will find other ways to pass the time.	+3	+2	+1	0	-1	-2	-3
22. I will feel sad or depressed after I quit smoking.	+3	+2	+1	0	-1	-2	-3
23. My mood will temporarily get worse after I quit smoking.	+3	+2	+1	0	-1	-2	-3
24. After I quit smoking, I don't expect I will crave nicotine all that much.	+3	+2	+1	0	-1	-2	-3
25. My next quit attempt will most likely end in failure.	+3	+2	+1	0	-1	-2	-3
26. Quitting smoking will make me feel awful.	+3	+2	+1	0	-1	-2	-3
27. I will be successful at quitting smoking.	+3	+2	+1	0	-1	-2	-3

Scoring:

Questions	**Coding**	**Scoring**
1, 3, 3, 4, 5, 6, 11, 12, 13, 15, 17, 18, 21, 24, 27	Normal	Strongly agree = 3 Moderately agree = 2 Mildly agree = 1 Neither agree nor disagree = 0 Mildly disagree = -1 Moderately disagree = -2 Strongly disagree = -3
2, 7, 8, 9, 10, 14, 16, 19, 20, 22, 23, 25, 26	Reverse	Strongly agree = -3 Moderately agree = -2 Mildly agree = -1 Neither agree nor disagree = 0 Mildly disagree = 1 Moderately disagree = 2 Strongly disagree = 3

Scores are obtained by adding the response items to give a summary score.

Appendix 26: Outcome Expectancy Scale

Outcome Expectancy Scale

Instructions to participants: Below is a list of statements about quitting and how important each is for you. For each of the statements please rate how much you AGREE or DISAGREE with the statement by circling the appropriate number. If you AGREE circle a number from 1 to 3. If you DISAGREE, circle a number from -1 to -3.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. Quitting smoking is an important accomplishment to me.	+3	+2	+1	0	-1	-2	-3
2. Being a positive role model is important to me.	+3	+2	+1	0	-1	-2	-3
3. My family and friends feeling proud of me for quitting is important to me.	+3	+2	+1	0	-1	-2	-3
4. Quitting is important to me.	+3	+2	+1	0	-1	-2	-3
5. Managing my stress is important.	+3	+2	+1	0	-1	-2	-3
6. Saving money by quitting is important to me.	+3	+2	+1	0	-1	-2	-3
7. Improving my health is important to me.	+3	+2	+1	0	-1	-2	-3

Scoring:

Response Option	**Value**
Strongly agree	3
Moderately agree	2
Mildly agree	1
Neither agree nor disagree	0
Mildly disagree	-1
Moderately disagree	-2
Strongly disagree	-3

Scores are obtained by adding the response items to give a summary score.

Appendix 27: Quit-Aid Efficacy Scale

Quit-aid Efficacy Questionnaire

Instructions to participants: Below is a list of statements about the different ways to quit smoking and how they might relate to you. For each of the statements, please indicate to what extent you AGREE or DISAGREE. If you DISAGREE with the statement, mark a number from 0-2. If you AGREE with the statement, mark a number from 3-5.	**Strongly Agree**	**Moderately Agree**	**Mildly Agree**	**Neither Agree nor Disagree**	**Mildly Disagree**	**Moderately Disagree**	**Strongly Disagree**
1. The use of prescription medications (such as Zyban, buproprion) will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
2. The use of Nicotine Replacement Therapy (patch, gum, or inhaler) will help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
3. Joining a group program, calling a telephone support line, or using an individual counselling service will not help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
4. Using smoking cessation aids will not help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
5. The use of prescription medications (such as Zyban, buproprion) will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
6. Using quit aids will not make quitting smoking easier for me.	+3	+2	+1	0	-1	-2	-3
7. Even though quitting smoking is difficult, using a quit aid will help make it easier for me to quit.	+3	+2	+1	0	-1	-2	-3
8. Joining a group program, calling a telephone support line, or using an individual counselling service will help me quit and remain smoke free.	+3	+2	+1	0	-1	-2	-3
9. Using Nicotine Replacement Therapy (patch, gum, or inhaler) will not help me quit smoking and remain smoke-free.	+3	+2	+1	0	-1	-2	-3
10. The use of smoking quit aids will help me quit and remain smoke-free.	+3	+2	+1	0	-1	-2	-3

Scoring:

Questions	Coding	Scoring
2, 5, 7, 8, 10	Normal	Strongly agree = 3 Moderately agree = 2 Mildly agree = 1 Neither agree nor disagree = 0 Mildly disagree = -1 Moderately disagree = -2 Strongly disagree = -3
1, 3, 4, 6, 9	Reverse	Strongly agree = -3 Moderately agree = -2 Mildly agree = -1 Neither agree nor disagree = 0 Mildly disagree = 1 Moderately disagree = 2 Strongly disagree = 3

Scores are obtained by adding the response items. Higher scores represent stronger quit aid efficacy.

Appendix 28: Demographic and Smoking History

Demographic and Smoking History Questionnaire

Demographic Information:

1. Please indicate your sex (M/F): ___

2. Please circle your age category (years) 18-25 26-50yrs 50+yrs

Smoking History:

1. On average, how many cigarettes do you smoke per day? ____

2. How many years have you been smoking? _____

3. At what age did you start smoking? _______

4. How many times have you tried to quit smoking?_______

Appendix 29: Single Item Craving Questionnaire and Psychometric Properties

Psychometric Properties of the Single Item Craving Questionnaire

The single item craving questionnaire was also listed in *The Tobacco Dependence Treatment Handbook: A Guide To Best Practices* (Abrams, Niaura, Brown, Emmons Goldstein, & Mnoti, 2003). This book is meant as a best practices guide, and therefore, only contains validated tools to measure constructs related to smoking and smoking cessation. The tools are listed with a brief description, intended use, and corresponding references for obtaining published psychometric properties. Although, the psychometric properties of this item could not be ascertained, the validity of this tool is not an issue.

Craving Assessment Question

Source: Kazlowski, L., Pillitteri, J., Sweeney, C., Whitfield, K., & Graham, J. (1996). Asking about Urges or Cravings for Cigarettes. Psychology of Addictive Behaviours, 10(4), 248-260.

Question: "On a scale from 1 to 10, where 1 is no craving at all, and 10 is extreme cravings, how strong is your smoking craving now?"

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